S. HRG. 105–439

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1998

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

ONE HUNDRED FIFTH CONGRESS

FIRST SESSION

ON

H.R. 2203/S. 1004

AN ACT MAKING APPROPRIATIONS FOR ENERGY AND WATER DEVELOPMENT FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1998, AND FOR OTHER PURPOSES

Department of Defense—Civil
Department of Energy
Department of the Interior
Nondepartmental witnesses

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CONTENTS

THURSDAY, MARCH 20, 1997

	Page
Department of Energy: Atomic Energy Defense Activities	1

TUESDAY, APRIL 15, 1997

Department of Energy: Bonneville Power Administration	105

TUESDAY, APRIL 22, 1997

Department of Energy: Environmental Restoration and Waste Management	157

THURSDAY, APRIL 24, 1997

Department of the Interior: Bureau of Reclamation	295
Department of Defense—Civil: Department of the Army: Corps of Engineers—Civil	343

NONDEPARTMENTAL WITNESSES

California Water Resource Development Projects	453
California Navigation Projects	549
Colorado River Basin Water Resource Development Projects	562
Department of Energy Research and Development Programs	577
Lower Mississippi River Valley Flood Control and Navigation Projects	627
New York/New Jersey Water Resources Project	666
Ohio River Valley Water Resource Development Projects	678
Pacific Northwest Water Resource Development Projects	684
Southeast U.S. Water Resource Development Projects	716
Southwestern U.S. Water Resource Projects	774
Midwest Water Resource Development Projects	791
Texas Water Resource Development Projects	828
Upper Plains Water Resource Projects	839

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1998

THURSDAY, MARCH 20, 1997

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 9:40 a.m., in room SD–124, Dirksen Senate Office Building, Hon. Pete V. Domenici (chairman) presiding.

Present: Senators Domenici and Reid.

DEPARTMENT OF ENERGY

ATOMIC ENERGY DEFENSE ACTIVITIES

STATEMENT OF DR. VICTOR REIS, ASSISTANT SECRETARY FOR DEFENSE PROGRAMS

ACCOMPANIED BY:

KENNETH BAKER, ACTING DIRECTOR, OFFICE OF NONPROLIFERATION AND NATIONAL SECURITY

HAROLD SMITH, ASSISTANT TO THE SECRETARY OF DEFENSE FOR NUCLEAR, CHEMICAL, AND BIOLOGICAL PROGRAMS

OPENING STATEMENT OF PETE V. DOMENICI

Senator DOMENICI. The hearing will please come to order.

Our ranking member, Senator Reid of Nevada, has indicated that he is going to be late, because the democratic members of the Senate are in a caucus. If he does not get here, and I am finished, we will hold the meeting open, so that he can inquire as he sees fit. But I believe he will be along within 30 minutes or so.

First, I want to welcome everyone to this hearing as we begin to review the Department of Energy's budget for fiscal year 1998.

Today, we will take up the atomic energy defense activity's portion of the DOE, which includes the stockpile stewardship and management programs, and other defense activities, such as nonproliferation and national security, arms control, and nuclear technology, research, and development.

FISCAL YEAR 1998 BUDGET PROGRAM

At the start, I want to sound a note of concern, because the budget request before the committee appears to be healthy. In fact, the fiscal year 1998 request is a better start than the 1997 request. But as you get into the details, below the gross totals, there appear to be continued erosion in core activities—the fundamental under-

pinning that is necessary to support the nuclear deterrent in the next century, both from a scientific and a manufacturing point of view.

Large increases are included for important projects, such as the national ignition facility, known as NIF, and the tritium production and processing facilities.

I also need to point out that function 050, the entire defense budget function, is severely constrained. The 1998 budget targets for 050, of which DOE gets a portion, increased around $5.0 billion over the 1997 level, and the DOE budget increased by $2.3 billion, alone.

Part of this is due to DOE's privatization proposal in the "Environmental management" account. We are going to have to evaluate that in detail, as we develop the 1998 budget.

In addition, the Congressional Budget Office has re-scored the outlays resulting from the fiscal year 1997 Energy and Water appropriations bill. They indicate that for the 050 function, it is $5.6 billion more than estimated by the OMB, which means if Congress uses the CBO estimates, and if we are going to stay within the targets of the President's, we have to reduce something rather significantly.

I say this only to highlight the major challenge that the subcommittee will have in formulating the recommendations for the defense activities for 1998. This is an area that the Budget Committee will be working on in an effort to address the defense needs in DOE and DOD.

But, essentially, in the final analysis, the allocation will be made by Senator Stevens and the Appropriations Committee from the larger 050 amount allocated to either defense or other domestic discretionary programs.

INTRODUCTION OF WITNESS

With that, let me welcome our witnesses, Dr. Vic Reis, who is Assistant Secretary of Energy for Defense Programs; Mr. Kenneth Baker, Acting Director of the Office of Nonproliferation and National Security, and Dr. Harold Smith, Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Programs.

It is a pleasure to have each of you here this morning and I commend you for your work. I want to particularly thank Dr. Reis for his special attention in the past few years to moving from the past era of nuclear deterrent to the new stockpile stewardship and management approach. We still have a long way to go to put into place the measures necessary to ensure the safety and reliability of the weapon stockpile.

It is a very risky undertaking, and very, very difficult, in terms of the science and the technology. But you started us in the right path, and you understand the issues very well.

We are going to hear from Dr. Reis, after which, we will hear the statements of Mr. Baker, and then you, Dr. Smith. Once the oral testimony has been completed, we will proceed with questions. I would ask that you try to limit your remarks, but this is our only occasion to hear from you. So, you have got to tell us the whole story.

Your full printed statements will be made a part of the record.

Please proceed, Dr. Reis.

STATEMENT OF VICTOR REIS

Dr. REIS. Thank you, Mr. Chairman. It is a pleasure to appear before you today to present the fiscal year 1998 Department of Energy defense programs' budget.

I will just hit a few highlights and submit my full testimony for the record, with your permission.

The defense programs' budget request for next year is some $5 billion, of which approximately $1 billion is in the "Defense asset acquisition" account, to fully fund construction projects.

Full funding of construction projects is a new approach for the Department of Energy, but is similar to that used by the Department of Defense.

On an apples-to-apples comparison with the fiscal year 1997 budget, this would correspond to a budget request of around $4 billion; an increase of $133 million over last year's appropriation.

DEFENSE PROGRAMS MISSION

Mr. Chairman, the mission of defense programs is to ensure the safety and reliability of the Nation's nuclear weapons indefinitely, without underground testing; to safely dismantle and store excess nuclear weapons; and to be prepared to resume testing and produce new nuclear weapons if the President and the Congress so direct.

This is an unprecedented job, and one that involves risk, but we are committed to do the job and manage the risk.

My task today is to demonstrate that the Stewardship and Management Program is working now, and will continue to work into the future.

STOCKPILE LIFE EXTENSION PROGRAM [SLEP]

The essence of stockpile stewardship and management is the Stockpile Life Extension Program. Weapons in the stockpile will age, and the performance of these weapons may deteriorate.

Weapon parts must be identified, replaced, and certified before any deterioration becomes unacceptable. For every part in every weapon now in the stockpile, the tools for assessment exist now, and are being used now, but they will not be sufficient in the future, as the time since the weapons' last underground test increases, and as experts who maintain the current weapons retire.

Therefore, the Stockpile Stewardship and Management Program must be dynamic. It must continually improve as the job gets more difficult.

NUCLEAR WEAPONS STOCKPILE ANNUAL CERTIFICATION

How do we know whether we are good enough now and are good enough in the future?

On August 11, 1995, when the President announced that the United States intended to seek a zero yield Comprehensive Test Ban Treaty [CTBT], he stipulated six conditions for ratification. The last condition directed an extensive annual certification process that requires independent assessments from the directors of the

nuclear weapons laboratories, the Commander in Chief of the U.S. Strategic Command, and the Nuclear Weapons Council.

We did not wait until the CTBT was signed to start this process, but began immediately. I am pleased to report to this committee that the first of these annual reviews has been completed.

A memorandum went to the President from Secretary Cohen and Acting Secretary Curtis, stating that the stockpile is judged safe and reliable, without nuclear testing.

With your permission, I would like to place that memo into the record.

Senator DOMENICI. It will be made a part of the record.

Dr. REIS. Thank you.

[The information follows:]

MEMORANDUM FOR THE PRESIDENT

Subject: Nuclear Stockpile Certification

In response to Presidential direction to conduct an annual certification of the nuclear weapons stockpile, we have thoroughly reviewed the stockpile and judge it to be safe and reliable. There is no need to conduct an underground nuclear test at this time. Problems that have arisen in the stockpile, for example as a result of aging components, are being addressed to assure the stockpile remains safe and reliable. These current problems can be resolved without nuclear testing. In reaching this conclusion, we have obtained the advice of the Directors of DOE's Nuclear Weapons Laboratories, the Commander-in-Chief, Strategic Command, the Chairman of the Joint Chiefs of Staff, and the Nuclear Weapons Council.

William S. Cohen, February 5, 1997,
Secretary of Defense.

Charles B. Curtis, February 7, 1997,
Acting Secretary of Energy.

Dr. REIS. This annual certification represents a snapshot in time. So, you might ask: What have we done this year to give you confidence that the program is accomplishing its mission to keep the stockpile healthy forever, without underground testing?

Are we, indeed, able to discover problems before they affect performance, replace parts and certify weapons?

Could we return to testing and production, if need be?

Are we dismantling weapons according to schedule?

There are a number of examples that provide us with some optimism and are included in my testimony, but I would like to mention just a few.

MODIFICATION OF THE B–61 STRATEGIC BOMB

The first of these is the modification of the B–61 strategic bomb. This modification changed the weapon so it could penetrate the surface of the target area, impacting the ground at over 1,000 times the force of gravity, yet not compromise its nuclear warhead.

We accomplished this on an accelerated schedule, completing analysis and testing within a 14-month period, with first modification units going to the Air Force last December.

When this modification program is complete, we will be able to retire the B–53, the oldest and largest weapon in the arsenal, and a weapon that lacks many of the modern safety features.

What was so encouraging about the B–61 modification is that it used many of the elements of the Stewardship and Management Program, from new computer simulation capability, through design at the Sandia and Los Alamos Laboratories, through the production at Kansas City and Y–12 plants, culminating in the successful testing in Alaska and at the Nevada test site. Not the least of this success was the extraordinary degree of teamwork with our Air Force customer.

ACCELERATED STRATEGIC COMPUTING INITIATIVE [ASCI]

The second example is simulation. Without new underground tests, the ability to certify places enormous stress on our ability to simulate and validate the processes occurring in nuclear explosions.

Last December, the Intel/Sandia team produced a computer that was the world's fastest, by a factor of three. More importantly, that computer is now solving stockpile problems that simply could not have been done heretofore in any practical amount of time.

For example, one complex simulation that would have taken 74 days to run, was completed in just 7 hours.

Both IBM with Livermore and Silicon Graphics/Cray with Los Alamos, have delivered installments of still faster machines, on which we are also making operational breakthroughs, as we seek to maintain the pace of the Stockpile Stewardship Program.

ADVANCED EXPERIMENTAL CAPABILITIES

There are equivalent examples in surveillance, manufacturing, and science-based understanding of aging. The dual axis radiographic hydrodynamic test facility machine at Los Alamos is back on schedule, and we look forward to construction of the national ignition facility [NIF] at Livermore.

When completed, the NIF will produce temperatures and pressures reached only inside an exploding nuclear weapon and the Sun.

Results from the Los Alamos' Pegasus and Sandia's PBFA–Z, the pulse power machines, also show remarkable promise as do the NOVA and Omega lasers which continue to generate spectacular results.

TRITIUM SUPPLY

Both the accelerator and commercial light water reactor tritium production tracks are on schedule for a fiscal year 1998 decision that will support a START I stockpile.

We have established a tritium reservoir production capability at Kansas City, producing some 90 tritium reservoirs there, and have filled over 1,000 tritium reservoirs at Savannah River.

MAJOR ACCOMPLISHMENTS

We dismantled 1,064 weapons at Pantex; completed both the stockpile stewardship and management programmatic environmental impact statement, which defines the streamlined complex of the future, and the Nevada test site environmental impact statement, which will permit us to begin crucial subcritical experiments.

A detailed plan, describing what we expect to accomplish over the next 5 years has been completed in coordination with our Department of Defense colleagues. We expect to submit it to you shortly.

CONCLUSION

Mr. Chairman, when President Clinton announced that this country would seek a zero yield Comprehensive Test Ban Treaty, he stated that the nuclear stockpile was of supreme national interest to the United States, and that the Stockpile Stewardship and Management Program was the means to ensure that that stockpile will remain viable.

Mr. Chairman, I believe that the program before you now is fulfilling that national imperative; and the people and the program are working now; and with your continued support, the people and the program will continue to succeed.

PREPARED STATEMENT

Again, thank you for your attention. And, of course, we will be happy to answer any questions.

Senator DOMENICI. Thank you very much, Dr. Reis.

[The statement follows:]

PREPARED STATEMENT OF VICTOR REIS

Although the threat of superpower nuclear confrontation has receded, the United States continues to face a broad spectrum of national security challenges. To meet these challenges, President Clinton has stated that: "The United States must and will retain strategic nuclear forces sufficient to deter any future hostile foreign leadership with access to strategic nuclear forces from acting against our vital interests and to convince it that seeking a nuclear advantage would be futile. In this regard, I consider the maintenance of a safe and reliable nuclear stockpile to be a supreme national interest of the United States."

Additionally, the United States Senate START II ratification text states that: "The United States is committed to proceeding with a robust Stockpile Stewardship program, and to maintain nuclear weapons production capabilities and capacities that will ensure the safety, reliability and performance of the U.S. nuclear arsenal at the START II level and meet requirements for hedging against possible international developments or technical problems in conformance with United States policies and to underpin deterrence."

The ability of the United States to respond effectively to the national security challenges of the 21st century will be determined by the decisions we make and actions we take now. The United States has: agreed to the indefinite extension of the Nuclear Non-Proliferation Treaty, ratified START II, and signed the zero-yield Comprehensive Test Ban Treaty (CTBT). Once ratified by the 44 nuclear capable states, any nuclear weapons test explosion or any other nuclear explosion will be banned. At the present time 41 of the 44 states have signed the Treaty.

Within this new strategic context the Department must continue to ensure the safety, security and reliability of the enduring stockpile, without nuclear testing. The Department will meet this national security challenge through the vigorous implementation of the integrated Stockpile Stewardship and Management program (SSMP), a scientific and technical challenge perhaps as formidable as the Manhattan Project.

The Department's objective is to implement a program that:

—Supports the U.S. nuclear deterrent with a safe, secure, and reliable nuclear weapons stockpile, without nuclear testing, as the weapons complex is reduced in size, modernized and made more efficient.

—Preserves the core intellectual and technical competencies of the weapons laboratories and the manufacturing facilities; and

—Ensures that activities needed to maintain the nation's nuclear deterrent are compatible with the nation's arms-control and nonproliferation commitments, including the CTBT.

The Department recognizes the inherent risk in a program to develop a surrogate for underground testing. It has been over four years since the last nuclear test. During that time, we have successfully addressed an issue with the Trident I (W76) warhead by using a combination of analysis, new experimental data, archived test and manufacturing data, and most importantly the collective judgement of the two weapon design laboratories. This success, using the experimental and testing tools available today, provides confidence that the even more powerful computing and testing tools to be developed will allow us to solve future stockpile problems without nuclear testing. However, in the event that testing should be required, the Department will maintain the capability to conduct underground nuclear tests as directed by the President and the Congress.

Last year the Administration committed to Congress that funding for Defense Programs activities would total approximately $4 billion per year for the next 10 years. The fiscal year 1998 request is $3.6 billion for Weapons Activities operations and maintenance account and $1.5 billion for the new Defense Asset Acquisition Account for a total of $5.1 billion in fiscal year 1998. Of this amount, about $4 billion would be obligated in fiscal year 1998 with the balance obligated in future years against ongoing construction projects. From 1998 through 2002, the President's budget requests $20.1 billion for Defense Programs activities.

The fiscal year 1998 request allows us to build upon significant accomplishments during fiscal year 1996 and fiscal year 1997. DOE's production plants at Pantex, Savannah River, Oak Ridge, and Kansas City continue to support the day-to-day needs of the enduring nuclear weapons stockpile by making the necessary repairs and providing replacement parts. The Pantex plant safely disassembled 1,064 nuclear weapons in fiscal year 1996. We recently demonstrated through delivery of the first B–61 Modification 11 kits that the DOE nuclear weapons complex remains capable of meeting DOD requirements. Working with the laboratories and plants, DOE delivered the first conversion kit in late December 1996, meeting the accelerated schedule requested by the DOD. The B–61 Mod 11 will replace the B–53, which is the oldest bomb in the stockpile and does not have modern safety features. The dual track tritium program continues to make progress on the regulatory, technical and policy activities associated with the program. A Memorandum of Understanding (MOU) between the Nuclear Regulatory Commission (NRC) and DOE governing the interactions between the two agencies was signed in May 1996. Recently the Department and the Tennessee Valley Authority (TVA) announced plans to conduct in-reactor tests of tritium target rods this fall in a TVA operating reactor. The Accelerator Production of Tritium (APT) program selected a prime contractor, Burns and Roe Enterprises, Inc., and began a technical analysis of the components that would be used in the APT. In addition, the Secretary of Energy announced that the Fast Flux Test Facility (FFTF) would remain on warm standby for possible use in producing tritium. The action is being funded by the Office of Nuclear Energy. The National Ignition Facility (NIF) program completed Title I design of the project and the Department selected the Lawrence Livermore National Laboratory as the site for construction. The Accelerated Strategic Computing Initiative (ASCI) program awarded two contracts for the next generation of super computers and accepted delivery of the world's fastest computer, capable of performing over one trillion operations per second.

The Department also completed a number of key environmental documents required by the National Environmental Policy Act (NEPA) including: the Stockpile Stewardship and Management Programmatic Environmental Impact Statement (PEIS); the Nevada Test Site Wide EIS; and the Pantex Site Wide EIS. With these documents complete, DOE can: begin construction of the new experimental facilities needed by the stockpile stewardship program; establish a plutonium pit production capability at Los Alamos; downsize the manufacturing complex while maintaining the necessary industrial capabilities to support the stockpile; conduct subcritical experiments at the Nevada Test Site; and continue to safely store plutonium pits from dismantled weapons at the Pantex plant.

The Department is in consultation with the DOD, revising and updating the Stockpile Stewardship and Management Program (SSMP) plan, which describes in detail our plans for maintaining the safety and reliability of the nuclear weapons stockpile in the absence of underground testing and no new-design nuclear warheads production. We will provide a copy of this classified plan, known as the "Green Book" to the Congress after the Nuclear Weapons Stockpile Plan is signed by the President. We will continue to work closely with the DOD to refine and implement this plan to meet fully the requirements of the President's Nuclear Weapons Stockpile Plan.

Annual Certification

A primary DOE responsibility is to annually certify the safety and reliability of the nation's nuclear stockpile. On August 11, 1995, the President announced that he would seek a zero yield CTBT. At that time he directed the Secretaries of Defense and Energy to advise him annually on the safety and reliability of the nuclear weapons stockpile, in order to determine whether the United States should continue to observe the CTBT or resume underground nuclear testing. The two Secretaries are to be advised by the Nuclear Weapons Council, the Commander of the U.S. Strategic Command, and the Directors of DOE's nuclear weapons laboratories on whether the stockpile is safe and reliable in the absence of nuclear testing.

All active and inactive weapon types have been assessed by the weapons design laboratories and the DOD-led joint Project Officers Group. The laboratory directors and the Commander of U.S. Strategic Command have provided their advice to the Secretaries of Energy and Defense. The first annual certification was signed on February 7, 1997, by both Secretaries certifying to the President that the stockpile is "safe and reliable" and that "there is no need to conduct an underground nuclear test at this time."

STOCKPILE MANAGEMENT ACTIVITIES

The Stockpile Management Program continues its historic responsibilities to provide near term and long term support for the stockpile, and for ensuring an adequate supply of tritium. It also includes new programs and procedures to deal with the aging stockpile, which has an average age of 14 years. Along with stockpile surveillance, the historic responsibilities include: normal maintenance; corrective maintenance and system refurbishment; and weapon dismantlement.

Almost 50 years of stockpile history have shown that continuous surveillance, repair, and replacement of components and subsystems are commonplace. In fact, the nine weapons types that will comprise the START II stockpile have already been retrofitted to varying degrees and some have had major components of the nuclear warhead replaced. At the present time, we cannot predict with any certainty when stockpile problems will arise in the future, but we are addressing these issues through our Stockpile Stewardship and Management Program. The Department is carrying out the recommendations of the 1996 GAO report on nuclear surveillance activities. At the requested funding level, our goal is to eliminate most backlogs in flight and laboratory tests within two years and all backlogs prior to the end of fiscal year 2000.

Role of the Production Plants

The production plants at Savannah River, Pantex, Kansas City, and Oak Ridge are essential components to the success of Stockpile Stewardship and Management. The Department's approach to maintain these key industrial facilities is detailed in the final PEIS on Stockpile Stewardship and Management and supported by the Secretary of Energy's Record of Decision issued on December 19, 1996. While ongoing production activities at the plants will help maintain production skills, to attract and retain the next generation of technicians DOE is establishing a fellowship program at the plants. The plants have been directed to identify prioritized needs for the fellowship program. Their responses are due by mid-April 1997. None of the funds will be obligated until the report required by section 3166 of the Fiscal Year 1997 Defense Authorization Act is provided to the Congress.

In fiscal year 1997 the four plants will continue to produce the replacement parts and make the necessary repairs to support the enduring nuclear weapons stockpile. One of the most significant accomplishments was the accelerated delivery of the conversion kits from the Kansas City and Oak Ridge Y–12 plants for the B61 modification 11 program. The B61 modification 11 satisfies the mission requirements of the B53 gravity bomb. The B53 is the oldest weapon in the stockpile and does not meet modern safety design criteria. All B53's will be retired shortly. DOE plans to begin dismantlement of this system by fiscal year 1999.

In fiscal year 1998 DOE expects to demonstrate a limited plutonium pit production capability at Los Alamos, a capability the DOE has not had since the closing of the Rocky Flats plant in 1992. In reestablishing war reserve support capability, DOE plans to manufacture a Trident II (W–88) pit in fiscal year 1998, a Peacekeeper (W–87) pit in fiscal year 2000 and a B61 bomb pit in fiscal year 2002. A larger pit production capacity will be in place by fiscal year 2003.

Although there will be downsizing of the production plants commensurate with the needs of a smaller stockpile, none of the plants will be closed. The Strategic Management Restructuring Initiative (SMRI) will support implementation of the Department's decision to downsize in place. The SMRI program involves downsizing

the following operations: (1) the weapons assembly/disassembly and high explosives missions at Pantex; (2) nonnuclear components production at Kansas City; (3) weapons secondary and case fabrication at Oak Ridge Y–12; and (4) consolidation of tritium operations at Savannah River. We will also reestablish pit component fabrication at Los Alamos. The DOE will make use of existing facilities at the sites which will be upgraded, repaired and or modified to meet current environment, safety and health requirements. DOE will, through section 3161 of the fiscal year 1993 National Defense Authorization Act, mitigate the impacts of downsizing on the affected workers and communities.

Enhanced Surveillance

Enhanced Surveillance is an integrated program involving the four production plants and the three weapons laboratories. In this program we will develop the predictive measures to address the maintenance needs of the stockpile. The basic goals of the program are: to predict in advance defects that might develop in the enduring stockpile due to aging or other reasons; develop a means to assess the safety and reliability impacts; and to ensure that problems are corrected before they reduce safety or reliability of the stockpile. The Enhanced Surveillance Program (ESP) builds upon existing Defense Programs' research and development activities, nonnuclear testing, nondestructive evaluation/surveillance activities and will develop new predictive models, new techniques for data analysis, and offers the possibility of in-situ, real time, non-destructive monitoring for warheads.

The ESP focuses on six major areas: (1) materials characterization and surveillance; (2) materials aging model development; (3) component surveillance and diagnostics; (4) component performance models; (5) enhanced systems testing; and (6) system performance models. The surveillance techniques, procedures, and models developed in this program will be incorporated into the ongoing core surveillance program when we are confident of their validity. With these new tools, our program of stockpile surveillance will emphasize prediction and preventive maintenance.

The ESP is a logical step between the traditional surveillance program and the anticipated weapons refurbishment requirements. It will be closely coordinated and integrated with the Stockpile Life Extension Program, the Accelerated Strategic Computing Initiative, and the Advanced Manufacturing Design and Production Technology programs.

Stockpile Life Extension Program (SLEP)

The mission of the SLEP is to ensure continued high confidence in the performance, safety and reliability of the nuclear weapons stockpile while exercising the infrastructure and intellectual capabilities needed to sustain the weapons as a credible deterrent. The SLEP is a new DOE maintenance management strategy that will continuously focus the design and manufacturing activities required to maintain all of the stockpile warheads in a safe and reliable condition. The SLEP establishes the activities needed to meet nuclear weapon stockpile commitments to DOD, and provides the basis for coordinating stockpile activities between DOE and DOD. It builds on and enhances past practices to maintain a viable nuclear weapons stockpile. Detailed schedules for each weapon are being developed through weapon-specific DOD/DOE Project Officer Groups.

The underpinning concept for the SLEP is "all components of a nuclear weapon are limited life components." The SLEP focuses and prioritizes the efforts of the weapons complex. The Enhanced Surveillance program will provide data to better understand material and component aging phenomena and determine the Life-limit of components and materials. This in turn provides the needed information to determine a life extension program and sustain a safe, reliable stockpile to meet DOD performance requirements.

The SLEP integrates stockpile management activities and establishes requirements and priorities to support budget and workload planning. These activities to support the stockpile are embodied in four key functions: maintenance, surveillance, assessment and certification, and refurbishment. The underpinning activities for these functions rely on science and modeling based capabilities and our ability to manufacture a reliable product.

Advanced Manufacturing, Design and Production Technology (ADaPT)

The Advanced Manufacturing, Design and Production Technologies Initiative will provide the nuclear weapons complex with advanced capabilities for: designing, developing, and certifying components and systems; and producing, assembling, and delivering the components and systems products. Over the next decade ADaPT will radically change how DOE supports the nuclear weapons stockpile by infusing new product and process technologies, and adopting state-of-the-art business and engineering practices. The funding from this program to the plants and laboratories ad-

dresses enterprise modeling, product realization, and model-based design and manufacturing. An example of the work done under this program is the development of a laser-cutting workstation for application to weapon remanufacturing. In fiscal year 1997, the ADaPT program will be integrated with existing efforts in Process Development at the production plants, and will be continued at essentially the same level of effort in fiscal year 1998.

Dual Revalidation

Dual Revalidation is a new, robust form of peer review designed to assure both DOE and DOD that the stockpile remains safe, secure, and reliable. Under Dual Revalidation, two teams perform independent evaluations, the first team drawn from the original design laboratory and the second team from the alternate laboratory. Using archived data and performing nonnuclear tests, teams will analyze and evaluate stockpiled weapons, weapons components, and weapons materials to determine if they still meet military requirements. Dual Revalidation provides a baseline assessment of the condition of the warhead today and a process to identify future problems. The evaluation is managed by the joint DOD/DOE Project Officers Group and is expected to take 2–3 years for each warhead type. The W–76 is the first warhead currently undergoing revalidation. The increased involvement in and technical understanding of the assessment process by the DOD will provide a basis for their confidence in the stockpile, which was previously supplied by nuclear testing. This new process will revalidate that the stockpile meets its specifications delineated in the Military Characteristics (MCs) and Stockpile-to-Target Sequence (STS).

Tritium

An integral part of ensuring a viable stockpile is the capability to provide an adequate supply of tritium, a radioactive gas required for all U.S. nuclear weapons to operate as designed. Tritium, with a half life of 12.3 years, decays at a rate of 5.5 percent per annum. To meet current stockpile requirements, the Department is recycling tritium from retired and dismantled weapons. To support the Nuclear Weapons Stockpile Plan (NWSP) approved by the President on March 11, 1996, a new tritium production source will be needed as early as 2005 to maintain the START I stockpile and the associated 5-year tritium reserve, and to maintain the ability to "hedge" to START I even when the START II treaty enters into force.

The Department continues to make progress on a dual track tritium strategy for developing a reliable source of tritium to meet national security requirements. One track includes the purchase of a commercial reactor or irradiation services. The other track requires the development and testing of an accelerator for the production of tritium. In addition, the FFTF is being kept on warm standby for possible contribution to meeting tritium needs. The funds for this action is provided by the Office of Nuclear Energy. By late 1998 the Department will have demonstrated all major aspects of the accelerator technology and the use of tritium producing rods in a commercial light water reactor. The procurement process will be structured so that a contract could be placed to either purchase irradiation services or purchase or lease a reactor. Based on these activities, DOE will have refined the cost estimates for both programs. By the end of 1998, the Department, in consultation with the DOD and OMB, will select one of these alternatives as the primary tritium production method. The other, will comprise an assured backup capability. In an attempt to meet congressional concerns about tritium supply, Secretary Peña has promised to review the dual track time line. If the decision cannot be accelerated to 1997, DOE will notify Congress consistent with section 3133 of the fiscal year 1997 National Defense Authorization Act. The dual track approach has the support of the Nuclear Weapons Council.

There are no serious technical issues associated with the production of tritium in a light water reactor, but there are regulatory and licensing steps to be taken. The Department and the Nuclear Regulatory Commission (NRC) signed a Memorandum of Understanding last May governing the interaction between the two agencies for target qualification and NRC reactor licensing activities. On February 7, 1997, the DOE announced that the TVA Watts Bar Nuclear Plant 1 was selected as the host utility for the Lead Test Assembly. The Watts Bar test involves placement of 32 specially designed twelve-foot "target" rods into four of the nearly two hundred regular fuel assemblies in the plant's reactor core. These targets, which contain no uranium or plutonium, are designed to replace a standard component of reactor fuel assemblies. During the plant's normal 18-month operating cycle, the rods will produce and retain small amounts of tritium. Following the test, the rods will be shipped by DOE carrier to the Pacific Northwest National Laboratory for disassembly and examination.

Previously, DOE has tested smaller rod segments in one of its test reactors with excellent results. The Watts Bar test is intended to confirm those results using rods of the same length as those now typically used in commercial reactors. Additional target qualification studies are needed to support regulatory and owner approval for their use in commercial reactors.

The Department has issued a Draft Request for Proposals (RFP) for the purchase of one or more commercial light water reactors or irradiation services. A final RFP is scheduled for release in April with utility responses due in June. The DOE expects to make a preliminary selection of one or more utilities early in 1998.

With regard to the accelerator alternative, there are several features and portions of the technology that need to be demonstrated at production power levels and the cost of design, construction and operations needs to be refined. The exploration of the accelerator concept includes: a development effort to select between technical alternatives; testing to establish performance and reliability; the use of industry for conceptual and engineering design and, if built, construction and commissioning. These efforts will narrow the design, cost and schedule uncertainties.

Last year the Department selected a prime contractor, Burns and Roe Enterprises Inc., teamed with General Atomics to add to the Los Alamos and Savannah River team. Los Alamos has completed the construction of the first test items for the accelerator and others are being manufactured. The first of the accelerator components, an injector, is being tested and exceeding performance specifications. Thousands of samples of materials, welds, and structures have been or are being irradiated to confirm choices and projections of performance for materials for the so-called "target-blanket" the part of the plant in which the tritium would actually be made. First results of these tests are currently being analyzed. The design of the accelerator has been favorably reviewed by two external review groups. The combined team has produced a Draft Conceptual Design report and an associated cost estimate, which is under intense review by the prime contractor and the Department. The Department is on track for issuing a final Conceptual Design Report in April of this year. We have made excellent progress on the schedule, and with the increased funding in fiscal year 1996 and fiscal year 1997 provided by the Congress. We have been able to advance some of the technology demonstrations, which are key to proving the concept and making an informed decision in late 1998.

Transportation of Special Nuclear Materials

The transportation of special nuclear materials remains an important element of stockpile management as a result of weapons dismantlement and the restructuring and consolidation of military bases in the United States. The Department provides for the transportation of special nuclear materials, nuclear weapons, and weapons components throughout the continental United States via specially designed safe, secure tractors and trailers (SST's).

The Department has accumulated more than 83 million miles of over-the-road experience with no accidents causing a fatality or release of radioactive materials, and without damage or compromise of the cargo. Much of this can be attributed to the well managed, highly trained, competent, and dedicated work force of more than 260 couriers with nationwide secure communications. In addition, largely due to our specialized in-house training capability, the nuclear material couriers are one of the most highly effective protective forces in the world. Seventeen new trailers called Safe Guard Transporters (SGT), incorporating the latest advances in materials and transportation technology, are currently being built at the Kansas City Plant.

Dismantlement

Since the end of World War II, the Department and its predecessors have disassembled some 55,000 nuclear warheads in a safe, secure, and an efficient manner. In fiscal year 1996, 1,064 weapons were dismantled at the Pantex Plant. We expect to dismantle the 944 nuclear weapons in fiscal year 1997 and 1,200 weapons in fiscal year 1998. The Pantex dismantlement workload is expected to remain stable for the next few years as we reduce the nuclear stockpile consistent with our arms control commitments.

Emergency Response

The Emergency Response program is a national capability that provides critical technical expertise necessary to resolve any major radiological emergency or nuclear accident within the United States and abroad. The all-volunteer force that makes up the cadre of deployment forces is mostly from the nuclear weapons laboratories.

While a nuclear weapon accident is extremely unlikely, we are prepared to effectively mitigate the consequences of an accident. We are in the final planning stages for a full field training exercise scheduled for late May, where, for the first time ever, the DOE will exercise its responsibilities as the lead federal agency in provid-

ing command and control as well as the necessary technical expertise to resolve the accident.

The Department plays a vitally important support role in combating acts of nuclear terrorism, through its Nuclear Emergency Search Team (NEST). NEST provides the FBI with the operational and technical assistance in response to a terrorist nuclear or radiological dispersal threat in the United States, and supports the State Department in a similar role overseas. We have vigorously pursued updating this program based on the available intelligence to counter the current nuclear threat and trends in these activities. Our present and near term activities include continuance of in-depth contingency planning, rigorous training, a challenging interagency exercise program, and pursuit of much needed improvements in the areas of nuclear search, diagnostics, device assessment, and disablement capabilities.

STOCKPILE STEWARDSHIP

The Stockpile Stewardship program addresses the issue of maintaining confidence in stockpile safety and reliability without nuclear testing through a technically challenging science-based program utilizing upgraded or new experimental and computational capabilities. The program continues major initiatives in high energy density research with lasers and accelerated research and development in advanced computations to acquire and use data to improve predictive capabilities—the foundation of the science-based approach. Major new experimental facilities are planned to expand and enhance the scientific and engineering base for stockpile stewardship, and to assure that we can continue to attract and retain the high quality personnel needed to make the scientific and technical judgements related to the safety and reliability of the stockpile in the absence of underground nuclear testing.

The highly qualified laboratory staffs continue to make valuable contributions to solving scientific problems using knowledge and technologies from the weapons programs. One example is a program called Peregrine. Based on the computer codes developed by the weapons labs to show how radiation affects materials, Peregrine promises to provide the medical community with a more efficient and effective method of administering radiation therapy to cancer patients. Research is conducted in collaboration with Stanford University, Memorial Sloan-Kettering Cancer Center, Harper Hospital (Detroit) and other cancer research centers. Peregrine with its enhanced modeling and computing capability is expected to provide more precise and successful treatment of complicated tumors around eyes, sinuses, neck, mouth and in and around the lungs. We are discussing with the DOD the possibility of providing this technique to cancer patients in military hospitals. Peregrine will continue to benefit from computing advances made by the ASCI program.

Advanced Experimental Capabilities

The proposed National Ignition Facility (NIF) is designed to produce, for the first time in a laboratory setting, conditions of temperature and density of matter close to those that occur in the detonation of nuclear weapons. The ability to study the behavior of matter and the transfer of energy and radiation under these conditions is key to understanding the basic physics of nuclear weapons and predicting their performance without underground nuclear testing. Experiments at the NIF will provide data essential to test the validity of computer based predictions and demonstrate how aged or changed materials in weapons could behave under these unique conditions. Two JASON panels, which are comprised of scientific and technical national security experts, have stated that the NIF is the most scientifically valuable of all programs proposed for science-based stockpile stewardship.

The NIF project currently has about 300 persons involved in design and project-specific research and development. Title I design work for the facility is now complete. During the Title I process the design was refined for the Lawrence Livermore site with additional experimental capabilities added. This has increased the total project costs by $125.3 million. NIF will now be constructed so that the first bundle of eight lasers will be available for experiments two years before the project is complete. The project will begin site preparation work in fiscal year 1997 which will allow major construction to begin in fiscal year 1998 and project completion by the third quarter of fiscal year 2003.

The fiscal year 1998 budget request includes $31 million in operations and maintenance funds for NIF. These funds will enable industry to produce components (optics) for NIF. The fiscal year 1998 budget also requests $876 million, full funding for NIF construction under the Defense Asset Acquisition Account, though the planned obligations during fiscal year 1998 will only be $198 million. The balance of the funds will be obligated annually throughout the construction period until project completion in fiscal year 2003.

Current hydrodynamic testing facilities, the Pulsed High Explosive Radiographic Machine Emitting X-rays (PHERMEX) at the Los Alamos National Laboratory (LANL) and the Flash X-Ray facility (FXR) at Lawrence Livermore National Laboratory (LLNL), were adequate to meet the challenges of stockpile stewardship in conjunction with nuclear testing. In the absence of nuclear testing, however, more capable hydrodynamic testing facilities such as the Dual Axis Radiographic Hydrodynamic Test (DARHT) Facility are needed. Through its dual-axis, multi-time viewing capability, the DARHT facility will provide crucial experimental data on many of the warheads in the stockpile and will directly support performance and safety revalidation, enhanced surveillance, and an improved predictive capability. Furthermore as the most capable hydrodynamic testing facility in the complex, the DARHT facility will play a central role in developing advanced technologies for a potential next-generation Advanced Hydrodynamics Test Facility. Construction on DARHT was resumed last May following dissolution of the federal court injunction which had halted all actions associated with the facility. The fiscal year 1998 request for DARHT totals $46 million: $22 million to complete construction of the first arm of the facility and the balance to complete the engineering and design of the second arm.

The Atlas facility, to be constructed at Los Alamos National Laboratory, is another new experimental facility needed by the stockpile stewardship program. The facility provides a pulsed power experimental capability to address primary and secondary weapons physics in an energy rich, high energy density environment. Construction of Atlas is scheduled to begin later this year. The fiscal year 1998 budget includes $14 million. The funds will be used to continue long lead procurement, complete building modifications, and to install Atlas pulsed power equipment.

The Los Alamos Neutron Science Center (LANSCE), while not a new facility, is the most powerful neutron research facility in the world, providing an intense source of pulsed neutrons for experiments supporting national security and civilian research. Neutrons are unique and valuable probes of matter on scales ranging from the subatomic to complex materials. At low energies, neutrons are used to study many critical weapons materials issues. At higher energies, neutrons probe the small-scale structure of atomic nuclei, which is important for studies of nuclear weapons processes. At the very highest energies, neutrons can penetrate very thick materials providing unique surveillance capabilities. This capability will be important in supporting the enduring stockpile and anticipating rather than reacting to problems in the stockpile.

Accelerated Strategic Computing Initiative (ASCI) Computations and Information Management.

The Accelerated Strategic Computing Initiative (ASCI) and Stockpile Computing is a key element of the SSMP that will provide the critical advanced simulation tools needed for ongoing and future certification and assessment of the safety and reliability of the weapons in the stockpile. These tools will support weapons designers and analysts who will use them to certify and assess the safety and reliability of the nuclear weapons. The future role of simulation has already been demonstrated in the assessment of the W76 issue.

Aging issues drive the size of the simulation capabilities required. During the design phase for the weapons in today's stockpile, limitations in simulation and computing were overcome by keeping the designs consistent in 2 dimensions and through the extensive use of underground testing. We already know that the aging issues we will encounter will not be so accommodating. Cracks, gaps and material degradation are 3D effects which will require significantly more simulation capabilities that previously existed. A simple calculation of the computing power needed to support 3D, additional resolution, more complete physics simulation shows that a computer running at well over 100 trillion floating points operations per second (TeraFLOPS) is required.

In addition, this level of simulation capability will be required in the 2004 time frame to allow "test-based" weapons analysts to validate that the simulations accurately reflect the "real world". The 2004 time frame is critical because that is when we will have lost half of the current "test-based" designer and analyst capability. These designers and analysts are considered "master craftsmen and women" who have earned that status by learning and understanding scientific issues associated with nuclear weapons and then checking themselves with an extensive program of underground tests. They are "masters" at using a tool set (which included underground testing) to certify weapons and assess safety and reliability issues. With the loss of underground testing, these "masters" are now required to continue to do their jobs of certification and assessment with a new tool set, in which a major component will be large scale, complex simulations. It is critical that this group of de-

signers and analysts validate that the new simulation tools allow them to continue to have confidence in the weapons even in the absence of underground testing.

While the simulation capabilities provided by ASCI in the near-term will significantly improve our ability to certify and assess weapons without testing, at least 100 TeraFLOPS are required before full system performance and safety simulation are possible. This level is a critical threshold needed for validation. The simulation capabilities in excess of 100 TeraFLOPS are required before the simulation tools are robust enough to be meaningful, and these "robust" tools must be available by 2004 so that the Department can make a smooth transition away from "test-based" certification and assessment. The Accelerated Strategic Computing Initiative (ASCI) is designed to provide this level of simulation capabilities in the time frame required.

With the increased funding provided by the Congress in fiscal year 1997, we are initiating work on at least 3 additional aging codes focussed on critical weapon initiation sequences, expanding joint work with the computer industry to fund large scalable memory capability on Option Red (1 TeraFLOPS) and Option Blue (3 TeraFLOPS) computers, and by increasing alliances with universities. The fiscal year 1998 program growth of $53.2 million will be used to sustain this momentum by executing activities in the current program plan, including critical performance and safety code development activities and pushing the capabilities of computer hardware.

We also have seen some significant achievements in simulation in fiscal year 1997. This year has seen the delivery of the largest computer in the world to support Stockpile Stewardship. On December 4, 1996 the Intel Corporation broke the long standing 1 TeraFLOPS barrier. This and the follow-on computers are intended to move the simulation capabilities to the 100 TeraFLOPS level by 2004. ASCI code development has also shown a great deal of promise. Even though ASCI is only one and one half years old, the eleven code projects have made significant progress moving the simulations from 2D to 3D and on to parallel computers. This has lead to a better understanding of the challenges involved with simulation of aging and remanufactured weapons.

The ASCI simulation capabilities will link the experimental data from the Aboveground Experimental facilities (AGEX), archival nuclear test data, and improved scientific understanding to provide high-confidence predictive simulation capabilities needed to support decisions about the enduring stockpile. ASCI and Core Computations and Modeling supports another element of SSMP, the Stockpile Life Extension Program (SLEP), by providing simulation capabilities needed to predict requirements for replacement of aged components and to ensure that those replacements do not introduce new problems into the stockpile. Finally, ASCI complements and accelerates the ongoing efforts of the Defense Programs core research program for advances in physics, material sciences, and computational modeling. ASCI's computational advances will benefit other applications including: global climate modeling, medical and drug design each improving the quality of life.

Core Computations and Modeling are the activities, principally at the three weapons laboratories, that address current stockpile operational and maintenance requirements. We will provide clear, effective and integrated planning to incorporate the new capabilities developed through ASCI into the central stockpile computing environment. As the Stockpile Stewardship PEIS and the Stewardship Management Plan are implemented, we will develop a Defense Programs Information Architecture to meet current and future needs. This architecture will be integrated with the DOE, DOD and other information systems.

Test Readiness

President Clinton established a set of Safeguards under which U.S. adherence to the Comprehensive Test Ban Treaty is conditioned. These safeguards include maintenance of the basic capability to resume nuclear testing activities should the United States deem it necessary. To this end, the Department maintains the necessary infrastructure of the Nevada Test Site and the specialized facilities, equipment and skilled personnel required for nuclear testing. The Department has requested $157 million in fiscal year 1998 to maintain test readiness. The safe execution of a nuclear test requires a complex series of operations that exercise several areas of expertise including: nuclear explosive design and fabrication; diagnostic instrument design; emplacement and calibration; radioactive material containment; timing and firing, data recording, etc. Certification of the personnel and equipment to accomplish these operations will be assured by a number of ongoing and planned experimental activities utilizing both the Nevada Test Site and weapon laboratory facilities. The majority of these nuclear test-related operations, however, will be exercised through the Department's subcritical experiments at the NTS.

Subcritical experiments use high explosives to evaluate nuclear weapon materials (such as plutonium) by studying their behavior under extreme pressure conditions. The experiments are designed so the nuclear material will remain subcritical. In other words, there will be no self-sustaining nuclear chain reaction created and, thus, they are consistent with the Comprehensive Test Ban Treaty (CTBT). These experiments will provide currently scarce empirical data on the high pressure behavior of weapon materials, realistic benchmark data on the dynamic, nonnuclear behavior of components of today's stockpile, the effects of remanufacturing techniques, the effects of aging materials, and other technical issues. Improving our basic knowledge of the science of plutonium through these experiments is an essential part of our program of stockpile stewardship without nuclear testing. The Department is planning to conduct two of these subcritical experiments in fiscal year 1997 and expects to conduct four experiments in fiscal year 1998.

In the interest of transparency and building public confidence, the Department requested the JASON's to review the first two planned subcritical experiments and the results of the Department's internal evaluations of their potential for criticality. The JASON's have completed their review and stated that: "These particular experiments will add valuable scientific information to our data base relevant to the performance of our nuclear weapons, and that there is no conceivable scenario in which these experiments lead to criticality. Therefore these experiments are consistent with the provisions of the CTBT signed by President Clinton on September 24, 1996."

Technology Transfer

The technology transfer program is designed to advance a broad range of critical weapons core competencies by leveraging the vast resources of the private sector, to cost share the development of the best, most efficient, and affordable technologies needed to meet the objectives of the Stockpile Stewardship and Management program. The majority of the activities are partnership called Cooperative Research and Development Agreements (CRADA's) which have been selected on the basis of their contribution to the advanced technology needs of the weapons complex. These technology partnerships are supportive of a number of Defense Programs Initiatives including the ADaPT and ASCI.

In fiscal year 1997 Congress provided an additional $10 million for Technology Transfer activities with direction to increase efforts in support of the American Textile Partnerships (AMTEX) and the Advanced Computational Technology Initiative (ACTI) partnerships. We also plan to support AMTEX at $10 million and ACTI at $5 million in fiscal year 1997. We plan to support the Partnership for a New Generation of Vehicles (PNGV) program at approximately $10 million through the use of prior year balances and Weapons Support Agreements. The fiscal year 1998 budget continues these activities at the following levels: AMTEX—$5.5 million, ACTI—$12 million and PNGV—$7.5 million.

FISCAL YEAR 1998 BUDGET SUMMARY

The Defense Programs request for fiscal year 1998 totals $5.1 billion, of which $3.6 billion is for Weapons Activities operation and maintenance account ($1.4 billion for stockpile stewardship, $1.8 billion for stockpile management and $303 million for Program Direction). The Defense Programs is also requesting $1.5 billion for the Defense Asset Acquisition account, including $1,034.2 million for the transition to full construction funding. Overall, the Defense Programs request represents an increase of $1.2 billion above the fiscal year 1997 appropriation. The increase is entirely for construction of new facilities and is primarily due to the inclusion of full funding in the fiscal year 1998 request. Without the required budget authority to fully fund construction projects, the fiscal year 1998 funding level would be $4.0 billion, a 3.4 percent increase over the fiscal year 1997 appropriation.

Beginning in fiscal year 1998, Defense Programs will be funded from two appropriation accounts: (1) Weapons Activities Operations and Maintenance; and (2) the Defense Asset Acquisition. This change is consistent with the Administration's creation of Defense Asset Acquisition accounts across DOE to improve Department-wide planning and decision making for asset acquisition. This new account provides obligational authority for expenditures on all current year construction projects, as well as providing "up front" budget authority for new projects. This approach will promote more effective project planning, budgeting, and management by helping to ensure that all costs and benefits are evaluated when decisions are being made about providing resources. In fiscal year 1998, the transition year, budget authority is requested to complete all ongoing projects begun in prior years. The transition to up front budget authority does not affect the annual obligations profile or anticipated outlays.

120 DAY STUDY

Section 3140 of the Fiscal Year 1997 National Defense Authorization Act and Section 302 of the Fiscal Year 1997 Energy and Water Development Appropriation Act requires the Secretary of Energy to develop a plan to reorganize the field activities and management of the Defense Programs activities. DOE's report must identify all significant functions performed at operations and area offices and make recommendations as to where those functions should be performed.

The Department contracted with the Institute for Defense Analyses (IDA) to take a fresh look at the management structure of Defense Programs, to establish a baseline of functions and responsibilities and where they are performed, and to develop realignment options for DOE to consider in developing a reorganization plan.

IDA has completed their study and is preparing their final report. The Department is reviewing IDA's draft report and will prepare a report to Congress which will recommend specific organizational changes.

CONCLUSION

The United States faces a broad array of national security challenges as we enter the 21st century. The Department of Energy is committed to using all of its unique and valuable people, plants and laboratories to address the many challenges that will arise. We view stockpile stewardship and stockpile management as a single, integrated program. The critical capabilities and competencies of both the weapons laboratories and production plants must be maintained in the national security interest. The Department will work with the Congress to ensure that a complete and integrated set of capabilities and appropriate manufacturing capacity is maintained. Through a strong Stockpile Stewardship and Management Program the DOE will be a strong partner with the DOD in maintaining our country's nuclear deterrent.

STATEMENT OF KENNETH BAKER

Senator DOMENICI. We are going to proceed, as I indicated to the statements of two other witnesses. Mr. Baker, you may proceed.

Mr. BAKER. Good morning, Mr. Chairman. It is a pleasure to address you today as the Acting Director of the Office of Nonproliferation and National Security at the Department of Energy.

I have a brief statement and request my formal statement be submitted for the record.

The worldwide proliferation of weapons of mass destruction, or WMD, and their delivery systems, has emerged as one of the most serious dangers confronting the United States. In November 1994, and every year since, President Clinton declared such proliferation as a national emergency that must be addressed as one of the U.S. Government's highest priorities.

I would like to report that we have been and will continue to work at a rapid pace to confront this critical national security issue.

Today, I will discuss some of the key programs and the progress we have made, as well as new initiatives.

OUR SUCCESSES AND PLANNED ACTIVITIES

Our commitment to serving our Nation's security involves preventing the spread of WMD materials, technology and expertise; detecting the proliferation of WMD worldwide; reversing the proliferation of nuclear weapons capabilities; and responding to emergencies.

We particularly draw upon 50 years of science and technology expertise resident throughout the DOE National Laboratory complex to help us to achieve these goals.

MATERIAL PROTECTION, CONTROL, AND ACCOUNTING [MPC&A]

Our program of cooperation between DOE laboratories and the nuclear facilities in Russia and the New Independent States to improve protection, control, and accounting of weapons-usable nuclear materials is yielding dramatic results.

When I testified 2 years ago, I was able to show you security upgrades at one facility in Russia. Today, I am happy to say that the program has expanded to over 40 facilities in the Soviet Union, where cooperation is now underway to improve security for hundreds of tons of weapons-usable materials.

As you can see from the map of the former Soviet Union, sir—and I have a book for you that I will pass out along with the map—we are working in five different sectors: Ministry of atomic energy civilian complex, MINATOM; MINATOM's defense complex; the independent civilian sector; the non-Russian New Independent States sector; and the naval nuclear fuel sector.

Our work in 1997 will address all known facilities in the former Soviet Union that contain weapons-usable nuclear material. Through this critical program, we are working to improve security for approximately 1,200 metric tons of highly enriched uranium, and 200 metric tons of plutonium in the former Soviet Union.

We are also working with the Russian Navy and the icebreaker fleets to protect fresh navy reactor fuel, which could also be used in nuclear weapons.

Our work in 1998 will accelerate our ongoing efforts and expand to address broader Russian naval fuel protection and improve the protection, control, and accounting of Russian nuclear materials during transport.

By the end of fiscal year 1998, we expect to have completed MPC&A work at 25 facilities.

Senator DOMENICI. What does that mean? How does that work?

Mr. BAKER. DOE is working at over 40 facilities right now and 25 of them will be completely done, finished by the end of fiscal year 1998.

Senator DOMENICI. And that means, what?

Mr. BAKER. That means we can turn them back over to the Russians to monitor. We have all of the equipment in. And the facilities meet our standards, as far as security goes.

Senator DOMENICI. So, that means, we do not have this potential that we have—had 3 or 4 years ago, of these special nuclear materials floating around——

Mr. BAKER. Yes, sir.

Senator DOMENICI [continuing]. Being undetected, uninventoried, nobody knows where it is, and the likes.

Mr. BAKER. Yes, sir.

Senator DOMENICI. That is what we are talking about.

Mr. BAKER. Yes; this means completing step No. 1—protecting material at its source.

Senator DOMENICI. Please proceed.

Mr. BAKER. Some of my staff have just returned from Obninsk, Russia, after having participated in the first Russian International Conference on Nuclear Material Control and Accounting.

This historic conference, last week, was extremely successful, drawing participation from over 250 Russians from nearly all the Russian facilities in Russia, as well as other representative countries.

At this conference, Russian Minister of Atomic Energy, Victor Mikhaylov, expressed his commitment to modernizing safeguards and security for the Russian nuclear materials, noting that Russia is financing a substantial amount on the MPC&A upgrades in Russia.

It is clear, not only from the extensive support from the conference by the Russian Government, but also by the high quality discussion at the conference that there is serious dedication to the improvement of nuclear materials safeguards and security in Russia.

This new, developing safeguards culture is important evidence of the success of the Department of Energy's program of MPC&A and its improvements.

Senator DOMENICI. And it is also a tribute to the laboratories who are doing the work for you.

Mr. BAKER. Yes, sir; the laboratories are doing the work, and the entire government, really.

INITIATIVES FOR PROLIFERATION PREVENTION [IPP]

Similar to the MPC&A program and just as successful, is the Initiatives for Proliferation Prevention Program, or IPP, that seeks to draw scientists, engineers, and technicians from the former Soviet Union's nuclear, chemical, and biological weapons programs into long-term commercial ventures, thereby working to reduce the potential for brain drain to proliferant states or organizations.

These commercial ventures have engaged over 2,700 former weapons scientists in cooperative projects that involve 10 DOE National Laboratories, and a coalition of over 75 U.S. corporations and universities, and over 70 weapon institutes in the former Soviet Union.

We project these numbers will increase tremendously through 1998.

In 1995, sir, we had engaged 2,200 scientists. By the end of 1998, we expect to engaged 5,100 scientists.

Senator DOMENICI. Tell me that again.

Mr. BAKER. In 1995, in this IPP program, we had 2,200 scientists at work. At the end of 1998, we expect 5,100 Russian scientists will be employed in other things besides building nuclear weapons.

Senator DOMENICI. Does that mean that they probably are going to be paid salaries, and——

Mr. BAKER. Yes, sir.

Senator DOMENICI. From what you know.

Mr. Baker. Yes, sir; they are going to be paid.

Senator DOMENICI. That sounds like a funny question, but it is a pretty serious question.

Mr. BAKER. Yes, sir; and they are going to be paid.

We also have 75 U.S. corporations involved in this program. By the end of 1998, we expect to have 100 U.S. corporations.

In 1995, we had 75 institutes. And at the end of 1998, we expect it to be 120. Again, a very successful program.

OTHER KEY PROGRAMS

My office plays a key role in supporting the U.S. efforts to monitor and verify a Comprehensive Test Ban Treaty. We are developing technologies that will detect nuclear explosions underground, underwater, or in the atmosphere.

If such an explosion does occur, these technologies can detect, locate, and identify its source.

This summer, the Air Force will be launching, for us, our FORTE small satellite, which will demonstrate improved ability to detect and characterize the electromagnetic pulses from nuclear explosions in the atmosphere, an important aspect of our treaty monitoring capability.

CHEMICAL AND BIOLOGICAL NONPROLIFERATION PROGRAM

This year, we began a new Chemical and Biological Nonproliferation Program that seeks to leverage the chemical and biological science capabilities of the national laboratories and to develop technologies to detect, characterize, and facilitate decontamination of chemical and biological threat agents. In 1998, we plan to expand our emergency management and response capabilities to effectively respond to chemical and biological incidents.

Our program to counter nuclear smuggling is part of a partnership with other Federal agencies that overlays barriers to illegal diversion of fissile and radiological materials at its source; detection and interdiction of materials during transit and at international borders; and response to threatened or actual use of these materials. We have just completed work on an overall program plan for nuclear smuggling that I will pass out to your staff, sir. This will direct a rigorous nuclear safeguards and security program for the Department to counter nuclear smuggling.

In fiscal year 1997, we have demonstrated the ability of the national laboratories to determine the source of smuggled nuclear materials through nuclear forensic techniques.

In 1998, we plan to provide customized versions of the equipment now used at DOE facilities to improve security at U.S. borders and we expect to develop highly portable and inexpensive radiation detection technology for city and State law enforcement and other emergency personnel.

Finally, our intelligence program continues to focus the DOE's laboratory experience in nuclear weapons design and production to improve nuclear weapon foreign intelligence information and technical analyses on the emerging national security issues of today.

In concert with this extensive international program, we are responsible for a wide range of activities to accomplish nonproliferation and national security goals in the United States.

These activities include: directing a nuclear safeguards and security program for the entire Department of Energy complex; thereby, ensuring that our own facilities are secure, and that our own nuclear materials, technology, and expertise are protected; declassifying millions of departmental documents while protecting critical national security information; maintaining a security investigations program for both Federal and contractor employees of the Department; and managing and strengthening the Department's emer-

gency management and response capability, and providing assistance to other Government agencies, as well as State, tribal, and local governments.

Our budget request for fiscal year 1998 generally reflects an increase in nonproliferation activities with the Soviet Union in the MPC&A program, increasing the chemical and biological weapons nonproliferation and counter nuclear smuggling initiatives, and supporting our program staffing requirements.

CONCLUSION

Preventing the spread of weapons of mass destruction is a critical national interest and a global security issue. We are proud to be one of the leaders working aggressively with Congress and other agencies of the U.S. Government and in the international community to make the world a safer place for all.

PREPARED STATEMENT

Thank you for your time. I will be happy to answer any questions that you may have, sir.

[The statement follows:]

PREPARED STATEMENT OF KENNETH E. BAKER

Good morning Mr. Chairman and members of the subcommittee. It is my pleasure to address you today as the Acting Director of the Office of Nonproliferation and National Security at the U.S. Department of Energy (DOE).

PROLIFERATION CHALLENGES FACING THE UNITED STATES

The worldwide proliferation of Weapons of Mass Destruction (WMD) and their missile delivery systems has emerged as one of the most serious dangers confronting the United States. In November 1994 and every year since, President Clinton has stated that, "The proliferation of weapons of mass destruction continues to pose an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States." The President also declared the proliferation of nuclear, biological, and chemical weapons and of the means of delivering such weapons a national emergency through Executive Order 12938.

As one of the United States Government's highest priorities, we must proactively address this problem that has broad consequences for international security and stability. At least 20 countries—some of them hostile to the United States—already have or may be developing WMD through the acquisition of dual-use technology, indigenous development and production, and/or support from rogue supplier states. Additionally, safety and security of existing nuclear weapons and materials are of increasing concern as economic and social pressures mount in countries such as Russia, Ukraine, Kazakstan and Belarus.

With the breakdown of the protection systems that secured nuclear materials in the former Soviet Union, states and subnational groups that do not have their own nuclear material production facilities or civilian nuclear programs may obtain nuclear materials through theft and smuggling. This illicit path to proliferation has become an area of great concern and attention for the national security community.

Additionally, we must be concerned with the growing threat from terrorism and the potential use of nuclear, chemical, or biological weapons. As we have seen over the past year, terrorist groups are showing a greater capability to use large-scale weapons to achieve their goal—chemical weapons were used by terrorists in Japan for example. The United States must have programs in place to combat and prevent these kinds of weapons from being acquired or used.

ROLE OF THE DEPARTMENT OF ENERGY AND THE OFFICE OF NONPROLIFERATION AND NATIONAL SECURITY

The Department of Energy and the Office of Nonproliferation and National Security continue to demonstrate to the world community the Administration's commitment to nonproliferation and reducing the threat from Weapons of Mass Destruction (WMD). Our responsibility to reduce the danger to U.S. national security from such

weapons involves preventing the spread of WMD materials, technology, and expertise; detecting the proliferation of WMD worldwide; reversing the proliferation of nuclear weapons capabilities; and responding to emergencies. We particularly draw upon 50 years of science and technology expertise resident throughout the DOE National Laboratory complex to help us achieve these goals. Today, I would like to highlight some of our key programs as well as new initiatives.

The Material Protection, Control, and Accounting (MPC&A) program in the former Soviet Union (FSU) seeks to provide enhanced protection and security for weapons-usable nuclear materials in FSU facilities, cooperatively strengthen indigenous MPC&A systems, and develop more effective standardized regulatory programs. This MPC&A program is part of our overall Arms Control and Nonproliferation effort that also seeks to limit the use of fissile materials worldwide, establish transparent and irreversible nuclear arms reductions, strengthen the nonproliferation regime, and control nuclear related exports.

The Initiatives for Proliferation Prevention program, formerly known as the Industrial Partnering Program, draws scientists, engineers, and technicians from the FSU nuclear, chemical, and biological weapons programs into commercial ventures. Through this program, we are able to reduce the potential for "brain drain" to proliferant states or organizations and provide long term employment for these scientists in non-weapons work. Additionally, the program facilitates broad access of U.S. laboratory personnel to FSU chemical, biological, and nuclear weapons facilities encouraging openness and transparency. Cooperative projects involving the ten largest DOE National Laboratories, a coalition of 75 U.S. corporations, and over 70 weapons institutes of the nuclear inheritor states of the former Soviet Union have engaged more than 2,700 former weapons personnel in the FSU.

Our Nonproliferation and Verification Research and Development program is dedicated to conducting applied research, development, testing, and evaluation of science and technology for strengthening the United States response to the threats to national security and to world peace. The program focuses its activities on the development, design, and production of operational sensor systems needed for proliferation detection, treaty monitoring, nuclear warhead dismantlement initiatives, and support to intelligence activities.

The Chemical and Biological Nonproliferation Program complements our significant effort in nuclear weapons nonproliferation. By leveraging the Department's more than $1 billion investment in chemical and biological sciences, our program seeks to complement efforts of the Department of Defense, the Public Health Service, and other U.S. Government agencies. The program supports long term research and development and near term technology prototyping to address mission needs in counterterrorism, military operations, and policy and treaty support.

In concert with our international activities, we are responsible for wide-ranging activities to accomplish nonproliferation and national security goals in the United States. These activities include: (1) directing a rigorous nuclear safeguards and security program for the entire Department of Energy complex, thereby ensuring the demonstrated security of our own nuclear materials, technology, and expertise; (2) declassifying millions of Departmental documents while protecting critical information that has the potential to facilitate the proliferation of weapons of mass destruction; (3) maintaining a security investigations program for both Federal and contractor employees of the Department; and (4) managing and strengthening the Department's emergency management and response capability and providing assistance to other government agencies as well as state, tribal, and local governments.

The Office of Nonproliferation and National Security also supports the President's Commission on Critical Infrastructure Protection to address growing concerns about domestic terrorist activities and both physical security and cyber threats to eight infrastructures that are increasingly dependent on technology and information (Telecommunication, Electrical Power Systems, Gas and Oil, Banking and Finance, Transportation, Water Supply Systems, Emergency Services, and Continuity of Government).

Finally, through our Counterintelligence Enhancement Initiative, we are redoubling efforts to protect sensitive national security technologies, expertise, and information from foreign intelligence services. We have increased our counterintelligence presence in the field, expanded awareness and training, and are aggressively pursuing counterintelligence leads and anomalies.

OUR SUCCESSES AND PLANNED ACTIVITIES

Over the past year, the Office of Nonproliferation and National Security has achieved major successes in nonproliferation. I would like to highlight five particular areas of which I am personally very proud of our achievements.

In 1996, the Material Protection, Control, and Accounting program secured hundreds of tons of weapons-usable materials at over 35 facilities in Russia and other states of the former Soviet Union. Cooperation is now underway at over 40 locations in Russia, and expanded cooperation in 1997 will include all weapons-usable nuclear material at all known facilities in the FSU, accelerated work with the Russian Navy, the addition of four new Ministry of Atomic Energy (MINATOM) facilities, and accelerated transportation security enhancements. Fiscal year 1998 efforts will include: increased equipment procurements; funding additional work at Krasnoyarsk-45; accelerating ongoing work throughout the MINATOM defense complex; extending naval fuel work to cover the icebreaker fleet, naval support ships, and the transportation of naval nuclear fuel; and fully implementing efforts to improve MPC&A for nuclear materials during transportation.

Second, the Office played a key role in achieving the indefinite and unconditional extension of the Nuclear Nonproliferation Treaty and the negotiation and signature of the Comprehensive Test Ban Treaty (CTBT). Our technology development program focuses on supporting operations to monitor and verify a Comprehensive Test Ban Treaty and has completed its second year. DOE technologies will significantly increase the nation's capability to identify potential nuclear explosions with high confidence and with minimal false alarms. The primary objectives of the CTBT monitoring system are to deter nuclear explosions in all environments (underground, underwater, or in the atmosphere) and, if such an explosion does occur, to detect, locate, and identify its source. The system is designed to provide credible evidence to national authorities, to aid in resolving ambiguities, and to serve as the basis for appropriate action. Seismic, radionuclide, hydroacoustic, infrasound, on-site inspection, and data processing technologies are all being exploited. During the summer of 1997, we plan to launch the FORTE small satellite on an Air Force Space Test Program provided Pegasus XL launch vehicle. FORTE will demonstrate the next generation techniques for detecting and characterizing electromagnetic pulses from nuclear explosions in the atmosphere. This new technology will provide the U. S. with improved capability to monitor compliance with nuclear test ban treaties.

Third, our new Chemical and Biological Nonproliferation Program, initiated in fiscal year 1997, has been developing technologies to detect, characterize, and facilitate decontamination of chemical and biological threat agents. In 1998, we will be expanding our emergency management capabilities to provide critical information necessary for an effective response to chemical and biological incidents. Specifically we will be improving the Atmospheric Release Advisory Capability to address chemical and biological plumes in addition to the current radiological capability. We will also be enhancing the Communicated Threat Assessment Program to provide assessments of chemical and biological threats in addition to nuclear threats.

Fourth, our program to counter nuclear smuggling is part of a partnership with other federal agencies to counter the theft of and trafficking in special nuclear materials. Our program overlays (1) barriers to illegal diversion of fissile and radiological materials at their source through the MPC&A program, (2) detection and interdiction of materials during transit and at international borders, and (3) response to threatened or actual use of these materials. Over the past year, we have developed technologies such as the Radiation Pager that will assist U.S. Customs Service and law enforcement personnel detect the presence of nuclear materials during transit. We are working with foreign customs agencies to increase the potential points of detection worldwide. We have also demonstrated the capabilities of the National Laboratories to determine the source of smuggled nuclear materials through forensic techniques. The Office also is working with the Department of State to implement forensics worldwide. In fiscal year 1998, the Office plans to provide customized versions of equipment now used at DOE facilities to improve security at U.S. borders. We also expect to develop highly portable and inexpensive radiation detection technology for city and state law enforcement and other emergency personnel.

Finally, our intelligence program continues to focus the decades of laboratory experience in nuclear weapons design and production on the emerging national security challenges of today. This program provides vital intelligence support to Administration and Departmental priorities, such as the Comprehensive Test Ban Treaty, the Reduced Enrichment Research and Test Reactor program, and our MPC&A activities. We put cost-effective, user-friendly technologies in the hands of intelligence, military, and law enforcement operators. Our nonproliferation objectives are best served by timely and well-focused intelligence assessments.

The efforts of the Office of Nonproliferation and National Security in concert with DOE's National Laboratories are achieving direct, tangible results that significantly improve our national security.

FISCAL YEAR 1998 BUDGET REVIEW

The table below summarizes the fiscal year 1998 budget request for the Office of Nonproliferation and National Security from the Energy and Water Development Appropriation as compared with the fiscal year 1996 adjusted appropriation.

[In thousands of dollars]

Appropriation/activity	Fiscal year		
	1996 appropriated	1997 appropriated	1998
Nonproliferation and Verification Research and Development	241,495	211,919	210,000
Arms Control and Nonproliferation	174,981	216,244	234,600
Intelligence	42,256	34,185	33,600
Nuclear Safeguards and Security	86,397	47,208	47,200
Security Investigations	20,000	20,000	20,000
Emergency Management	23,321	16,794	27,700
Program Direction [1]	.....	88,122	94,900
Congressional budget request	588,450	634,472	668,000

[1] The fiscal year 1997 budget request included a new Program Direction line item as mandated by the Energy and Water Appropriation for fiscal year 1996. This new budget line item provides funding for salaries and benefits, travel, support service contractors and other related expenses associated with the overall management and administration of the Office of Nonproliferation and National Security. prior to fiscal year 1997 Program Direction funding was contained in the individual decision units.

The Nonproliferation and Verification Research and Development budget request for fiscal year 1998 is a net decrease of $1.9 million. Funding is increased for the chemical and biological nonproliferation program and the nuclear smuggling/terrorism initiative. The increases are offset by reductions to remote spectrographic technologies for proliferation detection and materials detection research and development programs.

The Arms Control and Nonproliferation budget requests reflects a continued increase in nonproliferation activities with the FSU as cooperation increases for Materials Protection, Control, and Accounting activities. The MPC&A program is expediting the installation of systems, procedures, controls, facilities, and equipment to prevent the spread of nuclear weapons-usable fissile materials. The request also increases funding for the nuclear smuggling/terrorism initiative. The increases are offset by reductions to other Arms Control programs.

The Intelligence budget request reflects a minor net decrease from fiscal year 1997, although we are increasing funding for the nuclear smuggling/terrorism and counterintelligence initiatives.

The Nuclear Safeguards and Security budget request is overall unchanged from fiscal year 1997. Funding has been provided for the nuclear smuggling/terrorism initiative through offsets in other Nuclear Safeguards and Security programs.

The Emergency Management budget request increases funding for the chemical and biological nonproliferation initiative and for the nuclear smuggling/terrorism initiative. Additionally, funding is provided for the transfer of the Department's Communication Center from the Office of Human Resources and Administration and provides for the transfer of Threat Assessment funding from the Intelligence budget.

The Program Direction request supports core staffing requirements for the Office of Nonproliferation and National Security and restores funding for support service contracts which were reduced as a result of the fiscal year 1997 appropriation. This funding will be used to meet requirements for the Declassification Initiative, Safeguards and Security, Arms Control, Research and Development, and other nonproliferation activities.

CONCLUSION

Preventing the spread of weapons of mass destruction is a crucial national interest and a critical global security issue. The Office of Nonproliferation and National Security is uniquely capable to serve this national interest. Our policy expertise coupled with our science and technology base enables us to provide innovative solutions to national and international nonproliferation problems. The work we do benefits the nation's security across a broad spectrum: protecting nuclear material in the United States and worldwide; rolling back existing nuclear weapons development

programs internationally; ensuring the verifiability of nuclear treaties; and responding to emergencies. We are proud to be leaders working aggressively within the U.S. Government and in the international arena to make the world a safer place. Thank you.

INITIATIVES FOR PROLIFERATION PREVENTION [IPP]

Senator DOMENICI. Well, even though we are going to go to Dr. Smith, I just wanted to state for the record, Mr. Baker, there is a young man over at the Department of Energy—I do not know if he is here today, but John Hnatio——

Mr. BAKER. Yes, sir; he is here.

Senator DOMENICI. Oh, he is. He should be sitting right in the front row.

Frankly, the program of partnership with American corporations and the laboratories to put Russians to work on projects that are nonnuclear was a major nonproliferation initiative—and John was an effective proponent.

A lot of people thought that was nuts and he was wild and crazy. Frankly, it took us about 2½ to 3 years to get the program started, and frankly, it would not have gotten started without my cooperation with the administration on the foreign aid budget.

And so, the first effort was through the State Department—we wanted to get money out of there quickly, but in any event, that is how we started it. And I just want to give my accolades to Hnatio, and say to the Department, I think he did a great job.

This is an essential nonproliferation program and if it can continue to grow, it may very well make the nuclear scientists who have every potential to doing good things for Russia, but doing evil for the world, if they decide that they will not be paid or they have got nothing to do.

They could be great assets to rogue countries, but this program will help to mitigate that potential. There are a lot of efforts in this area, and the Department of Energy has some very exciting activities underway.

As you were talking about detecting, I jokingly whispered to my staff, since we cannot stop drugs coming across from Mexico, how could anyone believe we are going to detect or stop smuggling of nuclear weapons or technology and information—the so-called brain drain.

I am told that nuclear weapons are very easy to detect, since they are radioactive.

CHEMICAL AND BIOLOGICAL WEAPONS NONPROLIFERATION

And then I questioned, "Well, what about the chemical and the biological agents that are flowing that are so dangerous?"

And I gather we do not know how to do that, but is it true that we are even making some headway in some detection equipment regarding those softer, but probably more dangerous, instrumentalities of death and harm—in the biomedical and chemical area?

Mr. BAKER. Yes, sir; we are. You know, at the national laboratories we have over $1 billion of expertise in the chemical-biological area.

We, right now, sir, with the small amount of money that we received last year of $17 million in the chemical-biological area that

the Nunn-Lugar/Domenici bill authorized us, we have done a lot of work with the Department of Defense, with Dr. Smith's group, that, of course, are in charge of this chemical-biological area.

We are filling the gaps in the chemical-biological area. We are developing sensors, both short-range sensors and long-range sensors, to detect the chemical-biological agents on the battlefield.

We are making great progress on this. We have a lot of expertise at our labs. And we think we have come a long way to do this.

And this year, we plan to do more plume modeling in the chemical-biological area. So, I think we are making great progress in this area. And I think, next year, at this time, we can report to you a lot more progress even than we did this year with the $17 million.

Senator DOMENICI. I would note that that is a very small amount of money. Actually, the President's budget asks for $23 million, a $6 million increase. That is also a very small amount, considering the nature of the problem, but if we continue to use it propitiously, maybe we will be able to expand it, and at some point beyond that, but I do commend you for the work being done in that area.

Mr. BAKER. One thing I would like to say, sir, I have never seen all of the laboratories come together for a common problem like we have on this. For the small amount of $17 million, all of the laboratories pitched in, all of them doing their part; a very small amount of money to make sure this works.

And they—we have their commitment, they will continue to do it. And it is a very successful program. I think it is good Government the way the Department of Defense is working with the Department of Energy. And we plan to continue this next year.

Senator DOMENICI. Now, I note the presence of the ranking member in the State of Nevada, Senator Reid. I announced why you were not here at the offset. And I am pleased that you have joined me.

I will have to leave for a while and let you preside at about 10:30 a.m. or 10:35 a.m. And I will be right back. I have to go see the majority leader, although you had a caucus, we did not have a caucus today. So, there must be more problems on your side today than on ours.

Senator REID. That is what happens when you are in a minority. [Laughter.]

Senator DOMENICI. You have got to have a caucus everyday.

Anyhow, would you like to make some opening remarks?

Senator REID. No, Mr. Chairman. I do not care to make any opening remarks, but may have a statement to be made part of the record.

Senator DOMENICI. Sure.

Senator REID. I do not want to hold up the witnesses. I do want to say, publicly, this is the first time we have had the opportunity to appear as chairman and ranking member and how much I look forward to working with this subcommittee.

I have served with you, now, going on 11 years in the Senate, and going on 15 here in the Congress. And I look forward to working with you in a closer relationship on this subcommittee.

When I first came on the Appropriations Committee, you used to frequently lecture anyone that would listen about the importance

of the national labs and the science that was emanating from the labs.

And in the last several years, I have also been educated in that regard, and recognize the importance of the labs to the—really, the survival of our country.

Just in commenting, Mr. Baker's statement, $17 million spending on this very important nonproliferation program. Do you realize that the BLM spends that much money on the Wild Horse Program in the western part of the United States.

So, I am not——

Senator DOMENICI. Think of that. Well, Senator, I want to also thank you, because you have shown, in the short time that you have been designated ranking member, even without a hearing, you have shown a high degree of interest and in learning about the various laboratories and the functions of this subcommittee. And I want to tell you that I look forward to working with you.

And I, too, want to reciprocate. You have traveled to laboratories. And we will soon go to Oak Ridge together. I want to make sure that we have a chance to go to Nevada and go look at the test site there, because that has been a fantastic asset for America for a long time. And there are still some valuable inventory there.

Senator REID. Just so long as I can keep you away from Yucca Mountain. [Laughter.]

Senator DOMENICI. Well, I—maybe I will leave you and go up there, and do my own thing.

In any event, I understand that situation. Let us proceed.

Dr. Smith, please.

STATEMENT OF HAROLD SMITH

Dr. SMITH. Thank you, Mr. Chairman. I would like to submit my written testimony for the record, and simply highlight a few of the points in that.

DETECTION OF CHEMICAL AND BIOLOGICAL WEAPONS

First of all, let me respond to the question you directed to Mr. Baker. You were quite right, Mr. Chairman, regarding the difficulty of detection of chemical and biological weapons versus nuclear weapons.

And Mr. Baker's answer was on point; namely, the Department of Defense is very pleased to have multibillion dollar, world-class laboratories enthusiastically researching the problems and the solutions that pertain there.

The role of the Department of Defense obviously is that of a faithful partner and a smart customer. And in the role of smart customer, I have spent this last year doing what I think Senator Reid will have to do, and that is to travel to all the important DOE installations.

This past year, not only the three laboratories, but also to Oak Ridge, Savannah River—of course, I visited various DOE—DOD installations, such as Barksdale Air Force Base, which houses the B–52, as well as touring some of our NATO bases, where we have U.S. nuclear weapons.

Traveling has been a bittersweet experience, Mr. Chairman. I think we are over the era of denial, when the weapons complex

really could not believe that we were entering a world without nuclear testing.

And now, today, I think they accept that situation with enthusiasm. That is not to say that the sudden change, and particularly, the downsizing is without pain.

DISMANTLEMENT OF NUCLEAR WEAPONS

One particular aspect of that became apparent when I was visiting the Sandia National Laboratory at Livermore; the so called California site. I was able to witness there the equipment that they have developed to monitor our dismantled nuclear weapons stored at Pantex in Texas. And the opportunity to see how carefully and thoroughly and securely we can keep track of what is going on inside these closed and heavily armored igloos is, indeed, very important.

So important, that despite all the equipment that we have given the directorate in Russia, to try to ensure that their weapons are safely secured, the equipment developed by the laboratories and installed at Pantex is something that I think we have to show to the Russians to further enhance the security with which they guard those nuclear weapons.

In that vein, I will be traveling to Russia in April to further the amount of equipment that we give them against the other side of the nuclear proliferation question.

Mr. Baker and Dr. Reis both talked about nuclear material, but one should keep in mind that there are tens of thousands of nuclear weapons, fully assembled weapons, stored on some tens—many tens of sites in Russia, guarded by soldiers that are sometimes not well paid, sometimes not even well fed.

It is incumbent upon the Nunn-Lugar, now the Nunn-Lugar/Domenici Program, to make sure that that kind of equipment can be put in the hands of our Russian colleagues, and yet, to ensure the American people that the equipment is being used for that and only for that.

ANNUAL NUCLEAR WEAPON STOCKPILE

Dr. Reis has already highlighted the issue I next wanted to point out. That is, the annual certification, I think, has to be described as a complete success. In particular, I was very pleased with, I think, the now mature Nuclear Weapons Council, where I serve as the Executive Secretary.

It has become, I think, the center point for all matters involving nuclear weapons. And I think it functioned very well this past year.

Another step forward in the Department of Defense in the world of nuclear weapons is the enthusiastic response by General Fogleman, Chief of Staff of the Air Force, in setting up what we call XON, Operations Nuclear, under Major General Neary.

We now have, thanks to General Fogleman, a center point for the Air Force, so that now I have a single point of contact to go to to ensure that the Air Force is giving the attentions to the weapons that they truly deserve, in a time when the nuclear world is not as overwhelming as it once was.

Dr. Reis has also commented quite correctly on the enormous accomplishment of the B–61–11, the penetrating weapon. I will not repeat what Dr. Reis has said.

I only want to note that I agree entirely with his statements, and also, to add two points from the war fighters point of view; namely, the yield of the B–61 is one-twentieth of the weapon that we will retire, the B–53.

Now, for a war fighter that is very important, because it means he can have the same effectiveness, and yet have 1/20th the collateral effects. We are very pleased in the Defense Department, that we were able to make this transition in less than 2 years.

Furthermore, the B–61 can be carried on the F–16 and on the B–2, whereas, the B–53 could only be carried on the massive strategic bomber, the B–52. So, from the warfighter's point of view, another fine step forward.

PREPARED STATEMENT

Mr. Chairman, it has been a singularly good year from the point of view of DOD's view of these weapons. I think we are off to the right start. And I will be pleased to answer any questions that you or Senator Reid may have.

[The statement follows:]

PREPARED STATEMENT OF HAROLD P. SMITH, JR.

Mr. Chairman and members of the Subcommittee, I am honored to have this opportunity to appear before you. My remarks today will focus on the challenge shared by the Department of Defense (DOD) and the Department of Energy (DOE) to ensure high confidence in the Nation's nuclear stockpile. I will also describe a few of our mutual accomplishments from the year just past.

As we are all aware, the last few years have brought significant change to the nuclear posture of the United States. The START I agreement to reduce the number of strategic arms was signed by American and Soviet Presidents and ratified by the United States Congress and the Soviet Duma. START II, which will further reduce strategic arms, has been signed by both the United States and Russia and ratified by the U.S. Congress, and awaits ratification by the Russian Duma. More recently, the U.S. underground testing moratorium was codified as the Comprehensive Test Ban Treaty, which has been signed by over 140 countries. In the U.S., emphasis has shifted from designing and producing new weapons, to extending the service life of our current weapons stockpile. As a result, the infrastructure of our Nation's nuclear deterrent must evolve from SALT and START, to stockpile stewardship.

The success of the Stockpile Stewardship and Management Program (SSMP) depends on the cooperative interaction of all the stakeholders in the nuclear infrastructure and oversight organizations. The President, the Congress, the Departments of Defense and Energy, and its national laboratories and facilities must work together to ensure that the Nation can continue to have high confidence in its strategic deterrent. My remarks today will focus on the stockpile stewardship and management program, some of its recent successes, and the challenges we will face in the near future.

PRESIDENTIAL DIRECTION AND CONGRESSIONAL OVERSIGHT

For the SSMP to succeed, the program requires direction and support from the highest levels of both the Executive and Legislative branches of government. In a speech given on August 11, 1995, the President described the importance of maintaining a viable nuclear deterrent: "As part of our national security strategy, the United States must and will retain strategic nuclear forces sufficient to deter any future hostile foreign leadership with access to strategic nuclear forces from acting against our vital interest and to convince it that seeking a nuclear advantage would be futile. In this regard, I consider the maintenance of a safe and reliable nuclear stockpile to be a supreme national interest of the United States."

In the same speech, President Clinton also directed the establishment of a new annual reporting process by which the stockpile could be certified to be safe and re-

liable under a comprehensive test ban. This new process will complement the stockpile stewardship program and the dual revalidation process currently underway at the national laboratories and the production complex of the Department of Energy and the Department of Defense.

Congress, of course, has played an active part in the implementation and direction of the SSMP. Beginning with the Defense Authorization Act for fiscal year 1995 (Public Law 103–160), Congress has demanded that the stockpile stewardship program be not only technologically sound but also fiscally responsible. In hearing after hearing, committees and individual members have repeated their requirement that the Nation's nuclear deterrent remain safe and reliable and that the money authorized and appropriated for the SSMP be efficiently allocated by those responsible for implementing the program. The joint organization responsible for the task of monitoring the progress of the SSMP is the Nuclear Weapons Council.

THE NUCLEAR WEAPONS COUNCIL

More than any other deliberative group, the Nuclear Weapons Council (NWC) is the most readily recognized and authoritative body concerned with management of the U.S. nuclear stockpile. As an interdepartmental organization, the NWC is supported by a wide-range of disciplines: security and safety experts, policy makers, managers, maintainers, and operators. Membership of the NWC consists of the Under Secretary of Defense (Acquisition and Technology) who chairs the Council, the Deputy Secretary of Energy, and the Vice Chairman of the Joint Chiefs of Staff. The Council is supported by the NWC Standing and Safety Committee, which I chair. The activities of the NWC reflect the monumental scope of the SSMP and the efforts put forth by both Departments to implement an effective and efficient program.

In 1996, the NWC completed its first annual report to the President on stockpile certification. The report included the views of not only the DOD and DOE, but also those of the national weapons laboratories and the U.S. Strategic Command. The consensus was that the current nuclear stockpile is safe and reliable. Accordingly, there is no need to resume underground nuclear testing at this time.

The NWC also provided managerial oversight of several important ongoing programs. Specifically, the NWC oversaw events concerning: implementation of the B53 replacement program; progress in the dual track approach to an assured supply of tritium; the W87 Life Extension Program; the Nevada Test Site readiness posture; the DOE enhanced surveillance and pit manufacturing programs; and, the Navy's Warhead Protection Program. The NWC and its supporting Standing and Safety Committee also served as the principal fora for coordination of activities on the DOE Stockpile Stewardship and Management Plan and review of DOE Defense Programs budget priorities and allocations.

The NWC also established a Requirements Working Group, chaired by Major General Eldon Joersz, to focus senior level attention on specific aspects of the nuclear infrastructure. This group will address issues such as stockpile reliability estimates, nuclear weapon life extension, and tritium requirements. Matters such as these will continue to increase in importance as underground testing recedes farther into the past and we progress into the new era of science based stockpile stewardship.

STOCKPILE STEWARDSHIP AND MANAGEMENT SUCCESSES

Mr. Chairman, I could talk at length about the NWC and its accomplishments. Instead, I will devote the remainder of my prepared testimony to distributing plaudits to organizations and programs that, over the past year, have labored to ensure that the Nation's stockpile remains safe and reliable and meets the requirements of the Department of Defense.

The B53 Replacement Program (B61–11)

One of the most significant contributions to the safety and effectiveness of the enduring stockpile has been the program to retire the aging B53 and replace it with a member of the modern B–61 family of bombs, namely the B61–11. The B53 was originally introduced into the nuclear stockpile in 1962. Aside from an interim safety modification made in 1988, the B53 has remained in the stockpile unchanged for the last 35 years. Because it was designed almost 40 years ago, the B53 does not meet modern safety standards—despite the 1988 upgrade. The system that is replacing it, the B61–11, is a modern system that meets current safety, security, and use-control standards. Were this the only advantage to retiring the B53, the effort would be worthwhile. However, other factors make the B61–11 a better weapon than the B53.

Operational considerations clearly favor the B61–11 over the B53. Due to its size and weight, the B53 could only be delivered by the B52 bomber. The B61–11 is compatible with both the F–16 and B–2. The B61–11 produces far less collateral damage and has the same effectiveness against deeply buried targets as the B53 with less than one twentieth the yield. Implementation of the program was performed in a remarkably short time—only 16 months from initial verbal authorization to delivery of the first retrofit kits. Four complete B61–11 retrofit kits were delivered to the Air Force in November 1996, two weeks ahead of schedule. The military personnel and laboratory representatives who comprise the B61–11 Project Officers Group should be justifiably proud of their accomplishments. They have not only made the stockpile safer, they have also skillfully and effectively met a difficult military requirement. The B61–11 is an outstanding example of using an existing weapon in a new way to hold at risk robustly defended, deeply buried targets.

High Speed Computer Technology

Over the course of the past year, the national laboratories have achieved stunning advances in stockpile related physics and engineering disciplines. For example, Sandia National Laboratory, in conjunction with Intel Corporation, has developed the world's fastest computer—one capable of performing a trillion operations per second. This kind of joint effort benefits both the private sector and the national defense. Industry gains access to research and development opportunities that would otherwise be unavailable. Sandia and the other labs can reap the benefit of a computer system that can be used to model the functionality of a weapon's core at the atomic level. We can use this capability to better understand how weapons perform and how they age, as well as applications for outside the world of nuclear weapons. Government and industry both benefit from this kind of interaction.

Dual Revalidation

The implementation of the Dual Revalidation process is another success story from 1996. The purpose of the revalidation process is to develop an accurate assessment of each weapon system in the active stockpile by two independent teams. A process of intense review and scrutiny was deemed the best way to accomplish this goal by a joint working group of DOD and DOE experts. The W76 Trident I warhead, originally designed by Lawrence Livermore National Laboratory, was chosen as the initial warhead to be so reviewed.

While DOE retains the responsibility of certifying weapons for DOD, the goal of Dual Revalidation is to understand what steps, if any, need be taken to ensure the continuing safety and reliability of the stockpile. Los Alamos, as the original design team, has taken the technical lead on the Dual Revalidation program for the W76 warhead. The Livermore laboratory will provide its own independent assessment. Under the guidance of the W76 Project Officers Group, great strides have been made over the course of the past year to ensure that the W76 remains a centerpiece of the nuclear deterrent into the next century.

MILESTONES FOR THE NUCLEAR INFRASTRUCTURE

The Nuclear Posture Review provides the DOD requirements for the DOE nuclear weapons infrastructure. As the principal advocate for the DOD, it is my duty to assess DOE's progress towards meeting these requirements. It is my pleasure to mention here some of the progress that has been made recently.

The Laser Welding Facility at Los Alamos was completed and demonstrated the first successful laser welding of plutonium since the complex was restructured after the end of the Cold War. The laboratory has also received the Plasma Inert Gas Metal Arc (PIGMA) welder from Rocky Flats and has completed and approved the drawings for installation of the facility that will house the welder. Surveillance of 20 pits was completed and a new pit evaluation report method using CD–ROM format that has been developed to provide significantly more useful information than previous paper reports.

The laboratories have re-established or improved stockpile management capabilities that were lost when the complex was restructured and reduced as a result of the end of the Cold War. Some recent successes include:

—The first weapon reserve detonator tests since the closing of the Mound facility were conducted, and the detonator surveillance program was recommenced; metallurgists have demonstrated the capability to form a full radiation case; Livermore has demonstrated that an ultra-high power, very short pulse laser can be used with great accuracy without melting material or generating waste product;

—The neutron generating facility at Sandia was completed ahead of schedule and within budget;

—Shipments of recertified neutron generators were all completed as scheduled; and,

—The prototype safeguards transporter was completed with scheduled delivery of the first production unit due in December of this year.

Activities such as these address the infrastructure requirements for the weapons complex delineated in the DOD Nuclear Posture Review. As the principle advocate for the "customer" in our relationship, it is gratifying to note the progress in these programs.

ISSUES

Programmatic successes from the past year offer encouragement to program participants and oversight organizations, but much work remains. The stockpile stewardship program faces significant hurdles—technological and political. In his August 1995 speech, the President pledged his support to surmount these obstacles, saying: "In order for this program to succeed, both the Administration and the Congress must provide sustained bipartisan support for the stockpile stewardship program over the next decade and beyond. I am committed to working with the Congress to ensure this support."

If it is to succeed, the SSMP requires sustained effort from all of the organizations involved. We must do more with less; we must make the most efficient use of our available facilities while new ones are constructed. We cannot delay until planned facilities become operational.

For instance, the non-nuclear experiments currently being conducted at the laboratories are useful but can only tell a portion of the story. The subcritical nuclear experiments scheduled for the Nevada Test Site are necessary to study nuclear materials performance in an aging stockpile. Subcritical experiments do not involve a nuclear yield and do not violate the letter or spirit of the Comprehensive Test Ban Treaty. These experiments can be performed at existing facilities with existing technologies. These experiments are essential to stockpile stewardship and need to be performed.

Secondly, the remanufacture of nuclear pits is of principal importance to the DOD. The Nuclear Posture Review contained a requirement that DOE be able to "demonstrate the capability to refabricate and certify weapon types in the enduring stockpile." The new weapons complex—regardless of its structure—must be able to perform this task. As yet, this capability has not been demonstrated. We must ensure that the future complex can provide remanufactured pits for the stockpile.

Lastly, and most importantly, funding continues to be the ultimate issue. The President has pledged his support and cooperation with Congress to ensure that the SSMP is implemented. Congress and, ultimately, the American taxpayer must be assured that the appropriated money is being well spent. In the modern concept of nuclear deterrence, DOD must be a willing partner and smart customer; DOE must be a responsive provider of services and technologies. Both Departments must make the best use of available funds. DOD has consistently supported the DOE and its budgets to implement the Stockpile Stewardship and Management Program. Though we will help defend necessary budgets, programs, and facilities at DOE, the DOD should not provide the funding itself. Maintenance of the nuclear arsenal has never been a function of the military. It should not become so now.

CONCLUSIONS

Today, the U.S. nuclear arsenal is safe, secure, and reliable. It is the goal of the stockpile stewardship and management program to maintain this high level of confidence in a static stockpile without having to resort to nuclear testing. Our Nation can be justifiably proud of the legacy of the past few years in which global nuclear tensions have been significantly reduced. In an era of no nuclear testing or new weapon production, responsible stewardship and management of the enduring stockpile offers challenges for a new generation of scientists and military personnel. The Departments of Defense and Energy are striving, together, to meet these challenges.

Mr. Chairman and members of the Committee, this concludes my prepared statement. I will be happy to respond to your questions.

Senator DOMENICI. Senator Reid, would you like to take a few minutes?

Senator REID. Since you have to leave, you go ahead with your questions. And I will wrap things up, if you——

Senator DOMENICI. No; I am not going to be able to get my questions in before I leave.

Senator REID. OK.

Senator DOMENICI. So, what I would like you to do is to ask all of them you want.

Senator REID. Then I will.

NONPROLIFERATION ACTIVITIES

Senator DOMENICI. So, I am going to ask a few and then go to a meeting at the leader's office. And I will be back.

First, let me—since I am acknowledging some people that have been very, very instrumental in moving ahead in the nonproliferation area, I want to thank the chairman of the full committee, Senator Stevens, because, you know, we put an amendment on the floor, the Nunn-Lugar/Domenici, a very expansive amendment, with reference to nonproliferation, even engaging America for the first time in trying to prepare its cities for seeing how many we could get to volunteer to work together and see what we could do about better training in the event of a weapon of mass destruction, like biological or chemical weapon were used in a community.

With that amendment offered on the floor, $200 million was authorized, and $200 million was appropriated, which, I think, is an indication that we made a very good case.

You are making a good case today, Mr. Baker, in all those areas you have spoken to. This is one of these situations in Government that is very unheralded, but very, very important.

And I, personally, intend to make the nonproliferation efforts, in its broadest sense, as we have described them here, to make those better known to the U.S. Senate and to the people of this country. When we spend a few $100 million on something like this in Russia, with some 25 rather secure areas, now, that we are giving them foreign aid, I look at it as probably the best expenditure of Defense money that we could ever spend, because if we are worried about defending our country from real danger, then to try to keep the Russian inventory and stockpile of special materials that can make nuclear weapons and of the scientists who can go produce them and keeping them busy, too me there is no bigger national defense initiative than that.

I also am somewhat concerned about another matter that I just want to lay before you all. And I note the presence of military representatives in the room. I say this in all honesty, I am very hopeful that at the very highest level of the military in the United States that the military leaders will exert more leadership and stronger support in the areas that we are talking about here.

I mean, nuclear weapons, in a sense, have been put on the back burner. I mean, we used to have very, very major presentations when we were talking about the nuclear hiatus of Russia and America's deterrent capability. Now it seems like maybe the support might be waning a bit.

ANNUAL NUCLEAR WEAPONS STOCKPILE CERTIFICATION

Having said that, Dr. Reis, we can all take pride in the letter signed by Secretary of Defense Cohen and the Acting Secretary of Energy Charles Curtis, about the status of the stockpile. But frankly, I hope you and all of those who participate in getting this done, understand that the directors of the national laboratories that par-

ticipate in this are the ones that are truly recommending that this certification be issued or not be issued. And I hope that we will constantly permit them to state their case, with reference to the Stockpile Stewardship Program and its efficacy.

NUCLEAR WEAPONS SCIENTISTS

And I hope that within the Department and within the laboratories that we are listening to those who are really deep thinkers and have been involved in this nuclear program for a long time. I say this because we have some of the greatest minds in the world, and we better keep them.

And we better have the same replaced by great minds in the next 10 or 15 years, or we will be in serious, serious problems with reference to this stewardship program.

So, I want to just admonish that you work very hard to continue to get input from the best minds around. This is an evolving program. We think we know what we ought to be doing.

And I have already congratulated you on your leadership, but I do not think we can afford to get stuck in some routine and some regime in a program that is just getting started, that is as complex as this.

My one observation is the biggest instrumentality to substitute for tests is the computer. The computing capacity, seems to me, from everyone I have talked to—and I have gone beyond directors, to people that are in the field that are the great physicists, and major, major computing capacity is what is going to give them some of the prowess to take the place of the testing. And I would ask you to—for your observation in that regard. And then I will return and ask some more detailed questions.

Could you comment on my remarks, please?

Dr. REIS. I think you have pretty well hit the nail on the head. People concentrate on the aging of the stockpile itself, in terms of the weapons themselves getting older.

I think, equally important, and perhaps in some way even more important, is the aging of the people in the laboratories, because ultimately, they are the ones on whose judgment we depend.

Since World War II, we have never fired a nuclear weapon in anger. We hope we never have to, but ultimately, the deterrent value of those weapons that goes to the President and goes to the Congress, is really the people that we are depending upon.

MAINTAINING STOCKPILE RELIABILITY

When we put this program together, Senator, General Shalikashvili, in terms of can we do this job, he had the nuclear weapons directors of the laboratories with him, and he just said, "Look me right in the eye and tell me not just that you can do this, but that you can do this in the future."

Because it will be some future laboratory director who will be looking to some future chairman, and future Secretary of Defense and, indeed, some future President who might be able to do that.

So, I think the program that we have tried to put together does emphasize that very, very strongly.

And in addition, I think what you indicated is that what we are dealing with is a different set of tools.

Senator DOMENICI. That is right.

STOCKPILE STEWARDSHIP PROGRAM

Dr. REIS. To inform that judgment and to ensure that one has to have the right people, those people have to have the tools to work with.

In the past, we did have the world's best computing. We did have the world's best experiments, but we also had the ability to do underground testing.

We still have many of those tools. We will not have the underground testing, so that puts more of a stress on the other tools that we need to use.

Certainly, the computing is premiere among the tools that we need to use, but it is not just the tools themselves; it is the connection of those tools with those people. That is why, as I mentioned in my opening statement, it was extraordinarily exciting to us that we now are, by far, the world's most capable computing.

It is the fact that we are working the computing with the designers and the engineers, and we are doing it as we speak at all three laboratories. And indeed, we are projecting that out into the complex itself.

That, I think, will really make the difference, but we have to keep testing ourselves. We have to keep asking. That is why it is so important, as Dr. Smith mentioned, that the Nuclear Weapons Council is now engaged in that process as well.

Senator DOMENICI. Well, frankly, I want to state for the record that I hope one of the tests for the success of this stewardship program is a constant inventory of the type of scientists that are migrating to the laboratories, or conversely, the type that are migrating out of the laboratories, to see what we have got left, because I believe we have left the period in history, for the scientists, that was exciting.

And some of the world's greatest physicists and nuclear experts, that is where they wanted to go, because that is where all of the real, real expertise and real research was undertaken.

I think a good test of our success would be to regularly determine what is happening to the personnel. And from that, determination, one can decide whether this program is going to work, because right now my guess is that—I am just going to pick a number, but 95 percent of the justification for this certification, signed by our new Secretary of Defense and Charlie Curtis, Acting Secretary—I would say 95 percent of this is because of the past; and not only the past 2 years, but the past, over 15 or 20 years, because we have got fantastically safe weapons that are durable and safe.

And whether this is forthcoming, based on the next 5 years of something brand new is for us to make sure in this committee, and you, in the Government, make sure we are doing it right.

Dr. REIS. I think the reason that we indeed have confidence in our ability now to do this is that we believe the weapons themselves have been well tested. The people who tested them are available.

So the challenge, as you have pointed out, is really to maintain that. I mean, we really are running a race now with mother nature.

We have to maintain our ability as fast or faster than the weapons age, and indeed as the experienced weapons designers, the experienced weapons engineers, and the experienced people in the production end—as they leave, we have to bring in a new set of people, who are equally good, but can reach back, get that experience, get that wisdom, and apply the new tools to ensure you, every year, that this system is working.

One of the keys, I think, to our ability to do this is, indeed, the attention that the President and the Secretaries pay to the program, and that they are doing this every year.

It is like taking your car back every year to the manufacturer and getting a guarantee. And as part of that, you want to ask, who is giving you the guarantee.

It is those people, really, that one should be concerned with. I really appreciate the support of this committee.

CAPABILITY TO RETURN TO UNDERGROUND NUCLEAR TESTING

Senator DOMENICI. Dr. Reis, I want to make one last point before I leave. It has somewhat to do with my ranking member's interest, but, part of this agreement included the Joint Chiefs of Staff saying, "OK. We will go along with this."

And the President of the United States had to get our military leaders to do that—that these interesting stockpile stewardship capabilities were going on, and scientists were telling the Joint Chiefs, "They will work," but also, there was the additional condition that the country could be ready to return to testing in a very expedited manner.

And frankly, I am just as concerned about if that event occurred, do we have the capability? I mean, are we keeping the right inventory, not only in the laboratories, but at the Nevada test site? Are we keeping the right kind of expertise? That is just a capability that we are going to have pay for.

Otherwise, you know, we will have one of these lab directors tell the Joint Chiefs, "We are not prepared to give you the required certification," because they have to certify that, too; that we can return——

Dr. REIS. That is correct.

Senator DOMENICI [continuing]. In a short period of time. That is one of the things they write their letter on. And so, I raise that point. And I think the Senator from Nevada is going to be interested in that, from what I can tell.

I want you to know I am interested, also, Senator Reid.

OK. I am going to be back in about 10 minutes. Thank you.

Senator REID [presiding]. Gentlemen, I am wondering if someone can respond to the question of Senator Domenici, whether or not we are capable if, in fact, some event occurs that we need to return to underground testing. Are we capable of doing that?

Dr. REIS. Let me take that one, Senator Reid.

We have just completed a detailed study, which was required by the Congress. It is in the final coordination process. Let me get just a little ahead of that and tell you what the results of that study are.

The answer to your question is yes, we can do that. The President has directed us to be prepared to resume testing in a meaningful way in 2 to 3 years.

The studies indicated that we can certainly meet that requirement the way we are going now.

The Congress also said, "Can you do it earlier than that? Can you do it in 1 year, 1½ years?"

We believe we can do that as well. Most certainly, it would require additional resources. We have identified what we would do in the event that that would happen.

Again, all of the details of that are in the report. The report should be coming up to the Congress relatively soon.

SUBCRITICAL TESTS

Senator REID. We have at the Nevada test site—we have heard how great the labs are from both the chairman and from me.

Could I hear comments from either one or all about how you feel that the Nevada test site, this multibillion dollar facility located 90 miles from Las Vegas, how it fits into the plans?

Dr. REIS. Let me start on that, and then I will turn it over to my colleagues. I am sure they will want to comment as well.

One of the more significant series of experiments that we will be doing this year as part of the Stockpile Stewardship and Management Program are the subcritical tests, for which we will be announcing the specific dates in a relatively short period of time.

What those experiments are doing really will be going after some very, very critical understanding of the plutonium equations of States, some are very, very detailed scientific experiments.

The only place we can do those is at the Nevada test site because, for one, we will be dealing with plutonium and explosives.

Again, there will not be nuclear explosions, and they will not be going critical. They are completely in compliance with the Comprehensive Test Ban Treaty. They really will be key to a lot of our understanding of working on real problems.

They are also useful for a second reason in the sense that they will help us ensure that in the event that we ever have to go back and do testing, if the President and Congress so direct, we will be able to maintain that technical expertise in large measure by performing these, you know, these tests themselves.

Mr. BAKER. Senator Reid, we have people serving at the Nevada test site, very important people that work treaty implementation for us. Also it is a perfect place to work some of our nonproliferation problems, like one system called the CALIOPE Program, which is a system to detect chemical effluence from a factory building nuclear-type weapons. The Nevada test site is a good place to test this capability, which we did this summer.

So, it is a great place to run tests like this that we need to do to make sure our detection capability for nonproliferation is the best we can get.

Senator REID. Dr. Smith.

Dr. SMITH. Senator Reid, I, first of all, want to emphasize the importance of these subcritical exercises, experiments.

From the point of view of the Department of Defense, they are sine qua non. We insist that the Department of Energy carry out such experiments.

Second, Dr. Reis is also correct in saying that it is the—I would say the prime ingredient in being able to return to a regime of testing if we find we have to do so.

I would also like to note that we carry out a number of important counterproliferation activities at the test site for the Department of Defense. Primarily, these are aimed at the type of facilities that we can test out there.

For example, we are duplicating what we think are chemical and biological facilities in rogue states and ensuring that the techniques we have for locating them, destroying them, and minimizing the collateral effects of such destruction is indeed realistic.

Second, there are obviously deeply buried tunnels in Nevada. And that is also key to our ability not only in the world of weapons of mass destruction but even in the conventional world, where many of the areas of threat that we foresee in the conventional world have resorted to deeply buried targets.

Again, the test site is the only place to carry those out.

Because we are already there with those first two that I mentioned, we are also concerned about somewhat softer targets, but nevertheless difficult targets, so-called cut and cover. So, we carry out operations there.

Furthermore, we are testing out our unattended ground sensors. This is, again, using modern technology to ensure that we can attack at the right time, at the right place and know the effect of those attacks.

I cannot discuss them here, but we also carry out very important operations associated with Special Forces. It is a pleasure to work at the test site.

Mr. BAKER. One last thing, Senator Reid.

Senator REID. Yes; please.

Mr. BAKER. We have a spill test facility out at the Nevada test site, which is the only one of its kind in the entire United States.

This place is the Environmental Protection Agency [EPA] certified to release chemical weapons. And there are about 33 different types of chemicals we can use in the spill test facility. And again, it is one-of-a-kind, and it is a very important facility for us at the Nevada test site.

Senator REID. You indicated chemical weapons. I think, probably, you meant chemical agents, did you not?

Mr. BAKER. Chemical agents, yes——

Senator REID. OK.

Mr. BAKER [continuing]. Or just chemicals.

DETECTION OF LAND MINES

Senator REID. Yes; chemicals.

One of the things that I and other Members of the Senate are interested in for example, Senator Leahy has led a personal—one of the things near the top of his personal agenda has been demining.

We need to come up with the ability to demine the world. I will never forget the trip to Angola that I took; 10 million people live

there, but they have 20 million landmines. And one of the biggest businesses there is constructing artificial limbs, especially for kids and women because they are the ones that go out in the fields.

Is that one of the potential uses of that vast Nevada test site, that we could do something there to make it more possible to demine parts of the world that need to be demined?

Dr. SMITH. Senator, that is well outside of my portfolio. But may I take that question for the record, and ensure that the Department of Defense gets an answer back to you?

Senator REID. I would appreciate that very much.

[The information follows:]

USING NEVADA TEST SITE FOR WORK ON LAND MINES

The Nevada Test Site has an area dedicated to developing and testing technologies for the remote detection of land mines. This area consists of 300 mines (minus detonators) buried in realistic situations. In the past, various organizations have attempted to use radar, infrared, and laser techniques to locate and isolate mines—without much success. There has been no activity for the last six months and there are no users projected for the foreseeable future.

DETECTION OF CHEMICAL, BIOLOGICAL, AND NUCLEAR WEAPONS

Senator REID. The other area that is in your portfolio, one of the things that is a concern to a number of people is—we have talked about rogue states, rogue individuals that would come upon nuclear devices in some manner.

How is our program advancing as far as being able to detect biological and chemical weapons? And what about these weapons of mass destruction that take so little space and cause so much harm?

Dr. SMITH. As Senator Domenici already mentioned, when it comes to nuclear weapons, the fact that they are radioactive gives us considerable assistance. We are working with Department of Energy to develop the right kinds of equipment to detect all three: Chemical, biological, and nuclear.

Senator REID. I would just interrupt, Dr. Smith. One of the problems that we have is we need guidance from the experts to tell us if there is more money needed in areas like this.

And my personal opinion is this is an area where we need to devote a lot more attention and energy to. And I am wondering if there are enough resources either with the Department—the manager at the Department of Defense to adequately do research as to how we can disarm some of these devices and detect them and, you know, other types of things.

Dr. SMITH. Yes; we could use additional funds. But I want to point out, Senator, particularly in this area of biological weapon detection, that that is an extremely difficult problem. And one would think we should simply double, triple the investment we are making there.

But we have to also have ideas. And we, I think, are tapping every source of good ideas on how to solve that complex problem. In short, I think we are now idea poor. And it is very difficult for me to come to the Senate and ask for more money when I do not have the solid ideas for you to finance.

DEVICE ASSEMBLY FACILITY

Senator REID. One of the big assets we have at the Nevada test site is a device assembly facility. It cost large amounts of money and was absolutely necessary when we had the testing program going on there.

This facility has never been used. Does anyone have any idea whether there is a use for this facility or whether it is just going to be saved for future use in case there is further underground testing?

Dr. REIS. Well, Senator Reid, of course, the major purpose of the device assembly facility now is as a place where one could deal with the so-called Broken Arrows, either our own or someone else's. We could disassemble that in a safe facility.

And, of course, assembly of test devices is still as valid a mission now as it was when the device assembly facility was first conceived. People are looking, as you might expect, very hard at other potential uses for the device assembly facility.

I would have to tell you the jury is still out as to whether it is an appropriate place to do some of these things. We will certainly get back to you in as much detail as we can, to give you an update in terms of where we are.

But it is, as you point out, quite a remarkable, modern facility, in terms of its ability to do a job.

It is certainly available as a backup for the assembly if we ever have to have that. But in terms of, as they say, new missions, we will just have to get back to you in more detail.

Senator REID. OK.

[The information follows:]

DEVICE ASSEMBLY FACILITY

Defense Programs plans the following missions for the Device Assembly Facility (DAF), once it becomes operational: (1) Subcritical Experiments—the assembly of subcritical experiments; (2) Test Readiness—maintain the capability to assemble physics packages for a series of one to three nuclear tests in the event the President declares a "Supreme National Interest;" (3) Damaged Nuclear Weapons—maintain the capability to accept and disable a damaged nuclear weapon (assume one exercise every other year to maintain skills, capabilities, facilities, and to maintain and develop processes and procedures); (4) Replacement of Able Site, A–27—the assembly/staging of High Explosives (HE) and radioactive materials in support of LLNL/LANL activities previously performed in Able Site, (examples in fiscal year 1996 and fiscal year 1997 included Ranchito, Ranchito III, Nellie 10, 11, 12, 13, Jigsaw, and Monarch).

Possible future missions for DAF include: (1) Training—in general, this area would include laboratory hands-on practice on nuclear weapons trainers, and "off-line" work by laboratory personnel with one of a kind components or assemblies. The most organized of these initiatives is the Joint Nuclear Explosives Training Facility, a Los Alamos sponsored initiative to provide formalized, structured training to laboratory personnel in a realistic setting. This initiative is currently structured to use either Area 27, or DAF when it is available, as an extension of training facilities at Los Alamos. (2) Enhanced Surveillance—the DAF could be used for field testing and demonstration of advanced techniques for the surveillance program. (3) Advanced Manufacturing, Design and Production Techniques (ADaPT)—the DAF could be used for field testing and demonstration of these techniques prior to full implementation. (4) Weapons Modifications/Life Extension Programs—the DAF is well suited to weapon modifications and life extension programs which, if conducted at Pantex, could significantly disrupt the ongoing assembly and disassembly operations being conducted there. DOE/NV developed a model for DAF contribution to a life extension program which could be adapted to a variety of weapon systems needs.

NUCLEAR MATERIAL PROTECTION, CONTROL, AND ACCOUNTING [MPC&A]

Mr. BAKER. Senator Reid, back to your question on detection, you were not here when I talked about some of the documents that we have put out.

You know, the problem that we had initially on the nuclear side, of course, was the large stockpiles of nuclear weapons and nuclear materials in Russia, inadequate accounting and protection systems, numerous facilities in States, potential for leakage and theft, and, of course, unstable political conditions.

I think we have come a long way. One can always use more money. But we are now working on MPC&A at over 40 sites in the former Soviet Union that are indicated on the map. It is in this document, which I will give you, sir.

We expect to have completed MPC&A upgrades at 25 facilities by the end of fiscal year 1998. We are working to improve security for all of the weapons usable materials. The Russians have 1,200 metric tons of highly enriched uranium [HEU] that can make 48,000 bombs; 200 metric tons of plutonium which can make 25,000 bombs. So we are securing this material.

We are trying to protect the material at its source. If this fails, we are trying to work with the FBI—we have a program plan out on how we want to work to counter theft, stop trafficking, and prevent the associated potential for terrorism.

We put together a program plan to work with other agencies to try—if nuclear material is not protected at its source, how we can stop it from getting into the wrong hands and getting into the United States.

So, we are working this very hard. I think it has come a long way. I would—I do not want to take credit for this myself, but I can—I can say if I stand back and look at the people who have done this, I would not have believed we would have gotten this far in 3 or 4 years.

It has come a long way, and it is thanks to people like you and this committee that has given us the money to work these problems and work them as hard as we can to make sure that this work gets done.

I echo what Senator Domenici said. It is not a Russian aid program. It is the biggest national security problem, I think, that we have in this country.

Senator REID. I would hope——

Dr. SMITH. Senator Reid.

Senator REID. Yes; please.

DEVICE ASSEMBLY FACILITY

Dr. SMITH. Just coming back to the device assembly, DOD does have an interest in that facility, and I will get back to you in writing, because the interests are classified.

Senator REID. Thank you very much.

Dr. REIS. If I could add to that——

Senator REID. Dr. Reis.

Dr. REIS. I should mention that as we continue with the subcritical experiments, we would be doing some of the assembly work at the device assembly facility.

Senator REID. I did not realize that.

Dr. REIS. Right. And it is, obviously, an ideal place to do that sort of work.

[The information follows:]

DEPARTMENT OF DEFENSE USE OF THE NEVADA TEST SITE

In our efforts directed at countering the proliferation of weapons of mass destruction, the Department of Defense utilizes the Nevada Test Site for training. We plan to investigate the expansion of those training programs. This expanded role would incorporate a wider array of the resources available at the Site.

NATO EXPANSION

Senator REID. I would only say that I hope that we proceed with the utmost care and caution in this NATO expansion, and it does not interfere with some of the good work that is outlined in this document that you have submitted to us.

Senator Domenici has asked that you wait. He has some more questions. I have no more. And so if you would have a drink of water and stretch, go to the restroom, whatever you need, I am going to hold—the committee is in recess until Senator Domenici returns.

Mr. BAKER. Thank you, Senator.

Dr. REIS. Thank you.

[A brief recess was taken.]

STOCKPILE STEWARDSHIP AND MANAGEMENT PROGRAM

Senator DOMENICI [presiding]. Dr. Reis, for the record, is the nuclear weapons stockpile safe and reliable, and does the DOE have the capability to support the requirements of the Defense Department?

Dr. REIS. Yes; it does, Senator.

Senator DOMENICI. How long will we have to wait until it can be determined that the Stockpile Stewardship Program works?

Dr. REIS. Senator, I believe it is working now. I think what we have accomplished over the past year in terms of the specifics that I mentioned and that which will be mentioned in detail in the testimony, really gives us a reasonable degree of optimism that it will be able to work for the future.

ANNUAL CERTIFICATION PROCESS

I think the annual certification process is a real help to us because it asks very simply: Do we have the confidence now, not just are we safe and reliable, but are we going to have the confidence for next year? Are we doing those things in the next year and in the outyears that make us feel that this is a working program?

It gives us the opportunity to ask what you mentioned earlier. Are the people certified? You know, it is not just the weapons themselves. It is the people who have to make that judgment that we are really concerned about. But I think over the past 2 years, we have made some significant progress in that regard.

Dr. SMITH. Mr. Chairman.

Senator DOMENICI. Yes.

Dr. SMITH. I wanted to come back to a point you raised earlier. That is very good advice to the customer in this case; namely, measurement of the flow of good people in and out of the laboratories.

I want to assure you that we, indeed, do use that as a measure and will continue to use it as a measure.

I also wanted to just take a moment to tell a story about General Shalikashvili that I think shows the strength of America.

The meeting that Dr. Reis referred to involving General Shalikashvili was also attended by Dr. Hecker, the director of the Livermore—the Los Alamos Laboratory and Dr. Narath, then the director of the Sandia Laboratory.

And it was in that discussion where General Shalikashvili decided that it was safe to go ahead without testing and made that quite clear to the two laboratory directors.

At that point, Dr. Hecker looked around the room and realized that he was born in Austria, General Shalikashvili was born in Poland, and Dr. Narath was born in Germany.

It speaks well for America that that kind of talent came to this country and was key to making such decisions. It is those kinds of people that we want to continue to attract, both from—natural Americans and those who come to live here.

Senator DOMENICI. Well, let me just follow on, Dr. Smith. Is the Department of Defense satisfied and confident that the Stockpile Stewardship and Management Program will be able to meet the requirements of the DOD the further we move away from the underground testing?

Dr. SMITH. I think the correct expression, Mr. Chairman, is, so far, so good.

The Department agrees with your position that we must retain the ability to return to testing in a reasonable period of time should events occur that give rise to such a situation.

Senator DOMENICI. Now, I know, Dr. Smith, that, you know, regardless of what department of Government, the executive branch is the executive branch, and everybody in that sense works for the President and with the OMB of the President.

ADEQUACY OF DOE'S BUDGET REQUEST

But I want to know: Does the Department of Defense have any concerns with the adequacy of DOE's budget request and DOE's ability to maintain the professional personnel needed to assure the safety and reliability of nuclear weapons?

Dr. SMITH. We think that budget is adequate, just adequate.

Senator DOMENICI. Let me state for the record that it is amazing that we have to struggle so mightily to keep this part of the Department of Defense's budget, which is managed by DOE—and that happens to be the way it is—but it is amazing that we have to struggle so mightily to get adequate funding, a $4 billion program, out of a Defense (050) budget that is about $280 billion.

It seems to me that instead of nickel-and-diming this program, which provides the underpinning of our nuclear deterrent, we ought to be very excited that we are maintaining this capability and perhaps the safety of the United States and the world. This

is $4 billion basic stockpile stewardship funding to ensure the reliability and trustworthiness of the nuclear weapons deterrent.

Does the Department of Defense have any specific concerns in this regard?

You have talked generally, Dr. Smith. But are there any specific areas of concern that we should know about?

MANUFACTURING AND PRODUCTION CAPABILITY

Dr. SMITH. We are concerned with the production facilities. So, we will keep a very close eye to make sure that we can reproduce, refurbish, remanufacture components and weapons in the years ahead.

It is too soon to suggest the situation is anything less than satisfactory. But as I—as we look over the budget, and over the complex in general, it is the remanufacturing capability that has gotten our attention.

But we will keep a very sharp eye on that through the Nuclear Weapons Council. And we will certainly come to this committee if we think that the DOE plan is underfunded.

RELATIONSHIP BETWEEN THE DOE AND DOD

Senator DOMENICI. I know that what is key to the Department of Energy getting an adequate budget in this regard is the continued good relationship between Dr. Reis, both as to DOE and as to the Department of Defense.

Now, am I safe in saying that Dr. Reis is held in appropriate esteem by the Department of Defense with reference to their concerns?

Dr. REIS. This better be good, Harold. [Laughter.]

Senator DOMENICI. I mean, we can do this off the record, if you would like. [Laughter.]

Or you may be excused, Dr. Reis. [Laughter.]

Dr. SMITH. No; on the record. Mr. Chairman, as you well know, this is part of the Vic and Hal show that has been going on now for some 2 or 3 years. And I think it is a good show. I know it is an effective show.

And Victor better answer the same way as I am, that it is, indeed, a pleasure to work with Dr. Reis. And he is, indeed, held in high esteem by the Department of Defense.

Victor.

Senator DOMENICI. All right.

Dr. REIS. Certainly, I think Dr. Smith deserves full credit for taking the Nuclear Weapons Council and making it a much more active and vital organization.

You know, having worked at the Pentagon for a number of years, it is a large, complex building. It does a lot of very, very different things all the way from health care to Bosnia to whatever. Maintaining the interest in nuclear weapons within that complex is his responsibility. I think we have really come a long way over the past couple of years.

Let me add that, yesterday I had the opportunity from the Armed Services Committee also to work with General Habiger, to testify with General Habiger, at the Strategic Command. Working

with Dr. Smith over the past year—General Habiger has visited all of our sites, all of the laboratories.

We have been working as a team in trying to ensure that both within the Department of Defense and the Department of Energy, that the people understand the importance of nuclear weapons, and really understand this difference. This is the paradigm shift, if you will, from production tests to a stockpile life extension, no-test-but-be-prepared role that we are all facing over the next decade or more.

LOS ALAMOS NATIONAL LABORATORY

Senator DOMENICI. Well, I just want to make sure that you know how I feel about statements that the Chairman of the Joint Chiefs of Staff has made a certification. Frankly, I have great respect for him, and I have grown to know him, and I think maybe I am even a friend.

But it is pretty obvious that he makes none of these decisions of the safety of this nuclear stockpile based upon his own intellectual analysis. I mean, frankly, I believe he would have a great deal of difficulty engaging in a very serious conversation of any length on what goes into all of this.

So, I think that decision is rendered because he gets advice. And the important thing is that we make sure the advice-givers are also adequately informed.

NEW DIRECTOR AT LANL

And that leads me to just an off the cuff, yet pretty important, remark. You know, Los Alamos National Laboratory, while it is under the direction of the University of California, has a vacancy in the directorship of that great laboratory soon, as Dr. Hecker is going to be leaving.

And some, you know, might think that it is going to be all decided by the University of California in their superior capability to select Ph.D.'s with great talent. But I hope everybody understands that we have just enumerated the significance of this office, director of one of the big national laboratories here, in the last 1½ hours as it relates to the nuclear deterrent and the safety and reliability of the nuclear weapons stockpile.

We must have somebody that understands nuclear weapons, I believe, and who understands the significance of their deterioration or, conversely, the significance of making sure they do not deteriorate, and what goes into it.

So the Department of Energy, ultimately, will have something to say about that directorship. And I would hope that the Department of Defense would have something to say about it.

I make no bones about that, regardless of what the University of California thinks. I am not interested in what their regents say. I am interested, ultimately, in their regents—I am interested in what some people that know about this laboratory and its relationship to our security have to say.

Is that a fair assessment, Dr. Reis and Dr. Smith?

Dr. REIS. I can tell you that the people from the University of California search group have already spoken to me about my re-

quirements—what I felt my requirements would be for the director of the laboratory. They were not very different than your own, sir.

I am sure that as that process goes on, if past experience is any indicator, that we will continue to maintain that close relationship. With your permission, I will certainly pass your remarks on to the university.

Senator DOMENICI. Yes; I am very interested in their decision-making, because they want somebody of high, high academic prowess that can carry the mantra right. But I think it is fair to say that we would be very interested up here in making sure that those who have to run this program also think that they are qualified for this particular job.

I think that would be a good thing to comment to them on.

Dr. Smith?

Dr. SMITH. Simply to say that the Department of Defense echoes, very much, what you said.

CHEMICAL AND BIOLOGICAL WEAPONS NONPROLIFERATION

Senator DOMENICI. Let me move to you, Mr. Baker. You have told us about the great accomplishments as you see them of the $17 million that was earmarked to undertake R&D related to detection of materials used in making chemical and biological weapons.

How much of that $17 million has been actually allocated in 1997, and the $23 million that came forth in the President's budget, what was your actual request?

Mr. BAKER. We have gone to work, sir, on the $17 million. The $17 million has been allocated. We have put work at all of the labs.

The labs came in with proposals on what we could do. Those proposals were looked at by the customers. We put the moneys out to the labs. They have gone—like I say, we are building right now sensors systems, standoff sensor systems. We are building also sensor systems that you can use up close for biological detection.

What we plan to do with the $23 million is continue to work on these sensor systems—they are not easy to build, especially in the biological area—and also to work on some plume modeling so that we can detect what is in these plumes.

We are also trying to assess, develop, and validate, the application of all of these plumes, and to predict how chemical and biological agents disperse, and who may be at risk in this.

So, I think with that small amount of money, if we can do this, it well pays for itself.

And again, we are working very closely with our customers—the Department of Defense and also the first-responder-type people, FEMA, and people like this, to try to help them out also on this, as they go through this first-responder training.

TREATY MONITORING AND PROLIFERATION DETECTION

Senator DOMENICI. One of the most important areas related to nonproliferation is treaty monitoring and proliferation detection.

The budget request does not seem to place a very high priority in that area. Am I in error, or would you comment on it?

Mr. BAKER. Well, sir, we still have our treaty monitoring capability. As you know, we are building—we are doing research for the

international monitoring system for the Comprehensive Test Ban Treaty [CTBT] as well as other monitoring capabilities so that we can detect nuclear explosions underground, underwater, and in the atmosphere.

We still have our detection systems to monitor the current treaties that are in effect. For the CTBT, again, we are doing all of the R&D for the international system; like I say, for underground, atmospheric and underwater.

So, we feel like it is adequate. We can always use more money, but we think right now that we have enough money to do what we have to do, which is monitor the current treaties and also prepare for a comprehensive test ban monitoring capability.

SPENT FUEL PROGRAM IN NORTH KOREA

Senator DOMENICI. Let me just ask one question about North Korea. There is an increase in the request related to spent fuel work in North Korea.

If you can tell me what is the extent of our activities in that regard? What were they in 1997? And what do we expect them to be in 1998? What is left to be done under the agreement?

Mr. BAKER. I am happy to say, sir, we have right now—out of the 8,000 fuel rods that we have in North Korea that we are trying to can, we have canned over 60 percent.

We—as you know—initially, when we went into North Korea, we ran into a lot of problems, a lot of sludge in the pool that we did not expect, heating systems that went bad. We had to ship in heating systems. We had to ship in more cranes.

So the program is working very, very well. We plan to be done with all 8,000 fuel rods, hopefully, by the end of the year; I hope by September.

My staff says, "Please say by the end of the year."

We are working this very quickly. Ms. Cherie Fitzgerald is the person that has been working this full time.

After we can all of this and tag all of this for IAEA safeguards, we are asking for $5 million in fiscal year 1998. What is that used for? Well, it is used for equipment maintenance. It is used for spent fuel and canister maintenance.

It is for personnel oversight. We have to go over with the IAEA and do technical evaluations of all of this to make sure it is in the same sealed canisters that we had it in when we leave, hopefully, in September.

Senator DOMENICI. We seven Senators are going to North Korea. They extended the invitation, and they tell us that they are going to welcome us and our plane. I have heard that sometimes they invite, and then when you are en route, they say you cannot come in.

We are sure hopeful that with the chairman of the Appropriations Committee, myself, Senator Thad Cochran, Daniel Inouye, and a few others, that they will let us come in and talk with them.

Obviously, we will have some discussion about your program.

Mr. BAKER. Thank you, sir. I hope that they will let you in, too. [Laughter.]

I think they will.

Senator DOMENICI. We will see.

Mr. BAKER. We will work that. Ms. Cherie Fitzgerald will work that.

Senator DOMENICI. I think there are a few people telling them it will be kind of important.

Mr. BAKER. Yes, sir; those are the people——

Senator DOMENICI. Not that——

Mr. BAKER [continuing]. That control our money.

Senator DOMENICI. Not that we are bringing anything with us; I mean, we have no gifts.

Mr. BAKER. Yes, sir.

Senator DOMENICI. But they would maybe like us to bring some food, but our plane is not really one of those kinds of planes. So, we cannot do that.

I have a series of questions that were submitted by Senator Reid that he did not ask, and some by Senator Craig. I am going to include them in the record and see that you get them. Whoever the questions were directed to will get the questions.

CORE RESEARCH AND ADVANCE TECHNOLOGY PROGRAMS

Senator DOMENICI. Let me proceed with just a few questions regarding the Core Stockpile Stewardship Program, particularly the impact on core research and advance technology work to fund some high profile programs and initiatives such as the accelerated strategic computing initiative and the national ignition facility.

We have talked about that and my concerns are that these high profile initiatives are important and have to be maintained if we were going to have a reliable Stockpile Stewardship Program.

But these new initiatives should not be undertaken at the expense of the basic core competency of the national laboratories. How do these core research and advance technology activities contribute to the stewardship maintenance mission?

And what vulnerabilities do you see, Dr. Reis, in the core research and advance technology programs in the near and long-term, if the downward funding continues in those areas?

Dr. REIS. Senator Domenici, there are a number of tensions that occur within a program that is changing as much as we are. Part of the changing is how to invest now in terms of what the concerns are in the future.

Another concern we heard from Dr. Smith is, How do you develop a balance between production, which occurs now, production in the future and the research?

Not only do we have to remanufacture, which we know we have to do, but we have to do the surveillance to ensure, you know, when should we do the remanufacture?

Then we have to have the assessment. When we replace the parts, are they sufficient—are they as good as the old parts? Will the weapons work and will they work effectively?

As you pointed out earlier, we have been going through a major change over the past 3 or 4 years. So inevitably one has tensions, and one has to make judgments in terms of: Am I investing in the future properly, or am I investing in what I am doing currently?

In the past, the way the weapons complex and the laboratories operated, in particular they had a large core research effort. That

core research expanded and contracted depending upon the new development requirements.

If there was a lot of development work, the core research was contracted, perhaps. And then the people who were working on the core worked on a new development.

That paradigm is changing now. That model is changing. Clearly, we cannot eat our seed corn as we are working on current problems. On the other hand, if we do not plant that seed corn properly, it will never work.

I think we have a reasonably good, balanced program right now. I am concerned, certainly as you are. Is the program balanced properly? All the time, that is one of the major efforts of what we have to do, provide the judgment ourselves. We do not do that ourselves. When I say ourselves, I mean the DOE/DOD team.

But that really is, in large measure, judgments within the laboratories. I mean, that is where the expertise is. You talked about computing earlier. Well, we have to buy the new machines. But also we have to develop the codes to use those new machines. We have to do the experiments to validate the codes for the new machines. At the same time, we have to maintain our current production complex.

Indeed, the thing that I keep coming back to, and I am pleased that you keep coming back to, is the people themselves, because ultimately this is a judgment call. We have to keep investing to ensure ourselves that we have the best and brightest people working on these tough problems.

DEFENSE PROGRAMS FUNDING

Senator DOMENICI. Well, let me just give you a couple of examples. I am concerned particularly that the budget request might not be adequate for some of these support activities. And I am just going to state a few.

The microelectronics, the weapons physics and advanced hydrodynamic radiography effort at Sandia, these have been coming down, I understand——

Dr. REIS. Yes.

Senator DOMENICI [continuing]. For 2 years. But I am concerned whether this is going to create a problem as it relates to the capability of the national labs to solve critical issues of the aging stockpile.

Could you comment on that?

THE AGING STOCKPILE

Dr. REIS. Again, we are trying to balance those as best one can. Those are important issues; there is no question in my mind. Those are important issues.

We will try to be perhaps more specific and answer that question in terms of where we are going. Again there are always balances and judgment calls that we are making.

DUAL AXIS RADIOGRAPHIC HYDRODYNAMIC TEST FACILITY

Let us take one very specific important area. It is the dual axis radiographic hydrodynamics test facility [DARHT]. We are work-

ing—as I mentioned in my testimony, we are pressing hard on the DARHT facility.

Senator DOMENICI. Yes.

Dr. REIS. Well, we want to be sure we get the DARHT facility working properly. We want to be looking at the next step, you know, basically the next step beyond that.

We want to be sure we nail one down firmly before we are sure what the next step might be, so there is a balance. Basically, there is a balance. There is a balance there that has to take place.

We feel pretty comfortable in the budget we are presenting to you, that we have done that balance about right. But we have just got to keep working that problem in the future to be sure that we do not get in those situations, as you mentioned.

NATIONAL IGNITION FACILITY

Senator DOMENICI. Let me talk a little bit with you about the NIF facility.

Dr. REIS. Yes.

Senator DOMENICI. My questions today will not go into the scientific pros and cons, but it will be relegated to issues of cost——

Dr. REIS. Yes.

Senator DOMENICI [continuing]. And cost overruns, and it will all be predicated upon if we fully fund NIF. And I said that "if" first.

The total construction cost has increased from $842.6 million to $1.046 billion. And the program cost has gone from $1.074 billion to $1.199 billion, $1.2 billion.

Now I think it is very important that we look at history, and frankly, the Department of Energy's history on major, big, big projects is pretty abysmal. I do not have the statistics in front of me, but for major facilities, there are many of them that never reach——

Dr. REIS. I can——

Senator DOMENICI [continuing]. Fruition, never completed or utilized after a lot of money was put in them. Part of the reason for them not reaching fruition, not totally, but part of it is that the costs skyrocket, and then they are easy prey because they get to be very big. Big overruns make noise and draw attention.

So could you tell me what the Department is doing to assure that overruns are held in check and that when we decide whether we are going to proceed with this project, that we know the costs?

DEFENSE ASSET ACQUISITION ACCOUNT

Dr. REIS. Yes, Senator. I think one of the advantages of full asset funding is you authorize the whole project in one chunk, and that is it. Then we basically have to live with that. So, that is a help.

Whether full asset funding gets approved or not, we have really gone through extraordinary measures on the national ignition facility to ensure ourselves that that overrun situation, the schedule slip, does not take place.

We have had extensive external review by people who are expert in these things, not just within the Department, but outside of the Department.

Because the national ignition facility is relatively large from a Defense program's perspective, we have gone more than the extra mile on that.

We feel quite confident that we will be able to pull that out despite the Department's experience on a number of programs is as you have mentioned. It is frequently mentioned to me in hearings, not just in this committee, but other hearings as well.

I hear about the Clinch River breeder reactor and superconducting super collider and a number of other situations as well.

One of the things we have done is spend the extra time up front. If you look at the problems that those particular projects ran into trouble with, inevitably—by the way, this is true not just for DOE problems, but DOD ones and civilian ones.

As you know, it is that you do not have the proper understanding of what the technology is, of what the costs are up front; you do not do the designs properly. You move to step two before you have completed step one.

That is why, as you have noticed, the numbers have gone up, because we have spent the year working through detailed design reviews, scope changes, getting the contractors on board, and getting a much better understanding of where we are going before we started construction.

I think we have a very good plan. We have scrubbed it up and down, back, forwards, et cetera, every way, every which way. We brought in not just the people who tell you how it does not work, but the people who have worked it.

The Department really has done a number of projects like the light sources and a number of other projects where, in fact, they have brought projects in on time, on schedule and actually, in some cases, under budget. Those are the people we have brought in to help us work with the national ignition facility.

Senator DOMENICI. Dr. Smith, I note you have been having a conversation with one of your staff. Are you on a timeframe that is urgent? We can excuse you, if you need be. I will just submit the few questions I have in writing.

Dr. SMITH. Mr. Chairman, you are, as always, a perfect gentleman.

No, I want to make sure that I am up to date on some ancillary points that Dr. Reis mentioned. I am under no time constraint.

Senator DOMENICI. All right.

Let me say, you should have added also that you have built into it some additional flexibility as I understand it, Dr. Reis.

Dr. REIS. That is correct. That is the part of, as I mentioned, what makes a good project. You have contingencies. You are honest with those, to start out with.

Certainly, within Defense programs, and the Department, we are quite comfortable that for NIF we really have looked at not just lessons from the things that did not work, but also lessons from the things that did work.

The team we have, remember, brought in NOVA on time and on budget. That has been a very, very successful experimental facility—as well as the work we have done on OMEGA at the University of Rochester.

Again, there is a record of success on these types of projects within the Department of Energy, I think, that is world class.

NATIONAL ENVIRONMENTAL POLICY ACT

Senator DOMENICI. This is really an aside, but I think it is good to discuss it with both the Defense representation and the DOE's representation.

I have no answer to this situation, but I will inquire of the Department with regard to the cost of using NEPA, the National Environmental Policy Act, as one of the major tools for determining whether we do things at our national laboratories, and whether the DOE is moving ahead with new activities.

My own view is that I do not think that NEPA was ever intended to be a planning tool. In fact, I think the way it is written up in law and applied, it is really not intended to be that. It was not intended that every project of every size, anywhere, have full National Environmental Protection Act application.

I do believe it is relevant to note that huge numbers of our projects and programs within the Department of Energy cannot move without a full EIS.

And I am not now critical of the Department, at least not yet, because for the most part, they have been ordered to do that, or lost the case where a judge says they must.

And I am not adverse to NEPA. I am just somewhat cognizant of the fact that it is not really intended to be a day-in/day-out planning tool for the maintenance of a national laboratory, or for improvement or additions.

It is supposed to be there if there is a major Federal action taking place. And so in due course, it would seem to me that becomes important in this program, because to the extent that it requires long delays from a project's origin to turning the first shovel of dirt and finishing the project, is very, very important to a program such as stockpile stewardship and management.

Again, today, I do not expect any comments, but I would say that I would think the Defense Department would be interested in whether the application NEPA is now just a matter of routine, when some discretion ought to be used.

And perhaps Congress ought to be asked in some instances what Congress thinks about some of these things, certainly in the authorization process or maybe in the appropriation bills.

So, I just make that observation. If it prompts either of you to make a comment, fine. If not, we will follow it up with the Secretary of Energy.

DOD VIEWS OF NATIONAL ENVIRONMENTAL PROTECTION ACT

Dr. SMITH. Mr. Chairman, I commend what you have said. And I hope you will continue to follow your line of reasoning. I think you are on point.

Let me give the response from the DOD point of view. That is, if ever and whenever we feel that national security is being threatened by impractical application of NEPA, then we have exactly the responsibility that you just said.

I would, of course, bring it first to my superiors in Defense. We would find a way to make sure that the Congress understand that

we, in Defense, are worried about EIS-this or EIS-that. So your point is well taken, sir.

Senator DOMENICI. Well, I want to be a little more specific with Vic, because I do not want you here today necessarily trading the Department's views. I am not asking for that.

But maybe you could supply, for the record, how much the EIS for stockpile stewardship has cost. Could you do that for us?

Dr. REIS. Surely.

Senator DOMENICI. And I understand that with reference to NIF, an environmental group has just asked a judge who ruled on this issue to reconsider whether DOE is fulfilling its obligations under an old EIS.

Could this judge question all of your plans?

Dr. REIS. Judges can certainly question anything they wish. But——

Senator DOMENICI. Are they apt to in this case, basically?

Dr. REIS. I do not know the answer to that.

Senator DOMENICI. All right.

Dr. REIS. Senator, I do know we feel comfortable with the substance of the Stockpile Stewardship and Management Environmental Impact Statement. We spent a lot of time and a lot of effort on it.

But we think it is an excellent document. We believe Secretary O'Leary supported it. She went on the record a record of decision last December. It has been some months since that has been out.

Our General Counsel people feel very comfortable that we have complied with the law, and the spirit of the law, certainly. We will certainly keep you informed in terms of what is happening there.

Senator DOMENICI. Well, maybe if you can, along with your submittal on the very targeted portion, I just ask for dollar numbers on stockpile stewardship.

Dr. REIS. Well, I think you asked for them all. I took the question as saying not just the stockpile stewardship.

Senator DOMENICI. Well, I——

Dr. REIS. But all of those, because, for example, we have Nevada. The environmental impact statement, as you know we have the environmental impact statement for DAHRT.

Senator DOMENICI. That is fine.

Dr. REIS. Did I get the sense of your——

Senator DOMENICI. I will modify it as to the extent that I do not think I said that. I am now saying that.

Dr. REIS. Oh, OK. [Laughter.]

[The information follows:]

COSTS OF ENVIRONMENTAL IMPACT STATEMENTS FOR THE OFFICE OF DEFENSE PROGRAMS

The estimated cost to prepare Environmental Impact Statements (EIS's) for the Office of Defense Programs (DP) from January 1990 to March 1997 is approximately $111.3 million, including an estimated $20.0 million for the Reconfiguration Programmatic Environmental Impact Statement (PEIS), which was not completed, (see Note 2 of Table 1), and $16.4 million for five EIS's currently in preparation or planning. The breakout of costs for each of the EIS's is shown in Table 1, which follows.

In accordance with the Council on Environmental Quality regulations (40 CFR 1500–1508) and the DOE National Environmental Policy Act (NEPA) Implementing Procedures (10 CFR 1021, as amended), DP uses programmatic and site-wide EIS's to support broad decisions and as a basis for tiering subsequent narrower decisions.

In addition, DP prepares site-wide EIS's for its sites to assess the individual and cumulative impacts of all activities at those sites. In the past seven years, DP has completed two major programmatic EIS's and three site-wide EIS's that have assisted in making decisions for the future direction of the nuclear weapons complex. The costs of these documents constitute over 95 percent of the expenditures on DP EIS's, and represent an investment for the future of the DP mission. Whenever possible DP has included specific project analyses in programmatic and site-wide EIS's; these specific projects might have required separate EIS's or Environmental Assessments had they not been included in these EIS's. These extraordinary documents represent a one-time investment involving multiple programs and large sites, a heightened level of technical controversy, extensive data gathering and analytical requirements, and extensive public involvement. The cost to prepare these documents is a small percentage of the total project or program costs (much less than 1 percent). With the completion of these documents, our future NEPA compliance costs will be considerably less than in preceding years.

EIS COSTS TO DATE FROM JANUARY 1990 TO MARCH 1997 FOR PAST AND CURRENT DP ACTIONS [1]

[Dollars in millions]

EIS title continued	EIS type	Cost	Completed
Operation of Lawrence Livermore National Laboratory/Sandia National Laboratories, Livermore.	Site-wide	$9.0	11/06/92.
Dual Axis Radiographic Hydrodynamic Test Facility (DARHT) at Los Alamos National Laboratory.	Project	3.0	09/08/95.
Tritium Supply and Recycling [2]	Programmatic	21.0	10/27/95.
Nevada Test Site and Off-site Locations in the State of Nevada	Site-Wide	10.4	10/18/96.
Stockpile Stewardship and Management [2]	Programmatic	16.0	11/15/96.
Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapons Components.	Site-Wide	15.5	12/13/96.
Los Alamos National Laboratory	Site-Wide	[3] 21.0 [4] 14.9	03/31/98.
Construction and Operation of an Accelerator for the Production of Tritium at Savannah River Site.	Project	[3] 3.0 [4] 0.8	07/31/98 [3].
Selection of One or More Commercial Light Water Reactors for Tritium Production.	Project	[3] 4.0 [4] 0.4	09/25/98 [3].
Sandia National Laboratories/New Mexico	Site-Wide	[3] 13.0 ([4])	01/22/99 [3].
Tritium Extraction Facility at Savannah River Site	Project	[3] 1.4 [4] 0.3	09/15/98 [3].

[1] This table does not include several Savannah River Site EIS's, which were started as Defense Programs EIS's, but were finished after the Site's transition to the Office the of Assistant Secretary for Environmental Management. Costs include Federal staff, support contractor, and management and operating contractor expenses.

[2] Cost for the Reconfiguration PEIS of $20.0 million, which included cost of activities between issuing the Notice of Intent on February 11, 1991, and issuing the Notice of Intent to separate the Reconfiguration PEIS into the Stockpile Stewardship and Management and the Tritium Supply and Recycling PEIS's on October 28, 1994, is not included in the cost of each of the subsequent EIS's.

[3] Estimated total.

[4] To date.

Senator DOMENICI. I thought I said stockpile stewardship, but you excite me by saying you have—you are willing to do some more. [Laughter.]

Dr. REIS. Well, I got the impression you were concerned about the whole issue. I think we will try to answer that question as best we can.

Senator DOMENICI. You are absolutely right; who knows what a judge will do? Some people assume that because judges make rulings, that really was the intent of Congress. It is obvious that, many times, it is not. And yet we have watched all of this evolve without much attention up here.

So maybe we do not have enough time to go look at——

Dr. REIS. Well, I certainly would appreciate your interest in that subject.

Senator DOMENICI. Well, we are interested. You have that——

Dr. REIS. Right.

TRITIUM PRODUCTION

Senator DOMENICI. I have a number of other questions for the subcommittee and some submitted by Senator Burns and Senator Dorgan, but I am going to concentrate in one area and then submit the rest of them.

Let us talk a little bit about the Tritium Supply Program. As I understand it, the budget request for fiscal year 1998 is $184.5 million. That is about a $35 million increase from the $150 million that we provided in last year's bill.

The Department's dual-track strategy for providing an assured source of tritium from either the accelerator, which we call the APT, or from the commercial light water reactor, the CLWR, the Department is expected to make the technology decision in late 1998.

Am I correct so far?

Dr. REIS. That is correct.

Senator DOMENICI. The technology that is not selected will be developed, if feasible, as a backup source. Secretary O'Leary late last year directed that the fast flux test facility at Richland, WA, be retained in whatever it is called.

Dr. REIS. I think it is in standby mode, I believe.

ACCELERATOR PRODUCTION OF TRITIUM

Senator DOMENICI. Yes; on standby mode as additional source. So let me go on now.

The budget request supports the initiation of the preliminary design on the accelerator production, APT, of $168 million, and detailed design of the tritium extraction facility to be located at Savannah River, at $39.5 million.

Can you describe, briefly, the status of the accelerator production of tritium, and the commercial light water reactor production?

Dr. REIS. I would be glad to, Senator. Both of those programs are on schedule. They are moving well. Concerning the accelerator production of tritium. There have been a number of technology demonstrations about some of the critical areas that people were concerned about at the Los Alamos National Laboratory.

All of those are doing, I should say, extremely well. Some of the components are actually working better than people had said at their requirements level.

We have brought on the potential prime contractor, Burns and Roe, with General Atomics, as a major subcontract to them. We have pulled together, I think, a very good management team led at this time by the Los Alamos National Laboratory.

COMMERCIAL LIGHT WATER REACTOR

So, I am quite pleased with the progress there.

Similarly, concerning the commercial light water reactor, a draft request for proposal has gone out for the utilities for a potential either purchase or radiation source purchases. So that is on schedule as well.

As you point out, the extraction facility, which we would need as a backup in any event, is going forward.

So again, what we are trying to do on that program is manage that similar to the national ignition facility, in the sense that we are trying to ensure ourselves that all of the technical bugs for the accelerator or all of the concerns that one might have are all worked out ahead of time, so that when Secretary Peña makes a decision, in which direction it goes, when we get a go for it and present it to you, that you can feel comfortable that there is not going to be an overrun sometime later in the program, or the program will not meet its, I should say, demanding schedule that has been put forward to us by the Department of Defense.

Senator DOMENICI. Dr. Smith, I assume that this dual-track approach, even though one of the tracks contemplates the accelerator technology which has not yet proven itself in the field, that the Department of Defense approves of this and thinks this is the right way to go.

Dr. SMITH. Oh, we definitely want the dual track. And I will say right away, Mr. Chairman, that the progress that Dr. Reis has just cited will be reviewed very carefully and in depth by the Nuclear Weapons Council.

We definitely want two tracks because there is technical risk associated with the APT, and there is legal risk associated with the commercial reactor approach.

This is not the right time to make a decision. So we will rereview this periodically, certainly within the year.

Senator DOMENICI. Dr. Reis, you do not have to answer this now, but what I would like you to do for the record is state for us the technical, regulatory, and legal concerns that would jeopardize or delay current production schedules for both of these alternatives and to relate those potentials to the milestones that you have in your current plan.

Would you do that for the record for us, please?

Dr. REIS. I would be glad to, Senator.

[The information follows:]

TECHNICAL, REGULATORY, AND LEGAL ISSUES REGARDING THE TRITIUM SUPPLY OPTIONS

For the Accelerated Production of Tritium (APT), the initial technical concerns centered on the need to integrate the individual components of the system into a production facility capable of continuous operation. Thus, during the past year and the next two years, the Department will design, build, and test critical components of the accelerator system and the results of these tests will be important inputs to the final design. Prior to a final selection decision the main areas of technical uncertainties have been completely resolved and are not expected to impact the plan for first production during commissioning in 2006 and 2007 with production at the full rate in 2007. Many of our initial individual technical concerns have already been settled by some earlier tests or the evolution of the design. The integration and operation of the low energy portion of the accelerator at full power will provide valuable data regarding system availability, component reliability, and beam dynamics. Target/blanket prototype demonstrations will confirm predictions of tritium production efficiencies and demonstrate the fabricability of target/blanket components.

There are no significant regulatory concerns for the accelerator and the Department does not foresee any legal issues as long as the accelerator is built at an existing DOE site (Savannah River Site).

With over 10 years of research, development, and testing completed to date, the technical aspects of producing tritium in commercial reactors are well characterized. To confirm these past results, the Department is conducting various laboratory tests and is planning to irradiate lead test assemblies in an operating commercial reactor this fall. However, the work done to date demonstrates that production of tritium in a light water reactor is technically straightforward.

With regard to regulatory issues, any commercial reactor engaged in tritium production will be required to obtain an amendment to its operating license. If the Department purchases an existing reactor, the NRC license may have to be transferred or terminated. If the Department's tritium strategy involves the completion of a partially completed reactor, there will be regulatory requirements that must be met before operation may commence. The Department has developed regulatory "roadmaps" for each of the three acquisition scenarios. The CLWR Project schedule includes sufficient time for the regulatory process to be completed.

The Department will shortly be submitting draft legislation to Congress to address several issues concerning the commercial reactors. These include: (1) Sec. 103 of the Atomic Energy Act: The Department of Energy is seeking authority for the Nuclear Regulatory Commission to license a nuclear power plant owned and operated by the Department, if necessary. (2) Sec. 210 of the Department of Energy National Security and Military Applications Act of 1981 (42 U.S.C. 7272): For purposes of producing tritium in commercial reactors, the Department is seeking a waiver of the prohibition of the Nuclear Regulatory Commission from using appropriated funds for licensing activities for any defense activity or facility of the Department of Energy. (3) Sec. 57(e) of the Atomic Energy Act (42 U.S.C. 2077): The Department of Energy is seeking clarification of this provision, which addresses the production of special nuclear material for nuclear-explosive purposes in licensed (commercial) facilities. Even though tritium is not a special nuclear material, this Section could be open to an interpretation, not intended by the drafters, which could prohibit the fuel in commercial reactors from being used to produce tritium for defense purposes.

Additionally, Sec. 44 of the Atomic Energy Act (42 U.S.C. 2064) enables the Secretary of Energy to sell or use for Department purposes any power produced at production facilities. The Act does not address power produced at commercial facilities involved in tritium production. The Department is seeking to expand upon the authority of Sec. 44, authorizing the sale of power generated by a tritium-producing commercial reactor.

On January 28, 1997, the Department released a draft Request for Proposal from nuclear utilities to sell to the Department a reactor(s) or irradiation services. Several utilities have expressed, both verbally and formally, that they believe a formal congressional expression of support for the use of commercial reactors in tritium production is necessary as a predicate to utility participation in the long-term program.

While production of tritium in commercial reactors is not expressly prohibited under the Atomic Energy Act or any other law, the legislation to be submitted by the Department would erase any doubt as to the authority of the Secretary to engage in this activity.

To address these issues, the Department is seeking to amend Sec. 91 of the Atomic Energy Act to assure the utility community, the Nuclear Regulatory Commission, and the Department that the Secretary has specific authority to: (1) be considered a "person" and able to own and operate a nuclear power plant under license; (2) use a commercial nuclear power plant to produce tritium for defense purposes, by either lease or purchase; and (3) sell power produced by such a plant under regulation by the appropriate Federal and State agencies.

The CLWR schedule permits sufficient time to address these issues and still meet the requirement of delivering new tritium gas in 2005. The schedule includes significant time to address legal or regulatory contingencies.

The APT Project can meet the required date. Based on the schedules and milestones identified in the APT Conceptual Design, the Department of Energy, as well as the Nuclear Weapons Council, is satisfied that the APT is capable of meeting the tritium requirement dates outlined in the Nuclear Weapons Stockpile Memorandum. The project schedule, however, is dependent on the availability of adequate project funding. Full funding of preliminary design in fiscal year 1998, final design in fiscal year 1999, and construction in fiscal year 1999 is necessary to ensure first production is achieved during commissioning in 2006 and 2007 with production at the full rate in 2007.

TRITIUM REQUIREMENTS

Senator DOMENICI. In general terms, how do the total tritium requirements change under START II or START III situations? How are they to be compared to current requirements and the date that the newly produced tritium will need to be available?

Who knows the answer to that?

Dr. REIS. I will start the answer to that. I will take the easy part first. We do not know what START III would be. I will turn that over to my colleague.

Senator DOMENICI. He may not know either.

Dr. REIS. I suspect he does not know either.

But the way it currently works, actually, there is not very much difference between, you know, START I or START II from our perspective because, after all, we are expected to be able to produce the tritium for the inactive reserve as well as the active reserve.

So while the numbers change, in terms of START I or START II, our requirements as set forward by the Department of Defense would not be that much different. Those are the requirements, by the way, that we are designing our system to meet.

Senator DOMENICI. Dr. Smith?

Dr. SMITH. Despite the complex nature of the problem, I will give you a strangely quantitative answer. Under the lead and hedge strategy, which we do impose upon DOE, under the hedge strategy—that is, the ability to return to START I levels—we will need new tritium by the year 2005. And I think that that is well understood, well studied.

If sometime between now and that date, we decide that we can safely go to the START II levels, then we do not need new tritium until sometime after 2010. I think that that is as good a measure as we can provide right now.

And I think we feel very confident that we understand the situation.

START III, Victor is right. I do not know the answer.

Senator DOMENICI. Well, look, I think you gave us just what we need. And we have to keep the eye on that ball, because we have a lot of people challenging the Department of Energy on this one.

We have certain Senators who, you know, have taken the position that one of the reasons we do not need a Department of Energy is because of their inability to address this issue. That is not my position.

But I think it is very important that the highest echelons of the Department of Defense be stating the case that things are going all right and the Department of Energy is not dragging its feet and it is not anti, and it has nobody over there trying to thwart this effort.

I gather that if such was the case as of this hearing date, somebody would be telling me about that, or somebody would be calling the office to report from the Defense side that this is not working well.

I do not want to wake up on the Senate floor with somebody, as I am marking up this bill, somebody saying the Department of Defense challenges the Department of Energy's schedules and its plans, or the like.

Is it fair to assume that will not happen, at least as of today's facts, in the Department of Defense?

Dr. SMITH. You may rest easy, Senator.

Senator DOMENICI. OK. I think we have maybe 20 or 30 questions directed mostly at Dr. Reis. We will submit those for your response.

Dr. REIS. When will you be back from North Korea?

Senator DOMENICI. I will be back—well, if they let us in—[Laughter.]

And let us out—[Laughter.]

We will be back——

Dr. SMITH. Or let us out might be the——

Dr. REIS. Right.

Senator DOMENICI. We will be back when the Senate comes in. I am not coming back before then.

Dr. REIS. Well, good luck on your trip, Senator.

Senator DOMENICI. Thank you.

Mr. Baker, do you have anything further to comment?

Mr. BAKER. No, sir; just good luck on your trip.

Dr. SMITH. Yes.

Senator DOMENICI. We will not be in areas where you have done most of your work. You know, I tried to do that, but frankly, I said: "Why do I not leave the group and go on over into the area where I could visit a couple of your facilities that you worked on?"

But you know, in Russia, that is just not so easy. That is 4,000 miles.

Mr. BAKER. It is a long way, sir. But hopefully, you will go back and we can show you a lot that we have done.

ADDITIONAL COMMITTEE QUESTIONS

Senator DOMENICI. I keep hearing the Russian leaders would like to see me and talk with me about this. And where I am going, apparently, there is nobody interested in this. So—but that is all right, too.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DOMENICI

SUPPORT TO DEPARTMENT OF DEFENSE

Question. Dr. Reis, is the nuclear weapons stockpile safe and reliable, and does DOE have the capability to support the requirements of the Defense Department?

Answer. The nuclear weapons stockpile continues to be safe and reliable. The Department of Energy and Department of Defense have expressed, in the joint Annual Certification Report, that it is not necessary to return to underground nuclear testing at this time to validate the safety and reliability of the nuclear weapons stockpile. The Stockpile Management program fully supports the fiscal year 1998 requirements, as defined in the President's Nuclear Weapons Stockpile Plan.

CONFIDENCE IN STOCKPILE STEWARDSHIP AND MANAGEMENT

Question. Dr. Reis, how long will we have to wait until it can be determined that the science-based Stockpile Stewardship program works?

Answer. The Science-Based Stockpile Stewardship program is working now. First, the Department has successfully addressed an issue with the Trident I (W76) warhead by using a combination of analysis, new experimental data, archived test and manufacturing data, and, most importantly, the collective judgement of the weapon

design laboratories. This success in using today's tools gives us confidence that the even more powerful testing tools to be developed will allow us to solve future stockpile problems without underground testing. Second, on February 7, 1997, the Secretaries of Energy and Defense certified to the President that the stockpile is "safe and reliable" and that "there is no need to conduct an underground nuclear test at this time." This certification came after an exhaustive review of all active and inactive weapons types by the weapons laboratories and the DOD-led joint Project Officers Group.

DEPARTMENT OF DEFENSE

Question. Dr. Smith, is the Department of Defense satisfied and confident that the science based Stockpile Stewardship and Management Program will be able to meet the requirements of the DOD the further we move away from underground testing?

Answer. With several caveats, the answer is "yes." Maintenance of a safe and reliable enduring stockpile of nuclear weapons is in the supreme national interest of the United States. DOD is currently satisfied that the science based stockpile stewardship and management program will meet the requirements of the Nuclear Posture Review. Our level of confidence in the stockpile will depend on the nature and scope of the problems that arise in the enduring stockpile. The Stockpile Stewardship and Management Program (SSMP) is currently our best approach to maintaining confidence without underground nuclear testing. Should the SSMP uncover problems that could only be rectified by testing, the President has stated that he would invoke the "supreme national interest" clause of the Comprehensive Test Ban Treaty. I am confident that this dramatic action will not have to be taken.

Question. Dr. Smith, does the Defense Department have any concerns with the adequacy of DOE's budget request, and DOE's ability to maintain the professional core of personnel needed to assure the safety and reliability of the nuclear deterrent?

Answer. Stewardship of the nuclear stockpile requires a highly qualified and motivated staff of experts. Without a strong commitment to sustain the enduring stockpile, expertise will erode. DOE must provide an adequate and stable funding base to perform this crucial work. We must protect the core program of stockpile management (e.g., nuclear pit refabrication and certification) and look for new ways to attract and retain the best minds. Accordingly, I believe that the fiscal year 1998 is adequate, just adequate, for this task.

Question. Dr. Smith, what do you see as the greatest threat to the U.S. and how is that threat being handled?

Answer. As the Secretary's principal advisor on nuclear weapons, I believe there are two classes of threats that require a continued, credible nuclear stockpile.

Over the past few years, Russia has made significant progress in diminishing the size of their stockpile and reducing the threat of "loose nukes." I am proud to play a major role in the Cooperative Threat Reduction program that has promoted this effort. However, we cannot forget that Russia has a large stockpile of nuclear weaponry—both strategic and tactical. The erosion of conventional military capabilities since the break up of the Soviet Union has left Russia in a situation in which it might be more willing to rely on these weapons, particularly their large arsenal of tactical nuclear weapons.

Secondly, there is still a wide assortment of rogue states with the potential to develop weapons of mass destruction. I believe that a reliable and flexible U.S. nuclear capability to respond to these threats is a significant deterrent. The deterrent effect applies to any potential proliferant who may consider development or use of these types of weapons.

During the Cold War, the U.S. nuclear stockpile bought our Nation time while Communism died of its own inadequacies. In today's evolving global security environment, that same stockpile still serves to deter a variety of threats.

TRITIUM SUPPLY

Question. Briefly describe the current status of the Accelerator Production of Tritium (APT) and Commercial Light Water Reactor (CLWR) programs to produce tritium.

Answer. In reference to the APT Project status, during the past year the Department has selected a prime contractor to add to the Los Alamos/Savannah River team. This prime contractor is Burns and Roe Enterprises Inc. teamed with General Atomics. Los Alamos has completed the construction of the first test items for the accelerator and others are being manufactured. The first of the accelerator components, an "injector," is working better than expected. Thousands of samples of materials, welds, and structures have been or are being irradiated in France or at Los

Alamos to confirm choices and projections of performance for materials for the "target-blanket," which is the part of the plant where tritium is actually made. The first results of these tests are currently being analyzed. The design of the accelerator has now been favorably reviewed by two external review bodies. The combined government and contractor team has produced a conceptual design and an associated cost estimate that is under intense review by the prime contractor and DOE. Due to increased funding in fiscal year 1996 and fiscal year 1997, the project has been able to advance some technology demonstrations that are key to proving the concept and making an informed decision in 1998. By June 1997, the Department plans to formally approve the cost, schedule, and technical baseline of the project. Assuming congressional support for our fiscal year 1998 budget request, in October 1997, preliminary design (Title I) of the APT plant will begin. Recently, a decision was made by the Department to adopt an integrated normal-conducting superconducting linear accelerator design as the basis for the APT conceptual design. Superconducting technology provides for easier and more flexible operation and will significantly lower the operating costs of the APT plant. We would be happy to supply a detailed briefing to you or your staff at any time.

Regarding the CLWR Project status, there are three general areas of activity: (1) development and fabrication of tritium-producing rods that will be placed in an operating commercial reactor; (2) acquisition and licensing of host reactor(s) or irradiation services; and (3) design and construction of a new facility at Savannah River to extract tritium from irradiated rods. Current status of each area follows: (1) Tritium-producing rod design is completed. Rod parts are being fabricated and will be assembled into four Lead Test Assemblies to be placed in the Watts Bar reactor this fall for irradiation over a full commercial reactor operating cycle to confirm the results from previous testing. The U.S. Nuclear Regulatory Commission is providing oversight of this activity. (2) A Draft Request for Proposals (RFP) has been issued to nuclear utilities. Based on industry comments, it is being revised and a Final RFP will be issued in May 1997. DOE expects to select host reactor(s) in early 1998. (3) The conceptual design for the new Tritium Extraction Facility is being completed and independent reviews are in progress.

Question. How do current schedules for beginning production compare with the requirements dates established by the DOD?

Answer. Presidential direction, coordinated by all agencies, is to complete the CLWR by 2005 and the accelerator in 2007. The accelerator program is on track to meet the 2007 date. The CLWR schedule meets its required completion of 2005.

Question. In general terms, how do total Tritium requirements change under a START II or START III situation; how do they compare to current requirements and the date newly produced Tritium will need to be available?

Answer. The Department's present requirement is to plan for new production of tritium in 2005 to meet the START I "lead and hedge strategy" and to maintain a five-year reserve of tritium. When START II enters into force, we will meet the START II stockpile requirements and protect the ability to support the START I level tritium need date and production capacity, as well as maintain the ability to return weapons in the START II inactive stockpile to the active stockpile should reconstitution to the START I level be necessary.

While arms reductions beyond the START II level will extend the date when new tritium production will be needed, the particulars of a START III scenario, such as quantities, types of weapons, and assumptions related to the inactive stockpile, have not been defined. Without these particulars, it is not possible to accurately assess tritium impacts of further arms reductions.

Question. What is the least cost option to produce tritium under START II and START III?

Answer. Under either Start II or Start III, the least cost option for tritium production (based on total life cycle cost) is expected to be the Commercial Light Water Reactor (CLWR) project. For the CLWR project, the Department is currently evaluating the purchase of an existing reactor or purchase of irradiation services. In January 1997, the Department issued a draft Request for Proposal and specific proposals from the utilities are expected to be received by August 1997.

Question. Can the APT and the CLWR each independently provide the required quantities of tritium under current program guidance?

Answer. Yes. Both the accelerator and the reactor paths of the Department's dual track strategy are designed for a capacity of three kilograms per year. This meets all known requirements.

Question. Why is it necessary to proceed with Title I and Title II detailed engineering and design of the APT option in 1998?

Answer. Preliminary design (Title I) of the APT plant is planned for fiscal year 1998, and final design (Title II) will begin in fiscal year 1999. Therefore, we did not

request Title II funding in fiscal year 1998, but will do so in fiscal year 1999. In order to meet the requirement to begin plant operations in fiscal year 2007, preliminary design needs to begin early in fiscal year 1998. The earlier (rather than later) start allows for better phasing of plant design, construction and startup and minimizes the "spike" in outlay requirements in the budget profile. Schedule risk is reduced by allowing for earlier procurement of long-lead items and greater opportunity is provided to work around difficulties that may arise.

Question. What impact would there be if start of Title I design were delayed until 1999?

Answer. Such a delay would greatly increase the risk in the program. It would require standing down major segments of our design team, adding additional uncertainty that full scale production would be achieved. It would make it very unlikely that first production would be achieved during commissioning in 2006 and 2007 with production at the full (3kg.) rate in 2007. The delay would prevent efficient phasing of plant design, construction and startup and would increase the "spike" in outlay requirements in the budget profile. Schedule and cost risk would increase by delaying procurement of long-lead items and reducing the time available to work around any difficulties that may arise. There would also be additional risk to technical performance since some design tasks would need to be performed simultaneously.

Question. What is the total cost of Title I design and construction for the APT project and the Tritium Extraction Facility proposed in the budget?

Answer. For the APT project the estimated cost of preliminary design (Title I) is $168 million and the estimated cost of final design (Title II) is presently $274 million. Beginning in April 1997, the detailed construction cost estimate that is part of the conceptual design report for the APT will be reviewed by an independent cost estimate (ICE) team as part of the normal DOE review process. After completion of the ICE and any necessary reconciliation, DOE will release the APT construction cost estimate. This is expected to occur by June 1997. We expect it to be in the neighborhood of $3 billion.

For the Tritium Extraction Facility, the total cost for Title I design (Preliminary Design) is $5.24 million and for Title II design (detailed design) is $34.26 million. The total cost for construction will be established when the Conceptual Design Report is completed in May 1997. A "not-to-exceed" construction estimate has been established at $285.5 million.

Question. What is the minimum amount required in 1998 to initiate only the Title I design for each project?

Answer. For the APT project, DOE is requesting $168 million in fiscal year 1998 for full funding of preliminary design (Title I). The obligation in fiscal year 1998 will be $67.9 million. This request is consistent with instructions issued by OMB Circular No. A–11, "Planning, Budgeting, and Acquisition of Fixed Assets" for full funding of major phases of a project.

Full funding for the design of the Tritium Extraction Facility is requested in fiscal year 1998 ($39.5 million). The obligation rate is to be as follows: in fiscal year 1998, $9.6 million will be committed to complete the Title I design ($5.24 million) and to initiate the detailed design fixed price contract ($4.36 million). In fiscal year 1999, detailed design ($17.2 million) will continue and be completed in 2000 ($12.7 million).

Question. The budget document indicates that construction cost of the Tritium Extraction Facility to be around $120 million and that the Conceptual Design Report will be completed during the 3rd Quarter of 1997. What is the current baseline construction cost for the facility, and how confident are you of this cost estimate?

Answer. We have developed a "not-to-exceed" construction estimate of $285.5 million. The fiscal year 1998/1999 Congressional Budget Submission data sheet clearly stated, "the fiscal year 1999 request is a preliminary estimate for construction activities only and includes no contingency funds. The Tritium Extraction Facility Conceptual Design Report is to be completed 3rd Quarter fiscal year 1997 and the project baselined in 4th Quarter fiscal year 1997. Full construction funding requirements will be available following approval of the project baseline. We remain fully confident in this estimate. We currently expect to request construction funds in the fiscal year 1999 budget cycle.

Question. What technology is assumed in the Conceptual Design Report and how would the design and construction cost change if another technology were selected?

Answer. A CLWR will produce tritium by irradiating 1000–3000 tritium-producing rods over a normal operating cycle of 12–24 months. The rods are stainless steel tubes containing the Lithium-6 isotope. The Tritium Extraction Facility will remove tritium from radioactive rods previously irradiated in commercial reactors. Generally, the extraction process involves heating punctured stainless steel rods to high

temperatures to drive off the tritium. Because of the radioactivity, rods will be handled with robotic, remotely operated equipment in heavily shielded rooms.

Because CLWR rods are stainless steel clad and extracting tritium from them requires a high-temperature, high-vacuum process, the existing Savannah River Extraction Facility cannot be used. Using different processes, the old facility handled aluminum rods from the Savannah River heavy water reactors. If necessary and with some modifications, the technology of the new Tritium Extraction Facility will be able to accommodate the APT's alternate lithium-aluminum target. No additional or alternate technologies are feasible for the extraction of tritium from rods irradiated in a commercial light water reactor.

NATIONAL IGNITION FACILITY (NIF)

Question. How important is the National Ignition Facility (NIF) to the national security strategy of the country?

Answer. A key element in our national security policy is seeking a Comprehensive Test Ban Treaty while maintaining our nuclear deterrent. Science-Based Stockpile Stewardship (SBSS) is essential for this element of our policy, and the National Ignition Facility (NIF) is critical to the success of SBSS. The NIF is the only planned facility that can provide a window into weapon physics at temperatures and densities close to those occurring in nuclear weapon detonation.

Question. How do the NIF and the other elements of the Science Based Stockpile Stewardship strategy, such as the Advanced Strategic Computing Initiative (ASCI), complement each other? In other words, how do they work together to form a comprehensive, effective program to support the nuclear deterrent?

Answer. Through integrated planning by DOE and the national laboratories, the Stockpile Stewardship program maintains a comprehensive and effective program to support a nuclear deterrent. The inertial fusion program and NIF need the ASCI provided tools and capability and ASCI needs the data and validation NIF will generate. For example, through experiments designed to examine physics issues at the relevant temperatures and densities, the NIF will validate components of complex models and simulations used in weapon simulations and provide data for use in the next generation of three dimensional codes. Through ignition experiments, the NIF will provide stringent tests of integrated performance, into the high temperature regime, of computer codes that predict weapon performance. NIF will use codes to help optimize the operation of the NIF and support the design of key NIF experiments.

The Stockpile Stewardship program also uses advanced computing to analyze and judge nuclear weapon issues as they arise. Both the physics and ASCI programs are developing needed simulations and models to address these issues. ASCI is developing the systems to support the simulations including: the trillion operations per second computers, the mass storage and data transfer methods, and additional problem solving enhancements such as high fidelity visualization technology. The ASCI program is providing essential capability to simulate weapon performance and assess weapon safety.

Question. How does the NIF contribute to the arms control and nonproliferation goals of the country?

Answer. In December 1995, the Department's Office of Arms Control and Nonproliferation issued a study entitled, "The National Ignition Facility (NIF) and the Issue of Nonproliferation." The report states, the NIF "* * * contributes positively to U.S. arms control and nonproliferation policy goals by allowing the U.S. to sign and abide by a zero-yield CTBT (Comprehensive Test Ban Treaty) and by providing the U.S. continued confidence in its weapons to allow for further reductions * * *." It further concludes that: "The technical proliferation concerns at the NIF are manageable and therefore can be made acceptable."

The draft study was reviewed by seven independent experts and coordinated with the U.S. Departments of Defense and State, and the Arms Control and Disarmament and Central Intelligence Agencies. The Secretary of Energy approved the conclusions of the report.

In addition, John D. Holum, Director of the Arms Control and Disarmament Agency, in his letter of July 17, 1995 to Senator Hatfield, stated: "The right to take the steps necessary to maintain our nuclear deterrent will be hollow—and, indeed our arms control priorities could be placed in jeopardy—if we do not have a stockpile stewardship program * * *." His letter went on to strongly support the NIF, which is an essential element of Stockpile Stewardship.

Question. Can the NIF replace nuclear weapons testing or provide the proof-test necessary in the development of new nuclear weapons?

Answer. No. The National Ignition Facility is intended for defense-related high temperature and high energy density research. It will have the capability to address a broad range of weapons physics problems. The certification of nuclear weapons requires a complex set of scientific and engineering information and will require the utilization of many analyses and experimental facilities. While NIF data will have a direct value to certification efforts, the NIF, directly and by itself, cannot certify new or modified nuclear weapons designs.

Question. Why has the total construction cost increased from $842.6 million to $1.046 billion, and the total project cost gone from $1.074 billion to $1.199 billion?

Answer. The NIF baseline cost and schedule increases are a result of: (1) the changes to the project scope and schedule (described below) incorporated in the preliminary design, Title I; and (2) incorporation of site specific costs for construction of the NIF at the Lawrence Livermore National Laboratory (LLNL).

The scope changes are:

—Facility user design requirements from the weapons program, weapons effects testing, and inertial fusion program needed to meet their programmatic missions.

—Site-specific infrastructure requirements for the LLNL construction site (footnoted in the fiscal year 1996 and fiscal year 1997 Project Data Sheets).

—Title 1 design changes to meet operational and maintenance goals.

The increase to the total construction cost (TEC) associated with these scope changes is $123.4 million. There are further design evolution and costing changes that add $29.7 million more to the construction costs. The remainder of the construction increase, $50 million, is attributable to the extension of the baseline completion date by 12 months to October 2003. The total construction increase is thus $203.1 million. This increase is partly offset by a reduction in Other Project Costs (OPC) of $77.8 million, made possible by costing changes and siting of the project at LLNL. Thus the increase in Total Project Costs is $125.3 million, with previously footnoted site infrastructure costs now fully included. The extended schedule is considered prudent in order to allow additional time to accomplish the added scope and is consistent with the total Defense Programs' annual funding profile. The slower pace of the project is compatible with the constrained pace of the inertial fusion and weapons physics base programs.

An independent cost estimate was conducted by the Office of Field Management resulting in a cost within less than 1 percent of the new project baseline. The completion of Title I design, with added scope, is the only time that a cost change should be expected, provided that funding is appropriated and made available on the current schedule as reflected in the fiscal year 1998 Congressional Request in the construction project data sheet for NIF.

Question. Can you foresee any reason which would necessitate a further change in the scope of the NIF?

Answer. No. The design is frozen. Physics discoveries requiring scope changes are always possible in leading edge research, but only one such change has occurred since 1990, and no others are anticipated before NIF operations.

Question. DOE has been severely criticized regarding large cost overruns, and its ability to manage and control costs. What steps has or will DOE take to insure the actual cost of the NIF program does not rise significantly higher than the revised $1.199 billion level?

Answer. Changes to the NIF baseline to date have been driven by scope changes to improve project utility and site-specific requirements. These changes were managed through the Department's disciplined baseline change control process as described in the NIF Project Execution Plan. We have established effective management control systems to track actual expenditures against established baselines.

Being aware of overruns in past DOE projects, extra care was given to validating design concepts of the NIF (through the Beamlet laser prototype experiments), to details in the design work, and to costing basis. Costs were derived in a "bottom up" estimate at the lowest Work Breakdown Structure level necessary for accuracy. The Automated Estimating System developed by Martin Marietta Systems, Inc. was used to calculate costs for the project taking into consideration schedule, contingency and escalation data. A probabilistic contingency analysis was conducted by the Bechtel Corporation using the Microrac Monte Carlo code. Cost escalation was based on DOE published rates for general construction and defense programs. The Independent Cost Estimate team from Foster Wheeler USA found that "the overall variance between the Independent Cost Estimate and the Project Office Total Estimated Cost and Other Project Cost is negligible," and was actually within less than 1 percent of the new project baseline.

The request for full funding of the project, as well as the comprehensive planning that has been part of preparing that request, are intended to assure that costs are accurate and will be maintained as predicted.

Question. What is the status of the readiness report for the NIF project?

Answer. The Department had contracted with the National Academy of Sciences (NAS) to carry out a study on the Inertial Confinement Fusion program. One of the elements of their charge was to review the scientific and technological readiness of the NIF. The Natural Resources Defense Council and two other organizations sought a temporary injunction to prevent the issuance of the NAS report. On March 5, 1997, the U.S. District Court for the District of Columbia granted a preliminary injunction that allowed the NAS to issue the report but enjoined DOE from relying on or utilizing information in the NAS report. The report was issued and posted on the Internet on March 20.

Independent of this action, the NIF project conducted its own independent technical review of the engineering readiness of NIF. The status of the NIF design was exhaustively evaluated, over a 60-day period, by a team of expert reviewers to determine the NIF's technical readiness to proceed into the detailed engineering phase of construction. The team formally recommended proceeding with the Title II (detailed engineering design) phase of the NIF and proceeding with site preparation/excavation and major long-lead procurement items.

Question. I understand that the completion date has slipped 1 year from the third quarter of 2002 to the third quarter of 2003. What would be required to put the project back on schedule based on incremental funding? Provide the annual, incremental funding profile which maintains the 2002 completion schedule?

Answer. In December 1996, a Level 1 Change Control Board approved the schedule and funding profile in the fiscal year 1998 Congressional Budget Request. The requested project schedule and funding profile conform with the obligational and outlay levels assumed in the fiscal year 1998 budget request, reduce technical risk, particularly in the optics area, and are consistent with the projected progress in the inertial fusion program. While project completion was delayed by 1 year, the initial operating capability will actually be achieved 1 year earlier than previously planned.

If the Department is notified before July 1, 1997, a maximum acceleration case would require $514 million to be available for obligation in fiscal year 1998 for the project to be able to accelerate project completion by 7 months and reduce the Total Project Cost (TPC) by approximately $35 million. An intermediate acceleration case that provides $354 million in fiscal year 1998 would allow acceleration of 3 to 4 months in schedule and a $20 million reduction to the TPC. However, we believe the anticipated savings and acceleration of a few months in the schedule do not justify the increased risk in meeting the cost and schedule targets. In addition, the accelerated cases would significantly increase outlays in fiscal year 1998.

For the record, I would like to insert a table that reflects the approximate schedule and funding profile for the accelerated cases. The information follows:

NATIONAL IGNITION FACILITY

Annual Obligations and Outlay Impacts to Accelerate Project Completion

(Dollars in Millions)

Base Case: President's Budget; FY 1998 Outlays = $200 million

Obligations

	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	**FY 1998**	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	TOTAL
TEC	0.0	0.0	0.0	37.4	131.9	**197.8**	284.2	248.1	74.0	49.0	23.3	1,045.7
OPC	6.0	6.2	6.0	23.6	59.2	**31.3**	6.8	10.0	1.8	1.4	0.9	153.2
TOTAL	6.0	6.2	6.0	61.0	191.1	**229.1**	291.0	258.1	75.8	50.4	24.2	1,198.9

Case 1 Maximum Acceleration

--Accelerates completion by 7 months; reduces TPC by $35 million; increases FY 1998 outlays by $127 million

Obligations

	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	**FY 1998**	**FY 1999**	FY 2000	FY 2001	FY 2002	FY 2003	TOTAL
TEC	0.0	0.0	0.0	37.4	131.9	**482.3**	**145.3**	100.9	73.1	35.6	4.2	1,010.7
OPC	6.0	6.2	6.0	23.6	59.2	**31.3**	**7.3**	10.0	1.8	1.3	0.5	153.2
TOTAL	6.0	6.2	6.0	61.0	191.1	**513.6**	**152.6**	110.9	74.9	36.9	4.7	1,163.9

Case 2 Intermediate Acceleration

-- Accelerates completion by 3 - 4 months; reduces TPC by $20 million; increases FY 1998 outlays by $58 million.

Obligations

	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	**FY 1998**	**FY 1999**	FY 2000	FY 2001	FY 2002	FY 2003	TOTAL
TEC	0.0	0.0	0.0	37.4	131.9	**322.8**	**320.8**	100.9	73.1	34.1	4.7	1,025.7
OPC	6.0	6.2	6.0	23.6	59.2	**31.3**	**7.0**	10.0	1.8	1.2	0.9	153.2
TOTAL	6.0	6.2	6.0	61.0	191.1	**354.1**	**327.8**	110.9	74.9	35.3	5.6	1,178.9

TEC: Total Estimated Cost (Title I and Title II engineering design and all construction costs for conventional facilities and special equipment). These are 'the line-item construction funds.

OPC: Other Project Costs (operating funds directly associated with the project, including environmental studies and developing specialized optics manufacturing processes). These funds are requested in the Weapons Activities Operations and Maintenance account under the Inertial Confinement Fusion program.

Question. Explain how the completion schedule can slip by 1 year, yet operation of the project can be accelerated by 2 years as indicated in the budget justification?

Answer. Improvements in the functionality and serviceability of the NIF have been accomplished through the Title I design. The added scope results in the need to extend the project schedule, but those scope changes also make the facility more modular. As a consequence of modularity and building design, it is possible to first construct and use one 8-beam bundle of lasers (one twenty-fourth of NIF), followed by one fourth, one half and finally the full complement of lasers. The modularity of the laser architecture, together with deliberate scheduling of the installation of laser equipment in the large two sided laser bay, allow early use of portions of the laser.

Question. The U.S. District for the District of Columbia just has issued a preliminary injunction on a motion by the Natural Resource Defense Council (NRDC) to enjoin the National Academy of Science from issuing their report on the Inertial Confinement Fusion program. What is the nature of the action, and what do you see as the long range implications of the legal action if successful?

Answer. In the case of *National Resource Defense Council* v. *DOE and NAS*, (CV–97–308), the plaintiffs asserted that the Department's use of the Committee for the Review of the DOE Inertial Confinement Fusion (NAS Committee), for evaluation of the National Ignition Facility (NIF), is an advisory committee and the Department did not comply with requirements of the Federal Advisory Committee Act (FACA). The NAS Committee's first report, which was to provide a review of the scientific and technical readiness of the NIF project, was scheduled to be released on March 6, 1997.

In a hearing held on March 5, 1997, Judge Friedman concluded that plaintiffs were likely to prevail on their claim that the NAS Committee is covered by FACA, and issued an injunction prohibiting the Department from relying on, or otherwise utilizing, the report and prohibited the Department from any further funding of the NAS Committee. The judge also ruled that NAS could release the report on March 10, 1997. On April 3, 1997, DOE filed a brief in support of its motion for partial reconsideration of the injunction (filed with the court on March 19, 1997) with respect to the bar on DOE's use of, or reliance on, the report.

The Department of Energy has used the National Academy of Sciences as a source of independent review for many years. The major issues for the long-term are whether or not the NAS must function under FACA, and when and how Federal agencies may rely on analysis by the NAS. While the Department does not require a NAS report to continue the NIF project, timely resolution of this issue is of great interest to the Department, since the Department would like to continue the use of NAS committee reports, to assist in future decisionmaking and project management.

CORE STOCKPILE STEWARDSHIP

Question. How do these core research and advanced technology activities contribute to the Stockpile Stewardship and Maintenance Mission?

Answer. The core research, development, and testing programs provide the intellectual knowledge base and scientific foundation of the Stockpile Stewardship and Management (SSM) program. This knowledge base provides the ability to anticipate stockpile issues, as well as to rapidly and comprehensively address emerging problems and issues related to the continued safety, security, and reliability of the enduring stockpile. Directed research and development in physics and chemistry, materials and components, computing and simulation, and systems and manufacturing techniques support the objectives of the SSM mission, enhance SSM capabilities and fill gaps within the overall knowledge base. "Cutting edge" experimental facilities are provided to push the envelope of modeling and prediction capabilities. These facilities and the activities they support also attract and retain skilled and knowledgeable staff who will enable the continuation of an effective Stockpile Stewardship and Management program.

The following are a few examples of such activities in fiscal year 1998:

—Fundamental physics studies of the properties of crystalline and amorphous materials will be linked to aging models for nuclear materials, high explosives, and electrical and mechanical components to predict aging and lifetimes of stockpiled nuclear weapons.

—A new radiographic facility, the Dual Axis Radiographic Hydrodynamic Test Facility (DARHT), will be used to obtain multidimensional views of primary nuclear weapon component behavior that will help allow predictive capability of stockpile weapons with aging and other environmental changes.

—Core computer modeling and simulation are used to assess stockpile characteristics as part of the Annual Nuclear Weapon Stockpile Certification to the President by the Secretaries of Defense and Energy.

Question. What impact does the reduction in 1998 have on DOE's human resource and other capabilities?

Answer. The apparent reduction in our fiscal year 1998 budget request for Core Research and Advanced Technology reflects the one-time increase in fiscal year 1997 due to the Congressional add-on in the final appropriation. With the Congressional add-on, the fiscal year 1998 request for the Core Research and Advanced Technology program is a 4 percent decrease from the fiscal year 1997 appropriation. Not considering this one-time increase, our fiscal year 1998 request is a 3 percent increase over fiscal year 1997 and a 9 percent increase over fiscal year 1996.

Question. What vulnerabilities do you see in the Core Research and Advanced Technology program in the near and longer term if this downward funding trend continues?

Answer. If there is a downward trend in the Core Research and Advanced Technology program in the near and longer term, we see the following vulnerabilities:

Historically, we have operated under a "level of effort" concept whereby resources have shifted between core activities and specific applications (formerly weapon development programs) to meet evolving priority requirements. To some extent this philosophy continues today with initiatives such as Accelerated Strategic Computing Initiative replacing weapon development programs in terms of applied requirements for core resources.

If our fiscal year 1998 and follow-on budgets for Core Research and Advanced Technology are reduced significantly, this "level of effort" concept will fail, and human resources and the competencies they represent could be in jeopardy. Shortages of skilled and knowledgeable individuals would have significant impacts on the capabilities of the laboratories to conduct the Science-Based Stockpile Stewardship program. With budget reductions, it would be difficult for the laboratories to keep adequate technical staff, their most valuable asset, and their ability to attract new top quality scientific personnel would also suffer. In the long-term, the shortage of world-class scientists could seriously degrade the ability of the nuclear weapons complex to carry out the legislated mandate to preserve capabilities that will maintain the necessary level of weapon safety and reliability.

Future budget restraints may limit the Department's ability to build and maintain new advanced research and testing facilities while maintaining the required technical competencies will be based on program priorities and technical requirements, with consideration of the needs to maintain infrastructure at our facilities and meet other corporate Defense Programs priorities within our outyear budget targets.

Funding for Core Research, including direct weapon support and Inertial Confinement Fusion, has remained at a relatively constant level over the past 15 years, al-

though direct weapons support has decreased and the core has increased. But the Core Research historically contained as part of the testing program has been reduced to zero and when taken into account, represents a decrease of total research funding.

Question. I am particularly concerned that the budget request may not adequately support critical activities such as microelectronics, weapons physics and advanced hydrodynamic radiography at Sandia Lab. I understand these areas have been declining over the past couple of years and continue the downward trend in 1998. Is this a problem as it relates to the capability of the national labs to address and solve critical issues of an aging stockpile?

Answer. Core Research and Advanced Technology funding for microelectronics has actually increased, but since Sandia's microelectronics activities are funded by multiple sources, including Technology Transfer and related industry support that have declined, their resultant overall budget in this area has decreased. We are trying to maintain the minimal level of funding in the microelectronics area as Sandia performs research essential to solving critical issues of the aging stockpile and is a potential supplier of radiation hard electronics if the current industrial suppliers exit the market.

The fiscal year 1998 funding estimates for physics and Advanced Hydrodynamic Radiography at Sandia are somewhat less than the fiscal year 1997 level, but the funding requested is adequate for fiscal year 1998 and in keeping with overall program needs and priorities. We are balancing available funds for these areas among all of the weapons laboratories, each of which is an important contributor to this research.

ACCELERATED STRATEGIC COMPUTING INITIATIVE (ASCI)

Question. This program has grown from nothing in 1995 to a request of over $200 million in 1998. Could you review, briefly, the goals, expected costs, program duration, schedules and anticipated funding requirements when the program was initiated compared to the program plan envisioned in the 1998 budget?

Answer. Planning for the Accelerated Strategic Computing Initiative (ASCI) started in 1994 and was motivated by the clear indication that the United States would need new means beyond underground testing to continue to assess and certify the safety and performance of a nuclear weapons stockpile that would age well beyond its design life. Prior to the formal creation of the ASCI, the need for additional strategic computing investments were recognized and $45 million was identified for the precursor concept of a Strategic Computing Initiative. At this time it was not clear how a Comprehensive Test Ban would be structured nor was the acceleration drivers of designer retirements and weapons aging fully considered in the scope of the initiative.

On August 11, 1995, President Clinton announced the United States' intention to pursue a "zero yield" Comprehensive Test Ban Treaty. This decision affected a fundamental planning assumption for ASCI. The decision to accept a complete cessation on underground nuclear testing dramatically changed the scope of the program. It significantly increased its technical difficulty, and made achieving key milestones by 2004 (while the bulk of the nuclear weapons designers with significant underground test experience were still working) imperative. Early in 1996, the program was rescoped to accommodate much more difficult simulation problems, an expanded set of simulation problems (particularly remanufacturing), a need to consider predictive aging in addition to safety and reliability, and the need to complete code validation sooner rather than later. Target funding was increased to $145 million per year based on a limited low-yield test ban. This was recognized as an estimate because the full implications of the zero-yield Presidential decision has not been completely assessed and detailed discussions with the Department of Defense regarding their requirements for confidence in the stockpile had not been held. This rescoping did not affect the ASCI simulation development schedule per se, but it changed the amount of physics modeling required, number of code development efforts required, and computing power and supporting environment required. It also produced the need to develop methods for coupling code development and validation on a tightly coordinated and commensurate schedule and introduced the need for initial validation of the codes by 2004. The fiscal year 1998 budget request of $204.8 million is needed to support these additional requirements in the ASCI program.

The "zero yield" decision not only expanded the set of simulation problems that needed to be addressed but also significantly enlarged both the simulation and the computational goals to accommodate for a far more full system, three dimensional physics and modeling requirements. These are driven in large part by aging issues and other requirements of stockpile life extension and enhanced surveillance activi-

ties. Our assessment shows that the computing power needed, by 2004, to support 3D, additional resolution, more complete physics simulation, aging issue predictive modeling and assessment, and remanufacture issues is well over 100 trillion operations per second (Teraops), which is hundreds to thousands of times more powerful than our previous most advanced scientific computers.

This level of simulation capability will be required in the 2004 timeframe to allow "test-based" designers and weapons analysts to validate that the simulations accurately reflect the "real world." The 2004 timeframe is critical because that is when we will have lost half of the current and most experienced "test-based" designer and analysts capability. These designers and analysts are considered "master craftsmen and women" who have earned that status by learning and understanding scientific issues associated with nuclear weapons and then checking themselves with an extensive program of underground tests. With the loss of underground testing, these weapons designers are now required to continue to do their jobs of certification and assessment of the stockpile with a new tool set, in which a major component will be large scale, complex simulations. It is critical that this group of designers and analysts validate that the new simulation tools allow them to continue to have confidence in the weapons even in the absence of underground testing. The ASCI is designed to provide this level of simulation capabilities in the time frame required.

Question. What are the annual funding levels assumed for ASCI over the next five years?

Answer. Funding for the ASCI program must be accommodated within the total funding available within the Weapons Activities Operation and Maintenance Five Year Budget Plan. The current outyear funding profile, as included in the fiscal year 1998 Congressional Budget Request, reflects the following funding for Weapons Activities:

Weapons Activities Operations and Maintenance

[In millions of dollars]

Fiscal year:	
1998	3,576
1999	3,497
2000	3,400
2001	3,362
2002	3,321

Defense Programs has not allocated explicitly outyear funding targets below the decision unit level at this time. Within the current five-year budget targets, ASCI is expected to remain level, at a minimum, with the possibility that some increases based upon overall Defense Programs priorities and program progress are possible within the outyear funding profile.

Question. The budget request represents a 35 percent increase of the level provided for 1997. Why is such a large increase needed in one year?

Answer. The budget request for ASCI is $204.8 million for fiscal year 1998. This represents an increase from $151.6 million in fiscal year 1997. While the increase of $53.2 million is significant, it is justified by the need to quickly develop advanced validated simulation capabilities required to support the ongoing assessment and certification. The increase is needed to support the additional work in the applications development, including the effort and manpower required to deploy an initial capability for a 3D safety simulation code by 1999. The increase will also support the deployment of the 3 trillion operations per second (Teraops) systems at Los Alamos and Lawrence Livermore National Laboratories and provide additional support for the Problems Solving Environments and Alliances Strategy.

Question. Have you been able to use the technologies and equipment developed to date to help solve current "real world" problems in the stockpile?

Answer. Yes, simulation capabilities have always played an important role in the assessment and certification of the nuclear stockpile. The Comprehensive Test Ban Treaty requires an increased reliance on those capabilities. Simulation has recently played an important role in resolving several stockpile issues without nuclear testing, including a question about the W76. It also provided critical information for the certification of the B–61 Mod 11. The advanced and accelerated simulation capabilities provided by ASCI will also play a critical role in ongoing stockpile programs such as the W87 life extension project, W76 recertification, and W88 pit rebuild. Finally, ASCI provides advanced simulation and computing capability on a continuing basis for assessment and certification. In the area of simulation, ASCI expects to bring on line a 3D safety code in the 1998 timeframe and add selected performance capability by 1999. The ASCI computer acquisition strategy has been coordinated with production computing to allow significant added capability for assessment and

certification using traditional, current 2D weapon codes. This strategy has significantly enhanced DP's capability to respond to stockpile issues in an era of no underground testing and with the increasing computer workload of the annual certification mandated by the President.

Question. Could you provide for the record how the $32.3 million increase for Advanced Applications will be used? Is the increase for hardware, software, manpower, etc.?

Answer. The increase in Advanced Applications will be used to support code development and validation at the national laboratories. Specifically these funds will be used for manpower needed to develop the physics models, computational methods, code development and validation of simulations.

Question. What would be the programmatic impact of receiving only a 15–20 percent increase in this activity?

Answer. The simulation capabilities to be provided under the current plan and funding request by ASCI in the near-term will significantly improve our ability to certify and assess weapons without testing. But it must be clearly understood that while near-term improvements enhance our capabilities and support stockpile life extension and enhanced surveillance objectives, we cannot accomplish the digital surrogate to underground testing until we have at least 100 TeraOps computational capabilities and the physics data and three dimensional models and simulations to address major complete components and small complete systems in a single comprehensive and integrated assessment. We need to sustain a level of investment over the long term to achieve the needed extensive weapon simulation capability supported by computer systems operating at least at 100 TeraOps before full system performance and safety simulations are possible. The ability to harvest the experience, knowledge and expertise of test savvy designers by 2004 (before significant retirements occur) is critical. The impact of receiving less than the request could be not just to delay the crucial input of test savvy designers, it could mean that we do not reach the threshold capability to do the primary job of virtual testing.

Since 1996, ASCI's first year of funding, the labs have been able to establish a minimal 3D, "full physics" simulation code development effort with a clear plan to "fill out" these code teams in the 1998 and 1999 timeframe. Limiting the growth of the Advanced Applications work to 15–20 percent ($11.2 million to $15.0 million) would significantly limit our ability to develop the simulation capabilities needed by 2004. Specifically, it would slow the pace of moving important simulation codes from 2D to 3D and limit the implementation of new physics in these codes. Most importantly it will limit the ability of the national laboratories to involve the "test-based" weapons analysts in validating the usability of these new simulation capabilities. Furthermore, limiting the growth could introduce or exacerbate programmatic vulnerabilities. These could include: added risk because validation efforts and some aging code development efforts are further delayed to sustain safety, reliability, and remanufacture code development efforts or added risk due to delays in developing strong computer partnerships.

There are several near-term stockpile issues in which advanced simulation capabilities will play a vital role. The ability to certify and assess projects like the W87 life extension, the W88 pit rebuild and the W76 revalidation will be negatively impacted by a decrease in the funds available to Advanced Applications. Ultimately, funding limitations or reductions could significantly undercut the ability to do adequate assessments of weapons issues or certifications.

Question. Why is it critical to receive a 55 percent increase in the Problem Solving Environment program?

Answer. The advanced simulation capabilities provided by ASCI are the result of a balanced program. In order for the simulations to be usable by designers and other users of advanced simulation to address weapon issues, and to be validated by "test-based" weapons analysts, the simulation capabilities must exist in a robust environment that provides advanced code development tools, high performance storage systems, state of the art visualization tools, and high speed data networks. The increase in the Problem Solving Environment provides these features in that environment. The increase is commensurate with the increase in the Applications Development and the delivery of the High Performance Computing Platforms. Even though the 55 percent increase seems large, the actual dollar amounts are relatively small ($13.1 million spread across the three laboratories). This program has adopted a strategy of using, leveraging, and adapting technologies available in the marketplace and the research community which allows significant work in a very cost effective way.

Question. What would be the programmatic impact of receiving only a 15–20 percent increase in this activity?

Answer. The impact of receiving a 15–20 percent ($3.6 million to $4.8 million) increase in Problem Solving Environment would be to adversely effect the balance of the program. A decrease in the growth of this area would slow the delivery of application development tools which are used by the Advanced Applications Program to efficiently program the advanced simulations. A decrease from the request would also limit the ability to deploy high performance storage systems and networks. The lack of data storage would mean the weapons analyst would effectively "compute and delete" reducing the performance per simulation and the overall stockpile assurance effort. Not deploying high performance data networks will result in higher costs in later years because ASCI could only remain in the mode of simultaneously keeping large computer systems close to the code developers and users at each laboratory, rather than advancing to geographically distributed systems where one or two high end peak capability computers could support the weapon laboratories.

Question. What level of funding is being requested for university and college based activities and how does it compare to the levels in 1996 and 1997?

Answer. An important strategy of the Stockpile Stewardship and Management Program is the teaming through ASCI of weapons laboratories, industry (particularly computer companies), and universities. Together these partners provide the current large lead (up to 100X) differentiation in simulation capabilities between the U.S. and the rest of the world. The support for the Strategic Alliances program allows the universities to work with the national laboratories to move the U.S. to an even greater lead and hopefully sustain this advantage (important economically as well as national security) for the foreseeable future.

The funding for the Alliances program is as follows:

[In millions of dollars]

Fiscal year	Level 1	Level 2
1996	2	3
1997	5	3
1998	11.5	3

Level 1 Alliances are focused on creating relatively large university projects to focus on developing the methodology and tools to create large-scale, complex, cross-discipline simulations relevant to nuclear weapons issues. These centers will not work in a classified environment and will not work directly on nuclear weapons issues. However, their work is expected to be physically verifiable and in areas relevant to weapon code development (e.g., high energy propellants or computational fluid dynamics), adding confidence to our use of comparable codes and algorithms that cannot be verified through underground test.

Level 2 Alliances projects are much smaller and are focused on near term deliverables for ASCI. These projects are solicited, reviewed and selected by a team consisting of the three laboratories plus Headquarters. The projects are expected to support a professor and a few graduate students to work on a very focused problem (i.e. radiation transport methods or parallel mathematical algorithms) at the cost of $100 to $300 thousand per year.

Question. How do these Centers contribute to the success of the ASCI program?

Answer. The ASCI program is taking simulation to new levels; the goal is digital proxy of the physical test. The Comprehensive Test Ban Treaty requires the DOE and national laboratories to rely on simulation to make predictions about the "real world" to a degree that was recently not thought possible. While the national laboratories are the prime source of scientific innovation to move simulation to this new level for weapons, there is general agreement that U.S. universities have a great deal to contribute. These contributions will take the form of new methodologies for creating cross disciplinary simulations, specific physics improvement, advanced computer science work, and advanced mathematical algorithms for parallel computers. Both the level 1 and level 2 elements of the ASCI program will tap into this source of scientific expertise to advance weapon-related simulation capabilities as well as to advance U.S. expertise in this critical national security and economic security technology area.

Question. How many new ASCI Strategic Alliances Centers are being considered?

Answer. There are currently no ASCI Strategic Alliances Centers. We are currently in the process of a competitive solicitation to select these Centers and expect to use fiscal year 1997 funds ($5 million) to start several centers, depending on funding constraints and balance with the other parts of the program. We are currently planning to have 4 to 5 Centers, each ramping up to $4 to $5 million per year for a 5-year period. Once those Centers have been selected, we will make a

long-term commitment to the universities involved and do not plan to start any new centers for at least 5 years.

Question. Are these Centers funded under multi-year funding agreements, and if so, how much funding would be needed over the next 5-years to support new alliances?

Answer. The Level 1 Alliances Centers will be funded by multi-year funding agreements with the proviso that future funds will only be provided if available. We are currently planning to have a few, 4 or 5 Centers, each ramping up to $4 to $5 million per year for a five-year period. The funding profile for the next five years is expected to be as follows and assumes that there is appropriate investment in the total ASCI program, particularly Advanced Applications and Platforms to support connecting the Alliances Centers' work to the weapons simulation and stockpile:

Level 1

[In millions of dollars]

1997	5.0
1998	11.5
1999	14.0
2000	20.0
2001	20.0
Total	70.5

Question. The One Program/Three Labs program is growing from a level of $1.0 million in 1996 to $8.5 million in 1998. Much of this appears to be activities of an outreach nature. What is the justification for this program expanding so rapidly?

Answer. The One Program/Three Labs program supports and enhances that technical interaction and provides information technology capabilities to tightly link planning and coordination of technical results among the laboratories and Headquarters. This is primarily an inreach effort rather than an outreach effort.

One Program/Three Labs is focused on supporting and facilitating the coordination and acceleration of technical work at the three labs. Funding is used to support technical meetings to present Principal Investigator results (PI meetings), technical workshops, an annual implementation planning process, the development of a simulation development roadmap and to hire outside technical experts to review and advise the ASCI program (not necessarily a single laboratory). Increases in this program are a reflection of the planned growth and accelerated pace of the program. ASCI is producing significant results in a very short time.

Question. What value do these programs add to the overall program success?

Answer. The One Program/Three Labs program is critical to the success of ASCI. In the past, if Defense Programs was faced with a difficult problem (like assessing and certifying the stockpile without underground testing), it would run a competition between the labs and select the best proposal. That laboratory would then have the chief responsibility to provide the technology innovations to produce a result (usually a weapon) which would be deployed. Never in the past has one project had the potential to significantly affect the way all three labs conducted their business. ASCI will do exactly that. Therefore it was understood very early that if the simulation capabilities that were to be provided by ASCI would be deployed at each laboratory, each laboratory would have to play a integral role in the development of the capabilities. It was also recognized that the simulation capabilities required for future stockpile stewardship were well beyond the ability of any one lab to produce.

ASCI therefore adopted the One Program/Three Lab approach which essentially identified areas where laboratory competition was appropriate (peer review requirements) and where it was not. ASCI then created a program plan and annual implementation plans to communicate program goals and projects across the three laboratories. This program has played a vital role in the delivery of accomplishments to date and will greatly assist in meeting the simulation goals required by the 2004 timeframe.

The Alliances Program provides access to key sources of independent validation and verification, including use of physical tests, of the efficacy of ASCI codes and simulations.

ADVANCED MANUFACTURING

Question. How do you explain the significant reduction in Advanced Manufacturing from last year?

Answer. The fiscal year 1998 request for Advanced Manufacturing within the Stockpile Stewardship program is actually a $2.2 million increase over the originally

planned fiscal year 1997 funding level. The Advanced Manufacturing budget was increased on a one-time basis by an additional $10 million by Congress in the final fiscal year 1997 appropriation.

Question. Does a reduction of this magnitude cause an adverse impact to the program?

Answer. The fiscal year 1998 funding level does not adversely impact the program. The program is budgeted and planned within available resources identified in the fiscal year 1997 and fiscal year 1998 funding requests. The additional dollars received in fiscal year 1997 made possible the completion of research that would otherwise have been deferred to a later date. The fiscal year 1998 funding request is in line with program priorities and mission needs.

Question. Are there critical activities which will not be funded?

Answer. The accomplishment of critical activities can take place within appropriated and planned funding levels. The program is set up to ensure that critical activities are accomplished first.

INERTIAL CONFINEMENT FUSION

Question. Does the budget request for fiscal year 1998 support the development and fabrication of the targets required by the five ICF labs? If not, why and how much additional funding is required in 1998 to develop, fabricate and produce those targets?

Answer. Yes. The fiscal year 1998 ICF budget request supports a fully integrated and prioritized program of ICF activities. Target technology development, fabrication, and deliveries are an integral part of that program and are to: (1) provide the targets needed for current year operations; and (2) perform the target technology research and development necessary to meet the outyear needs of the ICF program. In-house target fabrication and development is conducted, at varying levels, by all five laboratories (i.e., LLNL, LANL, SAL, UR/LLE, and NRL) and by a target support contractor (General Atomics, Inc.). This overall target effort is tightly integrated to reduce redundancies and maximize the utilization of the unique capabilities of the participants.

Question. How important is the work at the University of Rochester Laboratory of Laser Energetics to the success of the Stockpile Stewardship program in general, and the success of the NIF in particular?

Answer. The University of Rochester Laboratory for Laser Energetics (UR/LLE) plays an essential integral role in the Stockpile Stewardship program by providing continuity to the national ICF program and broadening its science base; by providing contributions to the NIF program; and by strengthening the links between the national laboratories and the educational and research strengths of the University of Rochester. Basic physics experiments can be carried out on the Omega facility that are of broad relevance to both ICF and nuclear weapons physics and effects. In support of the Stockpile Stewardship program, the UR/LLE is uniquely capable of imploding fuel capsules by the direct-drive method and can contribute as well to the indirect-drive method at significant energy levels. The Omega facility will be a suitable alternate to Nova for conducting high-energy-density experiments relevant to stockpile stewardship when Nova stops operations. From then until the NIF is completed, the Omega will be the only facility with the capability to implode cryogenic targets, a necessary condition for achieving fusion ignition. The viability of the direct-drive option for the NIF will be demonstrated on Omega, and it will provide invaluable experimental results in the development of the complex cryogenic target handling system for the NIF.

Question. Can the Omega laser system be fully utilized with the funding requested for fiscal year 1998?

Answer. The fiscal year 1998 funding requested for the Omega laser was increased to $23.6 million ($1.7 million over the fiscal year 1997 Appropriation), in order that the utilization of the Omega facility could be increased. This was the largest percentage increase requested for any of the ICF program participants. The essential role that Omega plays in the ICF program (i.e., supporting stockpile stewardship, the NIF and ultimately ignition) justifies the request for additional funds. However, the number of shots that can be provided at Omega is limited by funding.

Question. If additional funding were available, what are the priority program areas which should receive additional resources?

Answer. The funding request of $217 million is adequate; however, if additional funds were available to the ICF program, they would be used to increase the annual shot rate from 750 to 1000 shots on Omega; design and fabricate a tritium waste management system for Omega; and further reduce risk on specific laser and optics technology development which is currently underway for the NIF project.

DEFENSE ASSET ACQUISITION

Question. What, in your judgement, are the benefits and liabilities to be derived from moving to a fully funded concept for asset acquisition?

Answer. Moving to full funding for asset acquisition will have a number of benefits for the Department in general, and Defense Programs in particular. It will insure that Defense Programs is fully committed to each and every project that is in our budget. Full funding will also mean that we will no longer be able to argue that the annual appropriations process caused schedule delays or cost increases. Now we will be fully responsible for schedule delays and cost growth, and that should provide added incentive to get our planning right in the first place. And once we learn to take advantage of full funding, we should begin to see project schedules optimized to full funding, with expected cost savings. The disadvantage is that flexibility in the use of resources may be diminished depending on the funds control procedures implementing this policy.

Question. What is the proposed level of investment in acquisition of new facilities for Weapons Activities through 2002 based on incremental funding and the full funding concept?

Answer. The proposed level of facility investment for Defense Programs, DP's share of the Defense Asset Acquisition Account for the time period as provided in the fiscal year 1998 Five-Year Budget Plan for DOE Atomic Energy Defense Activities, is provided for the record.

DEFENSE PROGRAMS PROPOSED LEVEL OF FACILITY INVESTMENT

[In thousands of dollars]

Fiscal year	Incremental funding [1]	Full funding [2]
1998	468,195	1,502,395
1999	699,572	668,000
2000	703,164	244,000
2001	604,858	350,000
2002	257,759	187,000
Outyear Obligations of 5 Year BA	217,847	.....

[1] Obligation authority.
[2] New budget authority.

Question. Does the new full funding initiative provide a sufficient level of capital investment to support the Stockpile Stewardship and Management program in the outyears?

Answer. The outyear estimates for capital investments are sufficient to cover defined requirements and provide some amount for anticipated, but as yet unapproved, construction. Some Science-Based Stockpile Stewardship projects which may be necessary to enable stockpile evaluation and certification without underground testing, such as the Advanced Hydrodynamic Facility and the X–1 Pulsed-Power Facility, are not yet identified within the five year targets in our fiscal year 1998 budget. Our annual budget process will reevaluate the balance between funding provided for capital investments and that provided for operations and maintenance. Overall, Defense Programs is committed to providing for essentially all of the needs of the Stockpile Stewardship and Management program, except the acquisition of the new tritium source, within the "$40 billion over 10 years" envelope.

Question. Does the full funding concept guarantee that there will be no cost overruns for the projects?

Answer. Full funding will not prevent all cost overruns. The cost increases to the DARHT project resulting from the court injunction would not have been prevented by full funding. Nor will full funding stop us from adding scope to a project, and thus increasing its estimated cost, when doing so is programmatically and financially beneficial, such as occurred this year with the scope increases to the National Ignition Facility required to maximize the efficiency and usability of the facility and to insure the configuration of the finished facility does not preclude its use by the Department of Defense or by non-defense academic investigators.

Question. How, then, does full funding differ from incremental funding in providing certainty of project costs?

Answer. With full funding, we anticipate requesting funds only once for most projects, twice for large projects, and three times only for the largest of our projects. Accordingly, our cost estimating associated with Conceptual Design Reports and

Title I will need to continue to improve as we are essentially precluded from correcting the estimates.

DUAL-AXIS RADIOGRAPHIC HYDRODYNAMIC FACILITY

Question. Regarding the DARHT facility, the budget justification indicates that DOE has a study underway which will be the basis for selection of the best technology for the second axis accelerator. Why is DOE proceeding with the detailed design and long-lead procurement on the second-axis prior to completion of the Technology Options Study?

Answer. The Technology Options Study will be completed in April 1997 and a technology selection decision by the Department will be made later this year. Detailed design and long-lead procurement for the second-axis will not begin until fiscal year 1998, after the technology selection. Our fiscal year 1998 budget request assumes the use of the same technology as the first axis, pending final selection of the technology. If a different technology is selected, our fiscal year 1999 budget request will be adjusted to reflect the new technology requirements.

Question. What are the potential problems in assuming the use of the same technology as the first axis and then changing to some other technology?

Answer. A decision will be made on the selection of technology prior to the submission of the fiscal year 1999 Budget Request and before commencing any detailed design or long-lead procurement activities. Therefore, no problem with this strategy is anticipated.

Question. What are the potential cost impacts?

Answer. Detailed cost estimates for the second-axis accelerator will not be available until after the technology selection decision is made, later this year. If it is determined that adding multi-pulse capability (considered highly desirable to meet science-based stockpile stewardship requirements) is technologically feasible, additional funding may be required in the amount of $10 to $20 million.

PROCESSING AND ENVIRONMENTAL TECHNOLOGY LABORATORY

Question. What would be the impact on the costs and schedules if the $29.8 million requested in the budget to fully fund the Processing and Environmental Technology Laboratory at the Sandia National Laboratory in New Mexico were not provided?

Answer. Following the full funding concept, the $29.8 million we have requested in fiscal year 1998 is Budget Authority to fully fund the Processing and Environmental Technology Laboratory. We have not identified additional obligational authority in fiscal year 1998 and would plan to continue the project in fiscal year 1998 with obligational authority already available. Therefore, there would be no impact on cost and schedule by deferring the $29.8 million Budget Authority until fiscal year 1999. An independent cost estimate (ICE) of the Title I preliminary design is now underway to ensure that the estimated cost is compatible with the scope contained in the preliminary design. Our fiscal year 1999 Congressional Budget request will update, if necessary, the planned obligation and cost schedule.

ATLAS

Question. Is the ATLAS project at the Los Alamos Lab proceeding on schedule and have the problems related to installing the equipment in a different building been resolved?

Answer. The ATLAS project is well underway and proceeding on schedule. The change in building location is completely resolved and has had no impact on the execution of this project.

SUBCRITICAL EXPERIMENTS AT THE NEVADA TEST SITE (NTS)

Question. What are subcritical experiments, and what makes the distinction between subcritical and critical?

Answer. The subcritical experiments planned by the Department at the Nevada Test Site are scientific experiments to obtain technical information needed for Stockpile Stewardship. They will involve high explosives and nuclear weapon materials, such as plutonium. In a subcritical experiment, the high explosive will be detonated to create high pressures similar to those achieved in the early non nuclear stages of a nuclear weapon; however, the configuration and quantities of materials will be such that nuclear criticality cannot be reached. Technical reviews to confirm this have been completed by two laboratories and by an outside group (the JASON's). In their review of these experiments, the JASON's concluded that "* * * these particular experiments will add valuable scientific information * * * and that there is

no conceivable scenario in which these experiments lead to criticality." This means that there will be no self-sustaining nuclear chain reaction in the experimental assembly and any nuclear reactions will die out. In a critical or supercritical system, a self-sustaining nuclear chain reaction can be created and large amounts of energy can be released from nuclear processes.

Question. Can you give the committee a layman's example of the magnitude of force or energy that is given off from one of these experiments?

Answer. Essentially all of the energy from these experiments is due to the high explosives that are detonated. In the first planned experiment, which will get equation of state data on plutonium, about 160 pounds of high explosives will be detonated, an amount comparable to that used in road construction for removal of a small hill. The second planned experiment, which will measure ejecta mass distributions in shocked plutonium, is much different than the first in that a smaller quantity of explosives is required: less than a quarter of a pound or the amount in several large firecrackers. There will be no measurable amount of nuclear fission energy released in these experiments. Future subcritical experiments are expected to have an energy release in about the same range.

Question. How important are these experiments to the Stockpile Stewardship strategy? Please explain.

Answer. These experiments are very important to the Stockpile Stewardship Program mission. They will provide needed data for assessing nuclear weapons performance and safety via advanced computer simulation. The accuracy and credibility of these computer simulations will be significantly improved by conducting these subcritical experiments. They will provide necessary benchmark data on the high pressure behavior of weapons materials, the hydrodynamics of weapons components, the effects of aging on materials, and the effects of remanufacturing techniques.

The experiments will also provide mechanisms to meet the requirements of the Presidential Directive to maintain nuclear test readiness capability. These experiments require, and thereby help to maintain, many of the operational skills needed for an underground nuclear test, including those related to the site, facilities, equipment, and skilled personnel.

Question. Does the Science-Based Stockpile Stewardship plan approved by the President specifically include subcritical experiments?

Answer. The President has directed the Department of Energy to implement a program of Science-Based Stockpile Stewardship (SBSS); however, he did not specify program details. Subcritical experiments play an important role in the SBSS program. Thus, they are included in the Department's Stockpile Stewardship and Management Plan as a fundamental component of SBSS.

Question. Briefly review why DOE has not conducted subcritical experiments planned for fiscal year 1996 and fiscal year 1997, and the current situation regarding DOE ability to conduct these experiments during the remainder of 1997 and fiscal year 1998?

Answer. The first two experiments were originally scheduled to have been conducted in June and September of 1996. Both experiments were delayed in order that the Nevada Test Site Sitewide Environmental Impact Statement (SWEIS) could be completed and a Record of Decision (ROD) issued. Secretary O'Leary issued the ROD on December 9, 1997 that identified DOE's plan to conduct subcritical experiments as part of the Science-Based Stockpile Stewardship (SBSS) program. More recently, certain transparency related issues were being discussed and coordinated through the interagency process. These issues have been resolved through interagency staff and final efforts are underway to obtain approval from the new Secretary of Energy and the White House to proceed with the experiments. Secretary Peña has already expressed his support for these experiments. Once all outstanding issues are resolved, it should take approximately 10 to 12 weeks to conduct the first experiment with the second to follow about 8 weeks later. Thus, two experiments are expected to be completed in fiscal year 1997. Four additional tests are planned for fiscal year 1998.

The Secretary of Energy issued a statement regarding the schedule for subcritical experiments on April 4, 1997. The statement follows as an update for the record.

STATEMENT OF THE SECRETARY OF ENERGY FEDERICO PEÑA ON THE SCHEDULE FOR SUBCRITICAL EXPERIMENTS

At the United Nations last year, as the first world leader to sign the Comprehensive Test Ban Treaty, President Clinton firmly committed the United States to the pursuit of a world free of nuclear testing, observing that this treaty was the culmination of the work of American Presidents—both Republican and Democrat—over the past four decades.

When the President made the decision to pursue a zero yield Comprehensive Test Ban Treaty, he stated that, even in the absence of nuclear testing, we would maintain "strategic nuclear forces sufficient to deter any future hostile foreign leadership from acting against the interests of the United States." The President also declared that the maintenance of a safe and reliable nuclear weapons stockpile is a necessary condition for U.S. entry into a Comprehensive Test Ban Treaty.

Maintenance of a safe and reliable nuclear weapons stockpile is the direct responsibility of the Department of Energy (DOE). To this end, we are announcing today a schedule for subcritical experiments—an essential component of the Department's program for ensuring the safety and reliability of the stockpile. The first in a series of these experiments is now scheduled for June 1997, with a second similar experiment to follow sometime this fall.

Over many decades, a group of distinguished scientists known as the JASON's has provided the U.S. Government independent, expert analyses in defense and arms control issues. At the request of the Department of Energy, the JASON's conducted a review of the designs of the Department's first two subcritical experiments. In a January 1997 letter transmitting this review to Acting Secretary of Energy Charles Curtis, the JASON's concluded that "these particular experiments will add valuable scientific information to our database relevant to the performance of our nuclear weapons, and that there is no conceivable scenario in which these experiments lead to criticality." Yesterday, the JASON's formally released their report.

Subcritical experiments are essential to our commitments to a world free of nuclear testing and a reliable nuclear deterrent and are fully consistent with the CTBT. In addition, these experiments complement other elements of DOE's Stockpile Stewardship and Management program such as the National Ignition Facility and the Accelerated Strategic Computing Initiative—additional tools which will help supply the confidence in stockpile safety and reliability the President has required in order to support the CTBT.

The Comprehensive Test Ban Treaty represents an advancement of peace and security for the American people. It is a clear demarcation between the Cold War Era and the post-Cold War world: between a runaway arms race, fear of nuclear proliferation and concern about environmental degradation—and increased stability, enhanced security and ongoing international cooperation. The Department of Energy is proud of its contribution toward these important national and international goals.

Question. Are there any obstacles preventing DOE from conducting subcritical experiments in 1997?

Answer. We know of no obstacles that would prevent the Department from conducting the two experiments planned for fiscal year 1997.

SUBCRITICAL EXPERIMENTS AT THE NEVADA TEST SITE

Question. How much funding was appropriated for subcritical experiments in fiscal year 1996 and fiscal year 1997?

Answer. The fiscal year 1996 funding required to plan and prepare for the subcritical experiments was approximately $40 million. The fiscal year 1997 estimate for all costs associated with the subcritical experiments is approximately $60 million. Although not specifically identified in a discrete budget line, the funds for the Nevada support of the experiments were requested within the Test Capabilities and Readiness category of Core Stockpile Stewardship. The funds for the laboratory support of the experiments were requested in the Experimental Activities portion of the Programs and Initiatives category of Core Stockpile Stewardship as well as the Design Assessment Science and Technology portion of the Research and Advanced Technology category of Core Stockpile Stewardship.

Question. Since those experiments were not conducted, how were the funds appropriated for the experiments used?

Answer. The department requested and received funding to conduct "experiments to demonstrate and exercise capability * * *." No funding was specifically appropriated for only subcritical experiments. When the Secretary determined that it was necessary to postpone these experiments, actions were taken to put the first two planned experiments in a semi-operational state so they could be restarted and completed when the go-ahead was given without significant additional technical delay or rebuild and restart costs. Rather than abandoning the experimental site, the diagnostic and other scientific equipment for the experiments was preserved in a way that degradation would not result from the hiatus and the underground complex was also maintained. In addition, in this time period, the Department conducted two overall operational exercises for the experimental teams and several other "dry-runs" and trials have taken place to assure that staff and equipment are in good condition. Not only will these activities benefit future experimental efforts at the

NTS, but they have also served to reinforce and demonstrate our readiness to conduct a nuclear test if that were required. Finally, planning work and diagnostic development was begun on the technical aspects of future experiments to optimize their value in expectation that the go-ahead for them would be forthcoming.

Question. How much funding is included in the fiscal year 1998 budget for subcritical experiments?

Answer. The fiscal year 1998 estimate for all costs associated with the subcritical experiments is approximately $80 million. Although not specifically identified in a discrete budget line, the funds for the Nevada support of the experiments were requested within the Test Capabilities and Readiness category of Core Stockpile Stewardship. The funds for the laboratory support of the experiments were requested in the Experimental Activities portion of the Programs and Initiatives category of Core Stockpile Stewardship as well as the Design Assessment Science and Technology portion of the Research and Advanced Technology category of Core Stockpile Stewardship.

FUNDING FOR STOCKPILE MANAGEMENT

Question. Is the budget of $2.0 billion for Stockpile Management sufficient to undertake the critical work required to reshape the manufacturing complex in 1998 without adverse impact on the capability of the complex to respond if required?

Answer. Within the Stockpile Management budget of $2.0 billion, the Stockpile Management Restructuring Initiative will be funded in fiscal year 1998, at $17.5 million to support engineering design activities at the Y–12 Plant and the Savannah River Site. Additional funding is included within operations and maintenance to continue conceptual design activities in preparation for initiation of construction project line items in fiscal year 1999. The Stockpile Management Restructuring Initiative will support the implementation of Departmental decisions related to facility downsizing or relocation of missions. This initiative will reduce unnecessary infrastructure cost which take away dollars to perform weapon workload. The Stockpile Management Restructuring Initiative maximizes rightsizing while downsizing. By rightsizing, the Department will maintain a capability to increase capacity to respond, within broad limits, to stockpile problems. Additionally, the budget includes $103.2 million for ADaPT to pursue emerging technologies in agile manufacturing, enterprise integration, and production process improvements.

Question. What are the critical problems or issues facing the production complex and how does this budget address those concerns?

Answer. Certain weapon life extension programs are very dependent on the Department's ability to conduct enriched uranium operations. The Department's facility for uranium operations resides at the Y–12 Plant in Oak Ridge, Tennessee. The enriched uranium operations at the Y–12 Plant have been shut down since 1994. In fiscal year 1998, $27.8 million will be provided toward reestablishing an enriched uranium capability. A resumption of activities plan is underway at Y–12 and on schedule but not without risk. The Department is keeping a close eye on resumption of operations progress and associated cost.

STOCKPILE MANAGEMENT

Question. How successful have you been in integrating the Stockpile Stewardship and Stockpile Management Programs?

Answer. The Department's Stockpile Stewardship and Management Program is a single, integrated technical program designed to ensure the continued safety and reliability of the nuclear weapons stockpile without underground testing. Stockpile Stewardship is a broad, forward looking set of capabilities, which include research, design, development and testing needed to help DOE and its laboratories assess and certify the continuing safety and reliability of the stockpile. Stockpile Management activities are the day-to-day manufacturing and surveillance operations required to support the stockpile. The completion of the first annual update of the Stockpile Stewardship and Management Plan (Green Book) reflects the success at integrating these two programs. The primary measure of the success of integrating Science-Based Stockpile Stewardship and Stockpile Management is the completion of the first annual certification of the stockpile. In this certification the Secretaries of Defense and Energy, after an extensive review by experts within government and at the national laboratories, affirmed that the Nation's stockpile remains safe and reliable, and that a return to underground nuclear testing is not required at this time.

Question. How much of the $131 million increase was allocated to the national labs and how much went to the production complex?

Answer. In addressing this question, it is important to recognize that the Stockpile Stewardship and Management Program is a single, highly integrated technical

program for maintaining the safety and reliability of the U.S. nuclear stockpile. Traditionally, the activities of the national laboratories and the Nevada Test Site have been regarded somewhat separately from those of the weapon production plants. However, although they remain separate budget decision units within Weapons Activities, all stockpile stewardship and management activities have achieved a new, closer linkage. For instance, the Sandia National Laboratories and Los Alamos National Laboratory have picked up critical manufacturing functions previously conducted at the Mound, Pinellas and Rocky Flats Plants. The fiscal year 1997 congressional add-on of $130 was allocated in the following manner: $74.6 million was divided among the traditional production complex consisting of the Kansas City Plant, the Pantex Plant, the Y–12 Plant and the Savannah River Site; $43.7 million was distributed to the national laboratories; and $11.7 million was allocated between the Idaho National Engineering and Environmental Laboratory and Pacific Northwest Laboratory.

Question. What criteria was used to determine how the additional funding would be allocated?

Answer. The Conference Report accompanying the Energy and Water Development Bill for fiscal year 1997 provided direction that the additional funding be allocated for new tritium source activities, enhanced surveillance, advanced manufacturing, and upgrades for the tritium recycling facility at Savannah River. Therefore, the additional funding was allocated consistent with requirements and milestones outlined in Departmental programmatic plans including the Enhanced Surveillance Program Plan, the Advanced Design and Production Technologies Plan, and the dual-track approach for a new tritium supply.

Question. Provide breakout for the record which shows how the increase over the budget request for Stockpile Management and Stewardship was allocated by site.

Answer. The increase over the budget request by site is shown in the following table, which I would like to insert in the record. The information follows:

Site Allocations of Fiscal Year 1997 Appropriations

[In millions of dollars]

Kansas City	13.8
Pantex	14.6
Y–12 Plant	24.1
Savannah River Site	23.4
Subtotal Plants	75.9
Richland/Pacific Northwest Laboratory	13.0
Idaho	5.9
Albuquerque	(25.1)
Headquarters	6.4
Community Assistance	22.6
Nevada	(3.8)
Oakland	(0.8)
Oak Ridge	0.1
Lawrence Livermore National Laboratory	17.7
Los Alamos National Laboratory	46.8
Sandia National Laboratories	42.5
Total	201.2

Question. The budget proposes a 10 percent reduction in operations funding for the Core Stockpile Management program. How do you explain this reduction and does it concern you?

Answer. The budget request for Core Stockpile Management operations and maintenance is $46 million (3.5 percent) below the fiscal year 1997 appropriation for operations and maintenance. This decrease reflects savings from program progression in nonnuclear reconfiguration, the nonrecurring payment in fiscal year 1997 of pension plan/sales tax liabilities associated with the Mound and Pinellas Plants, and the reduction of approximately 350 personnel at the Pantex Plant in fiscal year 1997. We believe the funding request for Core Stockpile Management is sufficient to support critical workload activities and to ensure operation of the complex in a safe, secure, and environmentally sound manner.

Question. Is this something the committee should be concerned about as it relates to the ability of the production complex to respond if required?

Answer. The fiscal year 1998 budget request for Defense Programs represents a balanced program between Stockpile Stewardship and Management programs. It

protects core program requirements including critical workload activities and operation of the complex in a safe, secure, and environmentally sound manner; as well as supporting critical initiatives including Tritium Production, Enhanced Surveillance, Advanced Manufacturing, Design and Production Technologies and the Accelerated Strategic Computing Initiative.

Question. A significant part of the reduction below the 1997 level is made up of a $45.1 (20 percent) decrease in Management and Administration. What is the impact of this reduction in terms of people and programs?

Answer. The decrease of $45.1 million from fiscal year 1997 in the Management and Administration program is primarily reflective of the nonrecurring payment in fiscal year 1997 of pension plan/sales tax liabilities associated with the Mound and Pinellas Plants. The decrease also recognizes a pro rata share of downsizing efforts at the Pantex Plant in fiscal year 1997. We also continue to streamline overhead activities in the complex to assure maximum productivity from the funds available to us.

Question. Please provide a detail breakout of what makes up the $45.1 million reduction.

Answer. The detail on the $45.1 million reduction in the Management and Administration program follows:

[In millions of dollars]

Mound and Pinellas Plant Pension Liabilities	−39.0
Downsizing of the Pantex Plant	−3.2
Contractor Streamlining Adjustment	−7.9
Increase for the National Resource Center for Plutonium	+5.0

Question. How much is included for the National Resource Center for Plutonium?

Answer. The budget request for Core Stockpile Management includes $5 million in fiscal year 1997 and $10 million in fiscal year 1998 under the Management and Administration program to support the National Resource Center for Plutonium.

STOCKPILE MANAGEMENT

Question. Could you provide a brief explanation of the Center's activities, including the specifics on the DOE responsibilities for funding Center activities?

Answer. The National Resource Center for Plutonium was established to demonstrate the Department of Energy's interest in protecting the environment, safety, and health of populations adjacent to its sites and to provide financial assistance to the State of Texas to facilitate the execution of the State's responsibilities to its citizens and the public in general. The Center has created six task areas in which it conducts activities related to the objectives of the Cooperative Agreement. The task areas are: (1) plutonium information resource; (2) advisory function; (3) environmental, public health and safety; (4) communication, education and training; (5) nuclear and other material studies; and (6) administrative support. As outlined in the Cooperative Agreement, the Department is responsible for providing $49 million in funding over a 5-year period from fiscal year 1995 through fiscal year 1999, providing $9 million in funding in fiscal year 1995 and providing $10 million in funding for each subsequent funding year. The State of Texas is responsible for providing $2.45 million in funding over the 5-year period.

Question. If there is a memorandum of agreement covering funding of the Center, please provide that for the Record.

Answer. There is no memorandum of agreement covering funding of the Center; however, provided for the record is a copy of the "Protocol for Department of Energy Administration of Cooperative Agreement DE–FC04–95AL85832 with State of Texas."

PROTOCOL FOR DEPARTMENT OF ENERGY ADMINISTRATION OF COOPERATIVE AGREEMENT DE–FC04–95AL85832 WITH STATE OF TEXAS

INTRODUCTION

Cooperative Agreement DE–FC04–95AL85832 (the Agreement) provides for Department of Energy financial assistance to the State of Texas (Texas). Under the terms of the Agreement, Texas will provide administrative and fiscal oversight in the performance of mutually agreed-to tasks and functions as outlined in the Project Management Plan.

Tasks to be performed under the Cooperative Agreement will facilitate the exercise of the State's responsibility to protect the health and safety of its citizens and its environment, and will assist the Department of Energy in carrying out the missions of the Pantex Plant. Examples of activities include conducting public and sci-

entific outreach programs on health and environmental effects of plutonium and other weapon materials, engaging in studies of the behavior of weapon materials in environmental media, performing environmental characterization and measurements, and assisting in emergency preparedness with respect to the Pantex Plant and surrounding environment.

Examples of activities of interest to the Office of Fissile Materials Disposition may include coordinating advisory groups, hosting international conferences, and technical activities relating to long-term storage and disposition of weapons-useable fissile materials.

The Offices of the Department of Energy that participate in the administration of this Agreement are:

—Albuquerque Operations Office
  —Contracts and Procurement Division, through the Contracting Officer.
  —Amarillo Area Office.
  —Weapons Quality Division, through the Nuclear Technology Programs Manager.
—The Office of Military Application and Stockpile Management, DP–20, through DP–24.
—The Office of Fissile Material Disposition, MD–1, through the Technical Director as may be determined following publication of the Record of Decision on the Programmatic Environmental Impact Statement on Storage and Disposition of Weapons-usable Fissile Materials.

DEFINITIONS

Program refers to the program responsibilities of the Headquarters Program Offices, DP and MD. Programmatic review is accomplished to ensure consistency with Headquarters' program(s).

The Project is collectively all of the activities funded under the terms of the Agreement. The Project Management Plan, Appendix I of the Agreement, establishes the scope of the Project.

A Task is a specific work element within the project, and defines work to be performed, deliverables, schedule, and associated cost. Annually, Texas provides their proposed Technical Task Plan for the coming fiscal year. This document, titled Continuation Application for the Amarillo National Resource Center for Plutonium, contains top-level descriptions, deliverables, and costs associated with tasks.

Supplemental Task Plans are typically two-page statements of specific work to be performed, schedules, and associated costs and contain more task detail than the broad overview information contained in the Continuation Application.

Technical Monitors are appointed by the Contracting Officer's Representative at the Amarillo Area Office and are responsible to monitor progress and completion of technical tasks, and on the basis of substantial observations, review and approve allocations to Texas in support of the terms of the Agreement.

The Technical Liaison is appointed by Weapons Quality Division and is responsible for liaison with the National Laboratories to ensure that there is no duplication of effort represented in the tasks approved for funding under the terms of the Agreement. The Technical Liaison will also be cognizant of opportunities for collaboration between the Amarillo National Resource Center for Plutonium, the Principal Investigators identified in the task plans, and the National Laboratories.

PURPOSE

The purpose of this protocol is to establish the roles, responsibilities, and functions of the several DOE offices in the administration of this Agreement.

ALBUQUERQUE OPERATIONS OFFICE

Contracts and Procurement Division

1. Performs Contracting Officer functions within delegated authority limits.
2. Appoints and delegates authority to Contracting Officer Representatives for specific contract administration functions.
3. Ensures that Department funds with respect to this agreement are obligated.
4. Ensures that deliverables meet the administrative specifications of the Agreement.

Amarillo Area Office (AAO)

1. Serves as Contracting Officer's Representative (COR). In this capacity provides technical direction for execution of the Agreement, consistent with programmatic requirements of the Department and the Project Management Plan. Provides guidance

to Texas regarding value to DOE of individual task proposals and the overall program content.

2. Designates technical monitors for specific tasks performed under the Agreement. Responsible to review and approve allocations to Texas in support of the terms of the Agreement.

3. Ensures that the financial obligations of the Department with respect to the Agreement are represented in the Amarillo Area Office budget.

4. Reviews budget withdrawals from the U.S. Department of Health and Human Services System to Texas, in accordance with terms of the Agreement.

5. Ensures that deliverables meet the technical specifications of the Agreement as defined in detailed supplemental task plans.

6. Schedules and coordinates annual project review meetings.

7. Reviews and coordinates performance of tasks that support the mission of the Pantex Plant including the programmatic and technical issues forwarded from all interested parties.

8. Proposes or requests tasks to be performed under the Agreement.

9. Participates in project review meetings.

Weapons Quality Division

1. Supports technical responsibilities of the COR. Ensures that task proposals are unique and not duplicative of ongoing programs at DOE laboratories. Identifies collaborative opportunities for tasks in association with DOE laboratory programs.

2. Reviews budgets and supporting task plans submitted by the Center to ensure that the Center's activities are consistent with the joint objectives and the Project Management Plan specified in the agreement. Consolidates comments and suggestions regarding programmatic and technical issues and forwards results to the COR.

3. Reviews and approves the Annual Technical Task Plan (Continuation Application) and any mid-year revisions in coordination with DP–24, MD–1, AAO, and DOE laboratories as appropriate.

4. Provides technical review of the Continuation Applications and Supplemental Task Plans submitted by the Amarillo National Resource Center for Plutonium prior to approval of the Continuation Application.

5. Serves as technical liaison for the AAO concerning work to be performed under the Agreement.

6. Proposes or requests tasks to be performed under the Agreement.

7. Participates in project review meetings.

OFFICE OF MILITARY APPLICATION AND STOCKPILE MANAGEMENT, DP–20, DOE HEADQUARTERS

1. Requests and reviews detailed Supplemental Task Plans prior to recommending approval of the Annual Technical Task Plan.

2. For those tasks of interest to DP–20, responsible to review and recommend approval of budgets and supporting task plans submitted by the Center to ensure that the Center's activities are consistent with the joint objectives and the Project Management Plan specified in the Agreement.

3. Ensures that funds are identified to Albuquerque Operations Office to support approved tasks of interest to the Office of Defense Programs being performed under the Agreement.

4. Consults with technical liaison regarding proposed tasks to be performed under the Agreement.

5. Proposes or requests tasks to be performed under the agreement.

6. Participates in project review meetings.

OFFICE OF FISSILE MATERIALS DISPOSITION, M–1, DOE HEADOQARTERS

1. Requests and reviews detailed Supplemental Task Plans prior to recommending approval of the Annual Technical Task Plan.

2. For those tasks of interest to MD, responsible to review and approve budgets and supporting task plans submitted by the Center to ensure that the Center's activities are consistent with the joint objectives and the Project Management Plan specified in the Agreement.

3. Ensures that funds are identified to Albuquerque Operations Office to support approved tasks of interest to the Office of Fissile Material Disposition being performed under the Agreement.

4. Consults with technical liaison regarding proposed tasks to be performed under the Agreement.

5. Proposes or requests tasks to be performed under the Agreement.

6. Participates in project review meetings.

JOINT INTEREST TASKS

The arrangements in fiscal year 1997 for sponsorship and administration of tasks in which both DP and MD have a shared interest will be resolved on a case-by-case basis by the respective Headquarters program offices.

Programmatic issues associated with tasks to be performed under the agreement in fiscal year 1997, in which both DP and MD have a shared interest, will be resolved by the involved Headquarters program offices.

SIGNATURES

The following parties agree that the foregoing definition and assignment of roles and responsibilities is appropriate and will be used in administering the subject Cooperative Agreement with the State of Texas. Any changes desired will be negotiated with all parties and documented in subsequent revisions of this protocol.

Richard W. Brown

For Thomas P. Seitz Date 10/25/96
Deputy Assistant Secretary for
Military Application and Stockpile
Management, Office of Defense Programs

Gregory P. Rudy Date 11/12/96
Director
Office of Fissile Materials Disposition

Bruce G. Twining Date 10/6/96
Manager
Albuquerque Operations Office

CHEMICAL AND BIOLOGICAL WEAPONS NONPROLIFERATION PROGRAM

Question. The Committee earmarked $17 million for DOE to undertake an R&D Program related to detection of materials used in making Chemical and Biological weapons. How much funding has been allocated for this effort in 1997, and what funding level is requested for fiscal year 1998?

Answer. The Department has allocated the full $17 million earmarked in fiscal year 1997 to the Chemical and Biological Weapon Nonproliferation Program. This program is focused on the development of technologies and capabilities to detect the transportation, production, and use of chemical and biological agents and their precursors. The Department has requested $23 million in fiscal year 1998, $19 million for continuing research and development and $4 million allocated to supporting emergency management activities.

Question. Briefly discuss the various Chemical and Biological activities, including funding levels, underway in DOE and other Federal agencies.

Answer. There are numerous Federal agencies involved in chemical and biological defense activities. In particular, the Department of Defense and the Intelligence Community have lead roles in this arena within the United States Government. I cannot, at this time, provide detailed information on the nature and extent of other agencies' programs and associated funding levels. However, these programs are significant and we are working closely with all appropriate agencies.

The Department of Energy's (DOE) Chemical and Biological Nonproliferation Program (CBNP) was initiated in 1997 in response to an appropriation of $17 million in the Energy and Water Development Appropriations Act of 1997. This appropriation acknowledged the concern over chemical and biological weapon proliferation and the recognized technical capabilities of the DOE laboratories. The DOE has a long history in the chemical and biological sciences with present programs estimated at greater than $1 billion annually.

The fiscal year 1997 CBNP program is focused on research and development. The program for later years anticipates expansion into threat assessment and training and operations areas.

The CBNP addresses common issues across the nonproliferation area with program elements supporting incident response, military operations, policies and treaties, and intelligence. The program was formulated by identifying the overlap between gaps in existing technologies and DOE laboratory competencies that if successfully addressed would provide unique leverage. The program was coordinated with multiple agencies representing technology developers as well as the end-users

of the technologies (e.g., Department of Defense, Federal Bureau of Investigation, Federal Emergency Management Agency, Public Health Service, etc).

The fiscal year 1997 program focuses on four key areas:

(1)Fundamental Biology which addresses key issues for other technical areas, particularly detection and attribution;

(2) Detection which involves development of multiple detection technologies with an emphasis on biological detection and identification;

(3) Transport Modeling which involves development of transport models particularly for complex urban areas; and

(4) Decontamination which involves development of rapid, environmentally benign decontamination technologies.

In the area of Fundamental Biology, DOE's capabilities derived from the human genome program are being leveraged to determine the detailed molecular function and structure of potential biological threat agents. Additionally, in conjunction with the Center for Disease Control, we are participating in the development of capabilities to detect exotic or newly emerging diseases on a global scale. Funding in this area is $5 million in fiscal year 1997 and the budget request for fiscal year 1998 is $5.5 million.

In the Detection area, we are working to develop highly sensitive, highly specific, and low cost detection systems for identifying exposures to biological agents of concern. It is hoped that these detectors will rapidly provide first responders information about the nature and extent of the agent(s) used in an attack. We are drawing on DOE'S substantial experience in DNA-based detection technology to provide a new generation of fieldable, highly-sensitive detectors that can identify different bigstrains as well as detect bio-engineered threats. We are also leveraging DOE capability in micro-engineering and the chemical sciences to develop miniaturized sensors ("chemical lab-on-a-chip") to detect toxins and chemical agents. We are also investing in work to determine how stand-off detection (from up to kilometers away) may be used to identify chemical or biological agents. Funding for sensor development is $8.3 million in fiscal year 1997 and the budget request for fiscal year 1998 is $9.8 million.

In the area of Transport and Fate Modeling in fiscal year 1997, we are building on DOE's large-scale computer and modeling capabilities to evaluate, develop and apply models for predicting the dispersal of chemical and biological agents released in the atmosphere in open terrain, within cities, and within structures such as buildings and subways. The information thus generated will be used to define fundamental design criteria for detection technology (e.g., required sensitivity and range), to support operational response planning, training, exercises, and the development of concepts of operation for first responders.

In fiscal year 1998 we are including an upgrade to DOE's Atmospheric Release Advisory Capability to include the capability to provide near-real time predictions of chemical and biological agent releases and their effects. Although this capability has broad application to industrial accidents, it will be particularly useful to provide real time assessment of potential terrorist attacks focused on chemical plants or biofacilities near or embedded within population centers. Funding for Transport and Fate Modeling is $1.7 million on fiscal year 1997, and the budget request for fiscal year 1998 is $2.7 million.

In the area of Decontamination we are focusing on Department of Defense and incident response needs for rapidly deployable, environmentally benign decontamination technologies. These technologies include foams, catalytic sorbents and low temperature plasmas, and are focused on recognized needs in the areas of decontamination of facilities and sensitive equipment. Funding for fiscal year 1997 in the area of Decontamination is $2 million, and the budget request for fiscal year 1998 is $2 million.

The area of Threat Assessment is a proposed new program element for fiscal year 1998. DOE intends to integrate chemical and biological threat assessment capabilities into DOE's existing nuclear threat assessment capabilities in fiscal year 1998. This effort has been coordinated with and will be executed in conjunction with the Department of Defense, the Intelligence Community, and the FBI. In addition to addressing chemical and biological threats directed at critical DOE facilities, this capability will be made available to address the broader range of chemical and biological terrorist threats. No funding was provided for the Threat Assessment area in fiscal year 1997. The budget request for this area in fiscal year 1998 is $2 million.

The area of Training and Operations is a proposed new program element for fiscal year 1998. This effort will support DOE's participation in scenario development, exercises and training in conjunction with the Department of Defense, Director of Military Support and the Chemical and Biological Defense Command. This will ensure that DOE's unique requirements are addressed and that DOE leverages the Depart-

ment of Defense's efforts in this area. No funding was provided for the Training and Operations area in fiscal year 1997. The budget request for this area in fiscal year 1998 is $1 million.

Question. How are DOE programs coordinated with other Federal agencies in order to eliminate duplication of effort?

Answer. The Department's Chemical and Biological Weapons Nonproliferation Program was configured with full participation and review from the user and technical communities. Three criteria were used to develop the DOE Program: DOE should address high priority gaps in the United States Government's capability to counter proliferation of chemical and biological weapons, the DOE program should be complimentary to, rather than duplicative of ongoing efforts, and the DOE program should leverage existing DOE capabilities and strengths.

Based on these criteria, the Department of Defense, the Intelligence Community and elements of Law Enforcement and the Incident Response Community reviewed the DOE Laboratories' core capabilities and recommended areas where DOE could provide unique, high leverage support to address gaps in capability. The user community also acted in an advisory capacity to the DOE in the selection of the multilaboratory teams chosen to execute the R&D program and jointly reviewed the proposed program.

The DOE program was reviewed by the Counterproliferation Review Committee (CPRC) Standing Committee and will be included in the CPRC fiscal year 1997 Report to Congress. This Committee, composed of representatives from the Department of Defense, DOE and the Intelligence Community and chaired by the Deputy Secretary of Defense, is responsible for coordinating the Nation's efforts to develop capability to counter the proliferation of nuclear, chemical and biological weapons. We will continue to rely on the CPRC to ensure the DOE Program is included in the interagency coordination process.

Question. Provide a crosswalk for the record showing the level of funding for 1997 and 1998 for the various programs and activities involved in the Chem./Bio. Effort.

Answer. Funding for the Chemical and Biological Weapons Nonproliferation Program is $17 million for fiscal year 1997. The budget request for this program for fiscal year 1998 is $23 million. The crosswalk for fiscal year 1997 and fiscal year 1998 funding is as follows:

CHEMICAL AND BIOLOGICAL WEAPONS NONPROLIFERATION PROGRAM FUNDING INFORMATION FOR FISCAL YEAR 1997 AND FISCAL YEAR 1998

[In millions of dollars]

Program element	Fiscal year 1997 Research and development	Fiscal year 1998	
		Research and development	Emergency management
Fundamental biology	5.0	5.5	.....
Sensor development	8.3	9.8	.....
Plume dispersal	1.7	1.7	1.0
Decontamination	2.0	2.0	.....
Threat assessment	.....	.....	2.0
Training and operations	.....	.....	1.0
Totals	17.0	19.0	4.0

NUCLEAR SMUGGLING

Question. Provide the same information for the nuclear smuggling activities.

Answer. For the Office of Nonproliferation and National Security, activities specifically tailored to counter nuclear smuggling total $8.6 million in fiscal year 1997. Experience over the past two years has shown that gaps exist in the Department's overall counter nuclear smuggling program and the Department's support to other agencies in this endeavor. To close these gaps, we have outlined a new initiative to appreciably increase the funding to counter nuclear smuggling by $12.6 million, for a total of $21.2 million in fiscal year 1998. The funding levels for the various programs and activities involved in the counter nuclear smuggling effort are detailed in the following table:

COUNTER NUCLEAR SMUGGLING ACTIVITIES

[In millions of dollars]

Decision unit	Fiscal year 1997 funding [1]	Fiscal year 1998	
		Increase to base funding	Total funding
Nonproliferation R&D	3.0	4.0	7.0
Nuclear safeguards	0.2	2.0	2.2
Emergency management	2.8	2.5	5.3
Energy intelligence	1.9	1.6	3.5
Arms control	0.7	2.0	2.7
Program direction		0.5	0.5
Total	8.6	12.6	21.2

[1] Reflects fiscal year 1997 funding directly related to nuclear smuggling activities included in base funding.

MATERIAL PROTECTION, CONTROL AND ACCOUNTING (MPC&A) PROGRAM

Question. Briefly review the Material Protection, Control and Accounting (MPC&A) program.

Answer. The goal of The Department of Energy's (DOE) Nuclear Material Protection, Control and Accounting (MPC&A) Program is to reduce the threat of nuclear proliferation by strengthening security at all facilities in Russia, the Newly Independent States (NIS), and the Baltic states that contain plutonium or highly enriched uranium in forms other than nuclear weapons. Plutonium or highly enriched uranium are the essential ingredients of nuclear weapons. Preventing their theft or loss is the first line of defense against nuclear smuggling and nuclear terrorism. The MPC&A program is a critical component of our national security strategy because it prevents nuclear material from entering the smuggling pipeline, where it is difficult or impossible to track.

DOE and its national laboratories have been working directly with technical experts in Russia, Ukraine, Kazakstan, Belarus, and Latvia to improve MPC&A since 1994. In 1995 DOE established a special Task Force to coordinate and accelerate this work. By the end of 1996 cooperative work was underway at over 44 sites in Russia, the NIS, and the Baltics.

DOE also assists the nuclear regulatory authorities in these countries in creating national systems for nuclear material control and accounting. For example, in June 1995, DOE and Gosatomnadzor (GAN), the Russian nuclear regulatory agency, signed an agreement to cooperate on six projects, including the creation of the Russian Federal Materials Control and Accounting Information System and supporting development of the MPC&A regulatory base in Russia. DOE has also initiated MPC&A assistance programs for nuclear materials used by the Russian Navy and Icebreaker fleets and for nuclear materials during transportation in Russia.

Question. How many facilities will be completed by the end of fiscal year 1997?

Answer. By the end of fiscal year 1997, MPC&A upgrades will have been completed at over 20 facilities. (22)

Question. How many additional locations will DOE be undertaking in fiscal year 1998?

Answer. DOE will have agreement to cooperate at all known facilities which use or store weapons-useable nuclear material in Russia, the NIS, and the Baltics during fiscal year 1997. If any additional sites are identified which use or store weapons-useable nuclear material, DOE will seek to add those facilities to our program.

Question. How many additional facilities will DOE need to initiate beyond 1998?

Answer. DOE does not anticipate any additional facilities beyond 1998.

Question. What is the schedule for completing this program?

Answer. DOE will complete all MPC&A upgrades in smaller facilities across Russia, NIS, and the Baltics in Calendar Year 1998. Ongoing upgrades at all remaining facilities are scheduled to be complete by the end of Calender Year 2002.

NUCLEAR SMUGGLING

Question. What is the nuclear smuggling threat and how is DOE's program designed to address that threat?

Answer. Recent events, such as the bombings at the World Trade Center, the Murrah Federal building in Oklahoma City and in the Atlanta area, as well as the

breakup of the former Soviet Union, have intensified concern about transnational threats such as nuclear smuggling and terrorism sponsored by rogue states and unconventional and dissident groups. Reported incidents of alleged illicit nuclear trafficking increased dramatically in the early 1990's and have remained high. Presidential direction on Counterterrorism and on Nuclear Materials Control, as well as the National Defense Authorization Act for Fiscal Year 1997, mandate a national effort to reduce the danger of nuclear smuggling and the associated potential for nuclear terrorism. The U.S. government is addressing this threat through several of its civilian and military agencies and organizations. Based upon unique nuclear expertise, experience, and programs, the Department's overall effort to counter the threat of nuclear smuggling and the associated potential for nuclear terrorism involves integrated and focused strategies to:

—Protect sources of special nuclear materials from theft;
—Work with other U.S. agencies to identify and track the activities of national and sub-national groups seeking special nuclear materials, either through theft or purchase;
—Provide technology to meet needs of U.S. Government and other nations to detect and intercept illicitly trafficked nuclear materials;
—Support law-enforcement operations and diplomatic undertakings; including training and assessments; and
—Plan, prepare, and exercise the capabilities needed to stop end-users of smuggled nuclear materials.

The Department has recently completed a Program Plan for "Countering the Threat of Nuclear Smuggling", which has been separately provided to the Committee. There are several well-established DOE programs related to countering nuclear smuggling, including: domestic and international materials protection, control, and accountability; threat credibility assessment; and the nuclear emergency search programs for responding to threats of nuclear terrorism. Additionally, the Department's capability to assess nuclear black market sales has been instrumental in evaluating the hundreds of nuclear smuggling scams that have occurred during the last few years and in rapidly concentrating scarce resources on those few events that actually involved special nuclear material. Other program elements which contribute to the Department's overall effort include intelligence work on foreign weapons programs and export controls of nuclear-related dual-use technology. Finally, DOE conducts basic research and technology development in support of all of these program elements and strategies.

Question. Provide a breakout showing the funding provided in 1997 and that proposed for 1998 for each program, project or activity:

Answer. A breakout of funding in fiscal year 1997 as well as the fiscal year 1998 budget request for nuclear smuggling activities follows:

COUNTER NUCLEAR SMUGGLING ACTIVITIES

[In millions of dollars]

Decision unit	Fiscal year 1997 Funding [1]	Fiscal year 1998	
		Increase to base funding	Total funding
Nonproliferation R&D	3.0	4.0	7.0
Nuclear Safeguards	0.2	2.0	2.2
Emergency Management	2.8	2.5	5.3
Energy Intelligence	1.9	1.6	3.5
Arms Control	0.7	2.0	2.7
Program Direction	.....	0.5	0.5
Total	8.6	12.6	21.2

[1] Reflects fiscal year 1997 funding directly related to nuclear smuggling activities included in base funding.

For the Office of Nonproliferation and National Security, activities specifically tailored to counter nuclear smuggling total $8.6 million in fiscal year 1997. Experience over the past two years has shown that gaps exist in the Department's overall counter nuclear smuggling program and the Department's support to other agencies in this endeavor. To close these gaps, we have outlined a new initiative to appreciably increase the funding to counter nuclear smuggling by $12.6 million, for a total of $21.2 million in fiscal year 1998.

Highlights of fiscal year 1996–1997 activity:

Provided guidance to International Atomic Energy Agency (IAEA) and the United Nations Special Commission on Iraq on potential indicators of reconstituted Iraqi nuclear program using smuggled material.

Successfully demonstrated pager-sized radiation detector at an international airport in the United States. Both U.S. Customs Service and Department of State are planning procurements of "radiation pager". Also benchmarked radiation environments at ports of entry for U.S. Customs Service.

Provided technical support for nuclear collections by Intelligence Community.

Worked with U.S. Customs Service and the Department of State to provide training and equipment for foreign customs agencies (Project Amber).

Completed initial demonstration of U.S. laboratories' capabilities to do forensic analysis and attribution of seized nuclear material.

Assessed 75 incidents of purported nuclear smuggling worldwide and developed trend analyses and summaries for other agencies. Provided experts for nuclear awareness training including Department of State and Federal Bureau of Investigation-sponsored International Law Enforcement Academy in Budapest.

Highlights of additional activity planned in fiscal year 1998:

Physical protection of fissile nuclear material outside the former Soviet Union will be assessed and improved through the IAEA or on a bilateral basis.

Customized versions of equipment now utilized at DOE facilities will be prototyped in joint programs with the U.S. Customs Service and other Law Enforcement Agencies to enhance the security of U.S. borders. Stand-off and active detection systems against shielded uranium will be prototyped. New technology to support highly portable and inexpensive in-field analysis by law enforcement and intelligence communities and first responders will be developed.

Forensics and attribution of smuggled nuclear material will be operationalized and demonstrated in annual exercise.

Increased analytical work and classified equipment will support intelligence community efforts related to nuclear smuggling and terrorism.

Technical manuals, procedures, training and a " customer help" service to assist Law Enforcement Agency reaction and response to nuclear detections will be provided.

TREATY MONITORING AND PROLIFERATION DETECTION

Question. One of the most important areas related to nonproliferation is treaty monitoring and proliferation detection, yet the budget request does not place the same high priority on these activities as it does on some other areas. Would you comment on this?

Answer. Treaty monitoring and proliferation detection are indeed important areas of nonproliferation research and development. However, during this era of constrained resources and attempting to address numerous other priority program areas and initiatives, we have been unable to provide additional funds for treaty monitoring and proliferation detection research and development in the fiscal year 1998 Budget Request.

OTHER DEFENSE ACTIVITIES

Question. What accounts for the continued increases related to the spent fuels work in North Korea?

Answer. The budget for the Spent Fuel Canning Project will drop from $7.9 million in fiscal year 1997 to $5 million in fiscal year 1998. The Department has estimated that an annual budget of $5 million will be necessary to ensure proper maintenance of the spent fuel stored at Nyongbyon. The Department expects to maintain the fuel for a period of four to seven years, at which time the fuel is to be removed from North Korea.

Question. What is the extent of U.S. activities in 1997 and 1998?

Answer. In 1997, the U.S. will finish securing all 8,000 spent fuel rods in stainless steel canisters, followed by placement of the canisters into storage racks in the spent fuel pool at Nyongbyon, Democratic People's Republic of Korea. This activity will include maintenance on the canning equipment as required, completing the remaining rods in the water filled basin, and transferring the 750 fuel rods stored in a dry pit adjacent to the water-filled basin into the basin with subsequent canning. International Atomic Energy Agency (IAEA) safeguards seals will be applied by the IAEA when canning is complete.

In 1998, the U.S. will begin the long-term maintenance of the spent fuel. This will include activities necessary to maintain the clarity of the spent fuel basin so that

the fuel canisters and storage racks can be visually inspected, instituting periodic monitoring and inspections of the fuel within the canisters using remote means which will ensure continued fuel canister integrity, and maintaining the operability of the canning and conditioning equipment currently at the site so that any failed canisters can be replaced in a timely manner.

Question. Review the extent of remaining U.S. activities under the agreement?

Answer. Most other commitments made to the Democratic People's Republic of Korea (DPRK) are beyond the scope of the Department of Energy's currently assigned tasks, although, in some cases, specific Department expertise is utilized.

For example, the oil shipments and light water reactor supply agreement are the responsibility of the Korean Peninsula Energy Development Organization (KEDO), although the Department has supplied some technical support. Monitoring the shutdown of the various nuclear facilities is being performed by the International Atomic Energy Agency. Eventually many of the currently frozen facilities will be decommissioned. We hope that the experience being gained by the Department at the Department of Energy nuclear complex sites will be of use to that effort.

Fuel disposition.—Under the Agreed Framework, the 8000 fuel rods currently being canned will "not be reprocessed within the DPRK." This presumes that the canisterized fuel will eventually be transported out of the DPRK. DOE has not been assigned responsibility for assessing various disposition options, but we recommend that other countries become involved in disposition option studies. Funding such study is now under consideration through the Korean Peninsula Energy Development Organization.

Waste disposition.—While wastes have been and are being generated by on-going fuel canning, water treatment, and basin cleanup activities, waste disposition is not the responsibility of the U.S., but rather the responsibility of the DPRK. As waste material, filters, etc., are generated, they are transported to waste sites by DPRK technicians.

NONPROLIFERATION AND NATIONAL SECURITY PROGRAM DIRECTION

Question. Program Direction for Nonproliferation and National Security increases from $88.1 million to $94.9 million, $5.6 million of this increase is for Support Service Contracts. How will the $5.6 million increase be spread by activity and what added value will be realized by the increase?

Answer. The information on the increase to Support Service Contracts is as follows:

SUPPORT SERVICE CONTRACTS

[In thousands of dollars]

	Fiscal year 1997 appropriations	Increase/ decrease	Fiscal year 1998 request
Headquarters:			
Nonproliferation and Verification Research and Development	1,601	+200	1,801
Emergency Management	1,225	−71	1,154
Arms Control and Nonproliferation	7,077	+923	8,000
Safeguards and Security	5,996	+1,186	7,182
Declassification/classification	9,600	+2,000	11,600
Energy Intelligence	550	+1,315	1,865
Resource Management	1,200	.....	1,200
Total Headquarters	27,249	+5,553	32,802
Nevada Operations Office	525	.....	525
Total Support Services Contracts	27,774	+5,553	33,327

Support service contracts are an intricate part of Nonproliferation and National Security's program performance. Contract employees offer unique technical skills not always available in the Federal workforce. Limited Federal staffing continues to make the program reliant on meeting national security and international requirements through use of technical and management support services.

$5.6 million is the requested increase. Of this increase, $1.3 million is required for the Office of Energy Intelligence which increasingly relies on support service

contracts as the only viable solution to provide the technical expertise necessary to meet the requirements of a continually expanding mission. The fiscal year 1998 funding for support service contracts will provide direct support to the Counterintelligence Program, Special Technologies Program, and automatic data processing (ADP) support. In addition, funding will provide intelligence infrastructure support such as security, including computer security, and classified document control.

Foreign intelligence services have steadily targeted DOE assets, subjecting them to increased risk. Counterintelligence briefings are imperative to combating that trend. The support service contractors provide Intelligence Community reporting, incident reporting, training, counterintelligence database maintenance, indices checks, risk management, counterintelligence briefings and debriefings.

The Special Technologies Program serves as the gateway for the Intelligence Community to access the DOE technology base in support of operational requirements by identifying dual-use technologies and facilitating technology transfers. The support service contractors serve as technical analysts and technical liaison between the Intelligence Community and the laboratory research and development community. They also maintain the project database, review technical proposals for technical merit, and coordinate technical interagency meetings.

The Office of Energy Intelligence depends totally on support service contracts to accommodate its automatic data processing (ADP) needs, which is also compatible with the spirit of OMB Circular A–76. The only other option available to meet the Office of Energy Intelligence ADP requirements is to hire federal staff to perform that function; the general downward trend in Federal staffing renders that option nonviable.

Intelligence communications support is critical to the Office of Energy Intelligence. Intelligence communications support involves the Secure Energy Analysis System at Department of Energy Headquarters, which includes dedicated connectivity to Field Intelligence Elements located at national laboratories and the Department's Nevada Operations Office. Support is provided to the Counterintelligence Analytical and Research Data System and for an unclassified local area network linked to the Intelligence Community's Open Source Information System (OSIS).

The LAN-based Secure Energy Analysis System has servers at headquarters and a mixture of work stations and server configurations at each of the Field Intelligence Elements. In addition to office applications, this network provides desktop access to intelligence message traffic, Intelink (the Intelligence Community's Joint Worldwide Intelligence Communications System/web-based system for dissemination of finished intelligence and other products) and unclassified news sources such as Reuters. Analytical tools available on the Secure Energy Analysis System include the Energy Intelligence Information System and Pathfinder. Pathfinder is a software package that provides intelligence analysts with a user-friendly, automated means of analyzing, loading, manipulating, and storing large quantities of data from a variety of sources. The OSIS server and a small number of workstations provides access to unclassified holdings (databases and electronic publications) maintained by Intelligence Community agencies and the Community Open Source Program Office (COSPO); OSIS is a proprietary (password-protected) subnetwork of the Internet, and the system offers full Internet access to analysts.

Intelligence is often derived from information that is concealed or not intended to be available for use by the acquirer; as a result, information management and processing is more innately critical in intelligence than most other programs within the Department. The support service contracts maintain both hardware and software and provide the necessary system upgrades. As a member of the Intelligence Community, the Office of Energy Intelligence must adopt system upgrades on a schedule with the rest of the Community to remain a viable, productive and effective player. The loss of intelligence communications support would disable the capability to provide fast turnaround intelligence to the Department and other U.S. Government policymakers. Intelligence must be timely or it is useless.

The safeguards and security increase of $1.2 million added value will be to provide the technical expertise necessary to meet our requirements of Executive Order 12958 on Classified National Security Information, Executive Order 13010 on Critical Infrastructure Protection, Presidential Decision Directive 39, Atomic Energy Act of 1954, and departmental safeguards and security policy. Continued erosion of funding for the safeguards and security support service contract will result in not being able to keep the domestic national security program operating at a level necessary to ensure adequate oversight and direction of DOE's nuclear weapons, nuclear materials, classified information and facilities.

The $2.0 million increase in declassification support services in fiscal year 1998 will enable the Department to meet Executive Order 12958 annual declassification

requirements. The decrease in the fiscal year 1997 support services resulted in a substantial decrease in the number of full-time equivalents conducting reviews in support of the Executive Order's annual declassification requirements. As a result, the fiscal year 1997 annual requirement will be met only by combining the surplus of pages reviewed in fiscal year 1996 with the actual pages reviewed in fiscal year 1997. The current level of resources, however, will not sustain compliance with the Order's requirements in fiscal year 1998. In addition, the increase will provide resources to support the Department's burgeoning litigation activities. Litigation support activity resources would otherwise be drawn from the declassification core mission activities, resulting in non-compliance with statutory and executive order requirements. In January 1997 alone, we expended $1.0 million in contractor support to conduct classification reviews of documents to comply with a single court order. During this period of time, all other document reviews were halted.

The $0.9 million increase for the Arms Control and Nonproliferation program reflects support services required for priority areas such as assisting Russia, the NIS and the Baltics in improving security of nuclear weapons; the MPC&A program; establishing transparent and irreversible nuclear reductions worldwide; and additional support services for Mutual Reciprocal Inspections and the U.S.-Russia-IAEA Trilateral Initiative.

The $0.2 million increase for the Nonproliferation and Verification Research and Development program reflects support services to provide chemical/biological/microbiological scientific and technical support for Congressionally mandated expansion of the R&D program to include detection of chemical and biological weapons production, transportation, and use. This is essential because there is no current staff experience in this area.

Question. Why does Salary and Benefits for the Nevada Office increase from $568,000 to $690,000 with no increase in FTE?

Answer. While there has been no increase in FTE's at the Nevada Office from fiscal year 1997 to fiscal year 1998, the original fiscal year 1997 cost estimates for salary and benefits for the Nevada Office were underestimated. The fiscal year 1998 request of $690,000 was calculated based on actual salary and benefits costs to date for fiscal year 1997 as well as the projected year-end costs for fiscal year 1997 and inflation.

Question. Why does the FTE strength for the individual offices total 415, yet the bottom line total for FTE's shows only 410?

Answer. The fiscal year 1998 FTE strength adds to 410. However, I believe you are speaking to the fiscal year 1997 Current Appropriation column of our budget. There is a typographical error in the Headquarters FTE subtotal, the number should read 345 not 340, with the total for fiscal year 1997 being 415 FTE's.

WORKER AND COMMUNITY TRANSITION

Question. The budget request for Worker and Community Transition increases by $8.1 million to $65.8 million, a 14 percent increase. Who is eligible for payment under this program, contractor or federal employees?

Answer. The Worker and Community Transition program provides funding associated with work force restructuring related to changes in the defense production mission, primarily involving contractor reductions at sites managed by Defense Programs. This program also is the only authorized source of funding to assist communities adversely impacted by reductions in Department of Energy contractor and/or federal work force.

It is estimated that approximately 1,500 contractor separations will occur during fiscal year 1998 related to changes in the defense production mission, primarily due to decisions on strategic stockpile management. Severance and related costs associated with these reductions are for benefits for contractor employees and are estimated to be $30 million. Approximately $7.5 million is anticipated to be available to fund other high priority requests in order to mitigate adverse impact on mission performance. Overall this is an increase of $12.5 million from estimated worker costs in fiscal year 1997. Community Transition Assistance is forecast to decline from $32.6 million in fiscal year 1997 to $28.3 million in fiscal year 1998 in light of smaller overall forecasts for contractor reductions in that year.

WORK FORCE RESTRUCTURING

Question. The budget justification indicates that the Department is considering "taxing" individual programs in order to increase the amount of funding available for Worker and Community assistance. What is the status and schedule for implementing those plans, and how much funding will other programs be required to contribute in 1997 or 1998?

Answer. The Department has consistently funded through the affected program budgets costs associated with work force reductions not related to changes in the defense production mission, but resulting from steps to improve operational efficiency or to address changes in funding. These include costs associated with severance payments provided for under contract, and represent an up-front cost to achieve greater overall savings through restructuring the work force. These funds are not provided to the Worker and Community Transition program, but are allocated directly by the affected programs.

Overall it is estimated that program offices will incur approximately $120 million for such costs in fiscal year 1997. Preliminary estimates are that $40–50 million may be borne these programs in fiscal year 1998. More precise estimates will depend on future analyses to determine necessary work force changes, and benefits packages that may be provided.

Question. Provide a list by program, project, or activity of the source of this additional funding.

Answer. The following estimate is based on currently forecast separations in major DOE programs factored to an average overall separation cost of $20,000, which is the Department's experience to date. The largest portion of other program costs anticipated for fiscal year 1998 are related to the sale of the Elk Hills Naval Petroleum Reserve.

[In millions of dollars]

	Fiscal year	
	1997	1998
Environmental management	110	18
Other programs	10	24

FORMER WORKERS

Question. The budget includes additional funding to initiate a pilot program at 5 DOE sites for evaluating the health of former workers who may be at significant risk due to past exposures. Explain the purpose of the pilot program, including why it is critical to initiate the pilot program in 1998 and how it is different from other ongoing studies?

Answer. This program is mandated by 42 U.S.C. Sec. 7274*i*, Program to Monitor Department of Energy Workers Exposed to Hazardous and Radioactive Substances. This law directs the Secretary of Energy to develop medical evaluation programs for current and former DOE workers at significant risk of work-related illness as a result of exposures to hazardous and radioactive substances while working at DOE facilities. The pilot program for former DOE workers began in October 1996 at 6 sites.

The purpose of the pilot program is to identify former workers who meet the criteria established by the statute. For many groups of former DOE workers, such as those employed in the construction trades, information has not previously been compiled to indicate how many of these individuals were employed at DOE sites, the substances to which they were exposed (radiation or hazardous materials) during their DOE employment, whether job-related exposures were potentially hazardous to their health, or whether their health has suffered adversely as a consequence of their work. These 6 pilot efforts seek to define the need and possible scope of any further medical monitoring that may be warranted among former DOE employees.

This program is different from other existing programs because it is specifically tailored to former workers who may be at risk. The program was initiated in 1996 after an 18-month effort that involved public meetings with stakeholder groups to gain input in determining the initial shape of the pilot program. It was clear from these meetings that more information was needed about exposures and health concerns of former workers before embarking on a potentially large and costly medical monitoring program. It was the decision of the Department to start with a limited number of pilots or needs assessments to determine whether, and for whom, a more extensive medical monitoring program was indicated.

The program is divided in two phases. Phase I is a 1-year needs assessment which allows outside investigators to identify critical groups of at-risk former workers who may benefit from medical surveillance. Phase II is predicated on the demonstration in Phase I of the need for a medical monitoring program. Depending on the size of the at-risk population, identified in Phase I, Phase II monitoring could take up to 4 years.

Question. How long will this pilot program take and what is the expected total cost?

Answer. Six Phase One feasibility studies are now underway and findings are expected in the fall of 1997. Results from the Phase One studies will be peer-reviewed by an outside organization to determine if data is sufficient to move into Phase Two medical monitoring. Up to three additional Phase One studies at different sites may be added this year. The fiscal year 1998 budget request assumes completion of all Phase One studies and the initiation of limited medical monitoring for some workers. Until the determinations are made on the Phase One studies, it is difficult to predict the number of workers who will be monitored or the cost of a medical monitoring program in the outyears.

Question. Provide a funding profile by year through completion.

Answer.

	In thousands
Fiscal year:	
1996	$2,800
1997	3,500
1998	5,500
1999	([1])

[1] TBD.

FUNDING APPROPRIATIONS

Question. What is the rationale for funding the Dose Reconstruction and State Health Studies in the Non-Defense portion of ES&H?

Answer. In fiscal year 1997, all Health Studies activities were consolidated in the Office of Environment, Safety and Health Defense (Other Defense Activities) account. However, following a review of our fiscal year 1998 budget, the Department shifted $29 million from the EH Defense Appropriation account to the EH Non-Defense Appropriation account because of funding caps. To make an efficient and cost-effective transition, the EH Defense Program Direction account ($10,185,000 in fiscal year 1998) was shifted to the EH Non-Defense Program Direction account, thereby consolidating all EH Program Direction in one account. Because some Health Studies activities had originally been funded under the Non-Defense Appropriation, it was logical to incorporate the Health and Human Services Memorandum of Understanding and the State Health Agreements programs ($18,731,000) back once again into the EH Non-Defense Appropriation. Thus, this shift of funds helped alleviate a funding problem.

Question. Aren't these activities directly related to previous Defense activities?

Answer. It is true that most activities under the Health and Human Services Memorandum of Understanding and the State Health Agreement Program take place at former Defense locations. However, prior to fiscal year 1997, these two programs, the Health and Human Services Memorandum of Understanding and the State Health Agreements programs, had been originally funded partially under the EH Non-Defense Appropriation, and partially under the Defense Environmental Restoration and Waste Management Appropriation and the Other Defense Activities Appropriation.

EPIDEMIOLOGIC CENTER FOR STATISTICS AND ANALYSIS

Question. What is the Epidemiologic Center for Statistics and Analysis, where is it located, and what is the nature of the work which will be funded by the $100,000 being requested for the Center?

Answer. There is a wealth of ES&H data currently collected throughout the Department of Energy. However, DOE's ability to use these data effectively in identifying and analyzing current and emerging health and safety issues among its workforce is hampered by the fact that they are maintained in multiple, single purpose data bases that are not linked to each other. The Epidemiologic Center for Statistics and Analysis is the name of an internal program created within DOE's Office of Epidemiologic Studies in fiscal year 1996 to develop methods to put these data to better analytic use in the prevention of worker illness and injury. The program is primarily designed to (1) identify and integrate data from throughout EH and other relevant offices within DOE to ascertain exposures associated with adverse health outcomes, (2) provide enhanced capability to identify workers at high risk, (3) provide feedback to sites for reduction or elimination of adverse health impacts, and (4) provide a capability for the assessment of effectiveness of intervention and prevention measures.

Question. Why is it essential that the Center be funded in 1998?

Answer. Over its first two years, drawing strictly upon internal expertise, existing resources, and focusing on existing ES&H data collecting systems, the program has developed a data directory, somewhat like a library's card catalog, which indexes existing ES&H data sets for use in epidemiologic analyses to address worker health and safety questions. In fiscal year 1998, through the development of relational software and analytical protocols, the program's value will be tested using a few typical worker health and safety questions to demonstrate its potential to provide more timely and comprehensive answers than is currently possible. Such a capability would enhance EH's ability for early response to occupational health questions through preventing and reducing worker risk. Funding for this project in fiscal year 1998 is critical because occupational health and safety data related to DOE's growing efforts in environmental restoration and cleanup are becoming available and early identification of emerging health and safety issues in this area is critical to ensuring that such information is used in the timely redesign of worker protection procedures.

Question. Is the $100,000 a one year commitment or does this begin a long term funding commitment? If a long term commitment, provide a funding profile for the next 5 years.

Answer. A funding commitment of $100,000 for at least two years (with funding provided at the same level, for the same nature of work) would allow demonstration of the feasibility of integrating data from different data collecting systems within DOE and the opportunities for reducing worker health and safety risk. The success of planned program efforts will be used to determine whether it is cost-effective to pursue further system development. The long-term program funding commitment, beyond the two-year feasibility phase, would be based on the program's demonstrated success in enhancing the Department's ability to identify emerging health and safety problems and reducing costs associated with preventable worker illness and injury. Because the program utilizes data already collected by DOE, no new data collection costs will be incurred. Since the program can be expanded on a modular basis, its expansion can be targeted at high priority occupational health and safety areas identified as part of program development.

ELECTROMETALLURGICAL PROGRAM

Question. Why is the electrometallurgical program included in the Defense portion of DOE's budget instead of the non-Defense portion?

Answer. Bench-scale experiments involving electrometallurgical treatment and spent nuclear fuel from some of DOE's National Security programs have been conducted at the Argonne National Laboratory-East. Congress funded the electrometallurgical treatment R&D effort under Atomic Energy Defense Activities in fiscal year 1996 as part of the Defense Environmental Restoration and Waste Management appropriation. Given the experiments on defense-related spent fuel, the Department has decided to request funding for this effort in fiscal year 1998 under Atomic Energy Defense Activities but as part of the Other Defense Activities appropriation.

Question. Aren't Defense fuels in a form that require little or no processing to meet storage requirements?

Answer. Methods to certify that acceptance criteria are met for direct disposal of spent nuclear fuels in a geologic repository are not yet finalized. There are some defense-related fuels that may require treatment prior to their ultimate disposal, and depending on the results of the demonstration project involving Experimental Breeder Reactor-II spent fuel, the Department may propose to apply the technology to a wider array of fuels in the event that treatment proves to be necessary. I understand that, as part of the K-Basins EIS, the Department has decided to proceed with a process of dewatering and drying the N-Reactor fuel in preparation for dry storage in the dry storage container building. This does not, however, place the fuel in a form ready for direct disposal. In any case, no DOE-owned spent nuclear fuels have yet been accepted or designated as acceptable for direct repository disposal.

Question. Why has the electrometallurgical treatment program been split between non-Defense ($76 million) and Defense activities ($25 million)?

Answer. The $76 million you refer to will fund fiscal year 1998 termination activities at the Experimental Breeder Reactor-II (EBR–II) and other facilities at Argonne National Laboratory-West (ANL-West) in Idaho. Only $25 million of that budget deals with demonstrating electrometallurgical treatment. The remaining $51 million is for other termination activities related to placing EBR–II and other facilities at ANL-West into an industrially and radiologically safe shutdown condition. The demonstration of electrometallurgical treatment of a limited amount of EBR–II spent fuel is being conducted using the Fuel Conditioning Facility (FCF) at ANL-West.

Since the demonstration of electrometallurgical treatment is being conducted using non-Defense related spent fuel, this activity is funded out of the (non-Defense) termination account.

The $25 million requested under fiscal year 1998 Atomic Energy Defense Activities is for the Electrometallurgical Treatment R&D experiments at ANL-East in Illinois. These experiments will focus on waste form testing and research, analyses, and bench-scale or laboratory-scale evaluations of the technology as it might apply to other DOE defense-related spent fuels. In light of the fact that the experiments involve defense-related materials and since the program had previously been funded in a defense-related account, we chose to request funding for Electrometallurgical Treatment R&D under the Defense Appropriation.

ELECTROMETALLURGICAL R&D ACTIVITIES

Question. What is the completion date for electrometallurgical R&D activities and how does it compare to previous completion schedules?

Answer. The goal of the Electrometallurgical Treatment R&D effort is to have the basic process technology developed by the end of 1999. Experiments involving DOE spent fuels would include laboratory-scale demonstrations of the technology on various fuel forms and would be completed by the end of 2002. The Department plans to complete the demonstration project being conducted at the Argonne National Laboratory-West by June 1999, at which point the further use of the process for treatment of the entire EBR–II fuel and blanket inventory can be considered. Technology development program activities beyond fiscal year 2002 would be limited to tasks related to characterization and qualification of the high-level wastes produced, to support their acceptance for repository disposal. This schedule for the completion of electrometallurgical treatment technology development is the same as those previously established for this project.

NUCLEAR TECHNOLOGY R&D

Question. What is the expected annual funding profile for Nuclear Technology R&D for the next 5 years?

Answer. Program funding is currently projected to continue at the $25 million per year level through fiscal year 1997. Based on the results ofthe EBR–II demonstration, we will continue to evaluate and adjust future funding requirements to assess the quality and scope of work performed, technical challenges that remain, and the magnitude and urgency of the need for program R&D products in managing DOE spent nuclear fuels.

TMI–2 FUEL FUNDING

Question. Why are experiments and analysis of TMI–2 fuel being proposed for funding with Defense dollars?

Answer. The experiments and analysis of TMI–2 core debris are part of the basic technology development efforts that we are conducting under the consolidated electrometallurgical technology development program at ANL-East. We have requested funding for this program as part of the Other Defense Activities account, due to the significant potential that the technology holds for treating defense-related spent nuclear fuels.

SPENT FUEL MANAGEMENT PLANS

Question. Why is $2.850 million being requested to develop spent fuel management plans for each of the Central European (former Soviet Union) country?

Answer. Developing spent fuel management plans is only one aspect of the spent fuel management program. The purpose of the program is to provide technically-sound, economically viable alternatives to reprocessing for countries with Soviet-designed reactors. Russia continues to have a strong interest in a closed fuel cycle, including reprocessing of spent fuel, which the United States no longer engages in for nonproliferation and environmental reasons.

The most viable and cost effective alternative to reprocessing is dry storage of spent fuel. Russia has made only limited progress in improving the technical safety case for dry storage of fuel from Soviet-designed reactors. Because of this, we are working in coordination with the International Atomic Energy Agency on an initiative to resolve spent fuel storage issues for Paks Nuclear Power Plant in Hungary using test facilities in Russia. These issues include assessing the validity of using western techniques for analyzing Russian-designed reactors and fuel, and the setting and validation of acceptable spent fuel dry storage temperature criteria. In addition, the dry-cask storage work that we are doing in Ukraine will feed into the

resolution of the technical issues. Once these issues are resolved, we believe that we will be able to transfer appropriate dry-cask storage technology to other countries of central and eastern Europe with Soviet-designed reactors and growing spent-fuel problems, such as Armenia, Bulgaria, Czech Republic, Lithuania, and Slovakia.

Additionally, technical issues need to be resolved to permit Russia's nuclear regulatory authority to license the burning of weapons-grade mixed oxide fuel in power reactors, one of the two options the United States is pursuing for disposition of its nuclear weapons material. Although related work has been carried out by Russia, Germany and France, the United States has an interest in working with Russia on several issues that would allow Russia to follow a parallel path to the United States in disposing of its weapons material.

FUNDING PROFILE

Question. What is the expected funding profile for this program over the next 5 years?

Answer. As presently envisioned, resolution of the technical issues related to dry storage of spent fuel—specifically creating a code validation data set, developing dry storage temperature criteria, and then conducting a dry-storage demonstration—is likely to take from 1998 through 2003 to complete at a total cost of approximately $9 million over those five years. We project that resolving the technical issues related to burning weapons-grade mixed oxide fuel in Russian power reactors will require approximately $16 million during that same time.

PROTOTYPE INACTIVATION

Question. What explains the $44.1 million reduction in the Evaluation and Servicing program?

Answer. In 1993, Naval Reactors began inactivation of six shutdown land-based R&D reactor plants. The inactivation effort includes fuel removal, decontamination and appropriate remediation and dismantlement work at three sites. The inactivation plan peaks in fiscal year 1997 and was scheduled to be completed by fiscal year 2002. To date, this work has progressed on schedule with fuel removed from five plants and numerous buildings and structures demolished. However, due to Departmental funding constraints, the inactivation effort has been scaled back. Naval Reactors expects to terminate inactivation efforts for the S3G and D1G test reactor plants in New York and the S1C plant in Connecticut. In addition, the removal of fuel from the A1W plant in Idaho could be delayed and selected remediation work terminated. There will be no adverse environmental consequences from these changes.

Question. What impact will this reduction have on improving plant operations and designing new naval reactor cores in the future?

Answer. Inactivation work on the test reactors supports plant operations and design in two principal ways. First, the knowledge gained in servicing the test reactors aids in servicing operating Naval plants. For example, the A1W test reactor defueling is providing important experience in advance of the first-of-a-kind servicing of the NIMITZ Class aircraft carriers.

Second, the examination of cores, materials and components removed from the test reactors provides valuable data on expected performance and contributes to the database for future designs. The findings are used to validate detailed predictive analyses which support the operation of plants with lifetimes spanning three or more decades. For example, data recently obtained showed unexpected phenomena requiring additional investigation. The results of the investigation have implications for the performance and safety analysis methods used to evaluate existing plant designs, such as those in the Trident ballistic missile submarines, and for the design of plants for new applications, such as the new attack submarine.

The reduction in the Evaluation and Servicing program will impair the ability to obtain these types of data in a timely manner.

Question. Please explain the following statement from the budget justification:

Full realization of savings is dependent on defueling and long-term inactivation efforts currently underway, which will leave these facilities in an environmentally benign state.

Answer. Naval Reactors shut down six of eight land based test reactor plants. While this allowed a sizeable reduction in operation costs, a liability exists which must be dealt with responsibly. The costs of addressing this liability must eventually be met along with the $200 billion liability for cleaning up the entire DOE complex.

QUESTIONS SUBMITTED BY SENATOR BURNS

TRANSPORTATION AND STORAGE OF NUCLEAR WEAPONS

Question. Dr. Reis, could you please explain to me how antiquated nuclear warheads, that reside in Montana, are being transported out of the state?

Answer. Nuclear weapons no longer needed for national security are retired. All retired nuclear weapons are transported from the military bases in specially designed Safe Secure Trailers (SST's) that have protective and deterrent systems installed and are accompanied by armed Federal couriers. The SST's and the couriers are provided by the DOE. The timing and rate of weapon returns from the Department of Defense to the Department of Energy is coordinated between the Departments.

Question. What are the safety measures that need to be met and are they being met?

Answer. Weapon shipments require the use of the SST's, special packaging and loading configurations, and specific routes and campaign durations. There are a wide range of safety measures that apply. The transportation configurations are certified in a manner that ensures the safety and health of DOE workers, the public, and the environment. The packaging for nuclear weapons cargo is certified to meet the applicable requirements of 10CFR71 or 49CFR100–178. This certification is supported by comprehensive transportation risk assessments, and safety analysis reports have been prepared to assess the risk to public safety and the environment from weapon shipments. These documents are updated every 5 years or earlier if programmatic requirements change. They systematically describe the transportation system, including design, operations, and maintenance, and identify and assess hazards associated with normal environments (those environments the weapon is expected to experience during its stockpile-to-target sequence) and abnormal environments and accident scenarios and responses. Positive measures, both engineered features and administrative controls (procedures, personnel training, personnel reliability standards, etc.), are implemented to ensure that the probability is less than 1 in 1,000,000 of a nuclear explosive accident occurring from a traffic accident, terrorist attack, acts of God (lightning, high winds, flood, fire, earthquake, etc.), theft, human error, and other events. These documents, as well as the SST's protective and deterrent systems, courier training, and special packaging and loading configurations, are independently verified for functionality, accuracy, and thoroughness by a team of DOE and national laboratory experts prior to shipments being authorized. Over the past 40 years, over 89 million miles have been covered by SST's without damage to cargo or a release to the public.

Question. Where are these warheads being sent for storage?

Answer. All retired weapons that are returned to DOE custody are currently transported to the Pantex Plant in Amarillo, Texas. The Pantex Plant is the Department's primary facility for performing weapon assembly and disassembly operations. It has undergone the rigorous safety analysis and verification necessary to gain authorization to safeguard and store all types of nuclear weapons. At present, the Pantex Plant is DOE's only facility approved for routine weapon storage.

STOCKPILE STEWARDSHIP AND MANAGEMENT PROGRAM

Question. Also, can you give me your assurance that the current Stockpile Stewardship and Management Program fulfills its responsibilities to the American people guaranteeing the safety and reliability of our present stockpile of nuclear warheads?

Answer. The U.S. nuclear weapon posture has undergone significant changes in response to the changing world political environment, the U.S. halting of new nuclear weapons development, an observed moratorium on nuclear testing, and the negotiation of a "zero" yield Comprehensive Test Ban Treaty. Nevertheless, President Clinton directed the Department of Energy (DOE) and Department of Defense (DOD) to establish a program that ensures the Nation's nuclear deterrent is maintained and continues to be a safe and reliable cornerstone of U.S. national security policy.

In response to this directive, DOE developed the Stockpile Stewardship and Management Plan (SSMP) with the intent of ensuring high confidence in the safety, reliability, and performance of the stockpile without nuclear testing. The primary responsibility of the SSMP is to describe how Defense Programs (DP) will continue to ensure high confidence in the nuclear weapons stockpile.

The current SSMP is striving to fulfill its responsibilities. This is a continuous effort. It will not be quick or easy and will require a competent technical staff supported by scientific tools and facilities that have been identified as necessary for this effort. I can assure you DOE will continue to strive to maintain high confidence that

the U.S. nuclear weapons stockpile will be available to perform as specified in joint DOE/DOD requirements documents.

DOE and DOD perform an annual certification of the stockpile to ensure the nuclear weapons continue to be safe, reliable, and available to perform as required. The initial certification to the President by the Secretaries of Energy and Defense was completed on February 7, 1997.

FUNDING FOR MAINTENANCE AND FACILITY UPGRADES

Question. Finally, I have heard various comments by other members of the nuclear community that other sections of our weapons and security programs are at risk or in crises because of the emphasis being placed on the stockpile stewardship and management program. Can you respond to these concerns? Specifically, Karen Clegg, the president of the Government Services and Federal Manufacturing and Technologies, AlliedSignal expressed her concerns that other areas, such as maintenance and upgrading facilities, are being diverted to concentrate more support for this program.

Answer. As the nuclear weapons complex has been downsized with reduced budgets since the end of the Cold War, it is true that hard trade-offs have resulted in short-term imbalances between near-term program needs and maintenance and infrastructure support at some weapons facilities. This concern has also been voiced by some facility managers such as Karen Clegg of AlliedSignal. This concern is not due to "emphasis placed on the stockpile stewardship and management program," however. In fact, the development and initial implementation of the stockpile stewardship and management program is resulting in increasing levels of work and corresponding budgetary support that will allow this trend in maintenance and infrastructure funding to be reversed in those portions of the complex needed to support the Stockpile Stewardship and Management Plan.

DOE continues to monitor the status of facility maintenance at all Defense Programs sites. Though the overall funding level, as a percent of facility costs, has decreased somewhat in recent years, the level associated with key safety and operating systems remains high. What has not received optimal funding recently has been the replacement and upgrade of plant infrastructure items, such as major roof replacements, utility and power system upgrades, and replacement of older equipment. The replacements and upgrades of this type are receiving added attention within DOE, and increased funding allocations for these activities are expected in future years.

QUESTION SUBMITTED BY SENATOR REID

NONPROLIFERATION AND NATIONAL SECURITY PROGRAM DIRECTION

Question. Mr. Baker, your program to reduce the threat from weapons of mass destruction is a tremendously important job. I know that it covers a broad range of technical disciplines and responsive actions. It joins political scientists with nuclear physicists while executing intelligence analysis as well as operational response to actual incidents. So I know that this is a complex program with important contributions to our national security posture.

I am nevertheless puzzled by the "Program Direction" line in your fiscal year 1998 Budget. This line reflected about 13.1 percent of the total appropriation for fiscal year 1997, and it has grown to about 14.2 percent of the total fiscal year 1998 request. I do not know of any accepted guide that dictates upper limits for "Program Direction" or management, but a number more like 9 percent or 10 percent would not be surprising to me.

I am puzzled further by the description of the Program Direction line. Your testimony declares that the funding "will be used to meet requirements for the Declassification Initiative, Safeguards and Security, Arms Control, Research and Development, and other nonproliferation activities." Apart from the Declassification Initiative, all the rest of this list are dealt with already in your program lines.

So I am confused. It sure appears to me that you have had difficulty "program direction" from "program execution." And if that is true, then it should be possible to reduce the "Program Direction" request significantly.

Perhaps you could explain to me and this Committee what is really program direction in that line. If some of that line is not program direction, please try to explain what it is doing there.

Answer. I will be very happy to explain the content of the program direction line. First, let me state that all activities contained in this line are program direction-related. I also believe that what on the surface appears to be a difficulty in separat-

ing "program direction" from "program execution" is in fact a misunderstanding arising from the redefinition of the Department's program direction line. At Congressional direction beginning with the fiscal year 1997 Congressional Budget Request, the Department's program direction line has by definition uniformly contained all funding for (1) salary, benefits, and travel for federal employees, (2) Headquarters support service contracts (technical assistance and management support), and (3) other related expenses. This was not the case prior to fiscal year 1997. Prior to fiscal year 1997, funding associated with these activities often appeared in more than one line item. As a result of the redefinition, funding which formerly appeared in non-program direction lines (hence its association with "program execution") now appears in the program direction line. The activities associated with the funding have not changed, only their location within the budget request.

At this time I would like to explain the specifics of the program direction request for Nonproliferation and National Security and why this funding is critical to the timely accomplishment of our mission.

The Nonproliferation and National Security federal staff consists of program managers and technical experts who formulate policy, manage programs, and provide "on the ground" technical expertise. These personnel are composed of policy and technical experts required to run domestic and international programs and solve operational problems and issues. In direct contrast to other Departmental program offices, the Office of Nonproliferation and National Security does not have a large infrastructure of Federal staff throughout the field structure to perform similar tasks. In addition to program management, the staff is required to provide analytic and technical assistance to the Department's field elements, the U.S. arms control, intelligence, law enforcement, emergency management communities, and international arms control and nonproliferation agencies. I would like to emphasize that these multi-faceted functions are distinctly different from purely program oversight activities conducted by other Departmental organizations. The following examples illustrate a few of the types of crosscutting operational (vs. oversight) functions performed by the Federal staff:

—In the area of nuclear materials protection, control and accounting, staff provides direct technical support and policy direction on the ground in Russia and the Newly Independent States assessing facilities for specific improvements, and cooperating directly with those states in implementing the recommended upgrades.

—In the area of domestic safeguards and security, staff provide technical assistance to field elements for the implementation of cost-saving safeguards and security measures and develop Department-wide strategic and long-range planning for domestic nuclear safeguards and security.

—In the area of international arms control and nonproliferation, staff provides direct technical support and policy direction on International Atomic Energy Agency safeguards initiatives, spent fuel canning in North Korea, and mutual reciprocal inspections on excess fissile materials.

—The Office of Intelligence staff is devoted to providing direct intelligence support to policy officials at the Department and other policy agencies, as well as representing the Department within the Intelligence Community.

—The Office of Research and Development technical staff manage the broad-based, nationally important R&D program formulating the technical content of the program to satisfy Departmental and interagency operational requirements and directing the National Laboratories' execution of development programs.

—The Office of Emergency Management staff provides technical assistance to field elements for the implementation of a cost-effective emergency management program and provides trained technical staff to respond to the Headquarters Emergency Operations Center upon declaration of an emergency and to provide these experts to other Federal, state, and local government agencies in support of emergency declarations.

If the Department of Energy does not receive the requested amount for salaries, benefits, and travel for the federal staff, it will be forced to reduce its current on-board strength. If such an adverse action were to occur, the Department would be forced to revert back to its former role of merely providing paper studies on reducing the global danger posed by weapons of mass destruction rather than its present role of providing "on the ground" expert analytic and technical solutions to such problems.

Equally critical to the accomplishment of the mission is the cadre of personnel provided by Headquarters support service contracts. This expertise is funded by the program direction line. Previously, funding for these personnel was contained in program activity or "execution". The functions are not new, only the location of the

funding request within the budget. These personnel complement the Federal staff and the National Laboratory personnel on assignment to Headquarters.

Approximately one-third of the on-site Headquarters support service contractors perform duties associated with the declassification/openness initiative. On-site contractor support is equally critical to meeting mission obligations in the intelligence, arms control and nonproliferation, and law enforcement communities which are largely centered in the Washington, D.C. area. For example, support to policymakers on a growing array of technical nuclear issues requires real-time answers that can only be provided if resources are positioned locally. Moreover, our impact in the arms control, nonproliferation, and intelligence communities is greatly enhanced by the local availability of the best technical experts who can participate in the on-going dialogue among intergovernmental analysts on policy-relevant assessments such as National Intelligence Estimates, arms control and treaty negotiations, and technical assessments for planning and execution of research and development of technologies and systems for treaty monitoring and proliferation detection. The on-site technical support service contractors offer a cost-effective complement to the limited number of National Laboratory employees who perform similar functions in support of the Federal staff. In addition to the on-site technical personnel, the Office of Nonproliferation and National Security depends totally on support service contracts to accommodate its automatic data processing needs and secure intelligence communications support.

The on-site technical support contractor personnel staff are critical to the successful and timely accomplishment of our varied mission. The only option available to meet our needs would be additional Federal staff and/or additional National Laboratory personnel at Headquarters, neither is as cost-effective as the present policy of using support service contractors. In addition, the use of on-site technical support service contractor personnel allows us to change the skill mix on a more timely basis to respond to new challenges with the appropriate technical expertise. This is not possible with the Federal staff (whose retraining is both expensive and time consuming) and less cost-effective with the National Laboratory personnel. Our policy for the National Laboratory personnel assigned to Headquarters is to use them for longer-term research projects and use the on-site support service contractors to maintain the necessary skill mix.

The final element of our program direction request is funding for other related expenses required for maintaining our Headquarters operations. These expenses include rent for Headquarters space, utilities, general printing, graphics, copying, supplies, telephones, general automation support, postage, and other miscellaneous expenses associated with office operations. These expenses constitute our portion of the Department's Working Capital Fund. These services were previously funded from the Departmental Administration budget line item. Beginning with the fiscal year 1997 budget the Department transferred these activities and the responsibility for funding to the respective program offices.

In summary, the program direction request is critical if the Department is to continue its role of providing "on the ground" operational technical assistance and timely expert counsel to policymakers throughout the arms control, nonproliferation, intelligence, and law enforcement communities. Without the full funding request, the Department will be required to revert to its former role of providing paper studies on the critical national security issues and problems confronting the nation.

QUESTIONS SUBMITTED BY SENATOR CRAIG

CONSEQUENCES OF REDUCING PROTOTYPE INACTIVATION WORK

Question. The Naval Reactors Program is in the process of shutting down six land-based prototype plants. One of these is the A1W–A plant at the Naval Reactors Facility in Idaho.

The multi-year inactivation of these shut-down plants began in 1993 and is halfway complete. To support the timely completion of this effort, fiscal year 1998 needs were estimated to be approximately $90 million.

The fiscal year 1998 budget requests only half this amount and fails to fund the full scope of planned inactivation.

Experienced crews are in place to complete this work. This funding reduction will abruptly terminate their activities. DOE cannot be assured these experienced workers will be available to complete this work some years from now, when resources do allow its continuance.

Please explain why DOE proposes to allow funding interruptions to increase the overall cost of this work, rather than continuing the inactivation of the shutdown reactors to its timely conclusion.

Answer. The original schedule for inactivation of Naval Reactors six shutdown test reactor plants called for work to begin in 1993 and be completed in ten years. This plan, predicated on leaving the shutdown plants in the optimal environmentally benign status, took advantage of trained workers and a logical work sequence of moving from plant to plant. To date, the work has progressed on schedule, with fuel removed from five of the seven reactors in these plants and numerous buildings and structures demolished.

However, for fiscal year 1998 overall Departmental funding constraints reduced funding available to the Office of Naval Reactors. Priority for available Naval Reactors funding was given to supporting the numerous operating reactors and meeting the Navy's need for a reactor plant for the New Attack Submarine, the key to sustaining the submarine industrial base and future force level. As a consequence, the prototype inactivation effort, though important, was scaled back. The resultant impact will be to put the shutdown plants in a safe, but not optimal condition, defer related remedial work, and potentially delay the defueling of one plant. The deferred work is important and eventually must be done.

QUESTIONS SUBMITTED BY SENATOR DORGAN

CHEMICAL AND BIOLOGICAL WEAPONS NONPROLIFERATION PROGRAM

Question. On page 4 of your prepared statement, you describe the Department of Energy's new Chemical and Biological Nonproliferation Program, which has been developing technologies to detect poison gases. As I recall, the proper detection of chemical weapons was a major issue during the Gulf War. At the time, I believe our military personnel lost confidence in their ability to detect chemical weapons. We are all now wondering whether the alarms that then seemed false might not have actually been accurate. In your view, what aspects of our current chemical weapons detection capability need to be improved?

Answer. During the Gulf War false alarms related to detection of chemical agents were a major problem. Because of the high false alarm rate, our forces lost confidence in their ability to detect chemical agents on the battlefield, and in some cases the detectors were reportedly shut off.

While the hand-held Chemical Agent Monitor (CAM) has many positive features, it does not have sufficient resolution to reliably distinguish between environmental chemical contaminants and chemical weapons agents, as was the case in the Gulf War. While changes are being made to improve the CAM performance, only limited improvements are possible. In order to enhance chemical weapons detection capability, detectors based on new technology must be developed. Thorough testing in actual or near-actual environments must be done to measure background signals and establish performance. The Department of Defense and the Department of Energy are working on alternate technologies that will provide high sensitivities with minimal false positives.

Question. How are you working to improve them?

Answer. The major goal of DOE's chemical agent detection program is the significant reduction or elimination of false alarm rates. These false alarms include both the failure to detect a real agent (false negatives) and the indication that an agent is present when it is not (false positives). Our objective is to develop a miniaturized, autonomous, hand-held multi-agent detector that can detect both chemical agents and toxins.

Question. Could you describe in general terms the technologies you are developing?

Answer. The Department of Energy's approach includes three key elements to reduce false alarm rates. The first is the development of a detector "front end" which cleans up and concentrates the sample. This step is followed by micro-separation techniques that separate the sample into its component parts in preparation for analysis. Finally, the heart of the detector is a series of miniaturized arrays which use different measurement and identification techniques to perform multiple independent analyses to identify agents. The combination of independent means of identifying agents provides redundancy that significantly increases specificity and leads to extremely low false alarm rates. The detector is designed to be autonomous, hand-held and provide real time identification of the full range of chemical weapons agents and biotoxins. Within the current budget constraints, a proof-of-concept unit

will be demonstrated in three years followed by completion of a prototype field unit in the fifth year of the program.

NUCLEAR TEST DETECTION

Question. Also on page 4 of your prepared statement, you discuss some of the technologies that the Department is developing in order to detect the test of a nuclear weapon, whether under water, in the atmosphere, or underground. The Department's capabilities in this area will become increasingly important as the Senate considers the Comprehensive Test Ban Treaty.

Your list of technologies includes seismic, radionuclide, hydroacoustic, and infrasound. I'm familiar with the notion of seismic detection—a bomb going off underground creates a small earthquake, which can be detected. What are the concepts behind these other technologies?

Answer. The seismic signal from a nuclear explosion is similar to a seismic signal from an earthquake in that the energy released passes through the earth as energy waves that can be detected at various distances from the source by seismometers. Hydroacoustic and infrasound detection technologies are very similar to seismic detection technology, since they also detect energy waves. Hydroacoustic waves are basically sound waves which travel through water, detected with instruments similar to sonar, and infrasonic waves are low frequency sound waves which travel through the air and are detected with microphones. The principle for each of these technologies is essentially the same, but the energy waves travel through each medium (air, water, earth) at unique frequencies, and therefore require instrumentation tailored to each detection frequency.

Radiation detection technology is quite different from the other three Comprehensive Test Ban Treaty monitoring technologies, since what is measured is radiation from decay of radioactive atoms from the actual nuclear explosion carried through the air either on particles or as a radioactive gas. The detection technology developed by the Department of Energy for the special monitoring application under the Comprehensive Test Ban Treaty uses commercially available components of standard radiation detection equipment (e.g., high purity germanium radiation detectors). However, because of an engineering breakthrough, the equipment achieves a combination of automation and high sensitivity, such that only annual maintenance is required and only 80 units will provide coverage of the entire earth. The Department is delivering bid-model prototypes to the Air Force of the two types of detectors that have been agreed to in the treaty protocol, a particulate analyzer and a gaseous xenon analyzer. Through Air Force procurement the technology will be made commercially available, so that all countries can buy the technology and the global network can be standardized and serviced uniformly.

For more detailed information, we have enclosed a copy of our Comprehensive Test Ban Treaty Research and Development 1995 Progress Report.

[CLERK'S NOTE.—The publication Comprehensive Test Ban Treaty Research and Development 1995 Progress Report can be found on the World Wide Web home page at http://www.ctbt.rnd.doe.gov/.]

SUBCRITICAL EXPERIMENTS AT THE NEVADA TEST SITE

Question. I understand that the Administration has scheduled 6 "subcritical" nuclear weapons experiments to be conducted underground at the Nevada Test Site. These tests do not technically violate the terms of the Comprehensive Test Ban Treaty that the United States and other countries signed in September 1996. However, the tests may give rise to concerns abroad that the United States is still interested in developing new nuclear weapons. What is a subcritical experiment?

Answer. There are two subcritical experiments planned by the Department to be conducted at the Nevada Test Site for fiscal year 1997. These are scientific experiments to obtain technical information needed for stockpile stewardship. They will involve high explosives and nuclear weapon materials, such as plutonium. The high explosive will be detonated to create high pressures similar to those in the early non nuclear stages of a nuclear weapon. Data will be obtained on the behavior of nuclear weapon materials. The configuration and quantities of nuclear materials will be such that nuclear criticality will not be reached. This means that there will be no self-sustaining nuclear chain reaction in the experimental assembly. Data from such experiments is needed as input to the advanced computer analyses that the Department plans to use to certify the performance and safety of the nation's nuclear weapons stockpile in lieu of conducting nuclear tests. The President has stated that the safety and reliability of our current stockpile will be maintained.

Question. What is its purpose?

Answer. The primary objective of the first planned subcritical experiment is to obtain data on the equation of state of plutonium (the mathematical relationship among pressure, density, and temperature for this material) under several levels of high pressure. The second planned subcritical experiment is directed at obtaining data on the surface ejecta behavior of plutonium when it is subjected to a shock wave from high explosives. This, and similar technical data on aging plutonium and remanufactured pits, will be obtained through future subcritical experiments. Such data are needed as input to the advanced computer analyses that the Department plans to use to certify the performance and safety of the Nation's nuclear weapons stockpile in lieu of conducting nuclear tests.

Question. Has the interagency working group decided when to conduct the first experiment?

Answer. Interagency discussions have focused on and resolved key policy-related issues of subcritical experiments, such as transparency. The decision to proceed with the experiments should be made shortly by the Secretary of Energy in consultation with the interagency working group.

The Secretary of Energy issued a statement regarding the schedule for subcritical experiments on April 4, 1997. The statement follows as an update for the record.

STATEMENT OF THE SECRETARY OF ENERGY FEDERICO PEÑA ON THE SCHEDULE FOR SUBCRITICAL EXPERIMENTS

At the United Nations last year, as the first world leader to sign the Comprehensive Test Ban Treaty, President Clinton firmly committed the United States to the pursuit of a world free of nuclear testing, observing that this treaty was the culmination of the work of American Presidents—both Republican and Democrat—over the past four decades.

When the President made the decision to pursue a zero yield Comprehensive Test Ban Treaty, he stated that, even in the absence of nuclear testing, we would maintain "strategic nuclear forces sufficient to deter any future hostile foreign leadership from acting against the interests of the United States." The President also declared that the maintenance of a safe and reliable nuclear weapons stockpile is a necessary condition for U.S. entry into a Comprehensive Test Ban Treaty.

Maintenance of a safe and reliable nuclear weapons stockpile is the direct responsibility of the Department of Energy (DOE). To this end, we are announcing today a schedule for subcritical experiments—an essential component of the Department's program for ensuring the safety and reliability of the stockpile. The first in a series of these experiments is now scheduled for June 1997, with a second similar experiment to follow some time this fall.

Over many decades, a group of distinguished scientists known as the JASON's has provided the U.S. Government independent, expert analyses in defense and arms control issues. At the request of the Department of Energy, the JASON's conducted a review of the designs of the Department's first two subcritical experiments. In a January 1997 letter transmitting this review to Acting Secretary of Energy Charles Curtis, the JASON's concluded that "these particular experiments will add valuable scientific information to our database relevant to the performance of our nuclear weapons, and that there is no conceivable scenario in which these experiments lead to criticality." Yesterday, the JASON's formally released their report.

Subcritical experiments are essential to our commitments to a world free of nuclear testing and a reliable nuclear deterrent and are fully consistent with the CTBT. In addition, these experiments complement other elements of DOE's Stockpile Stewardship and Management program such as the National Ignition Facility and the Accelerated Strategic Computing Initiative—additional tools which will help supply the confidence in stockpile safety and reliability the President has required in order to support the CTBT.

The Comprehensive Test Ban Treaty represents an advancement of peace and security for the American people. It is a clear demarcation between the Cold War Era and the post-Cold War world: between a runaway arms race, fear of nuclear proliferation and concern about environmental degradation—and increased stability, enhanced security and ongoing international cooperation. The Department of Energy is proud of its contribution toward these important national and international goals.

SUBCRITICAL EXPERIMENTS

Question. Have DOD and DOE evaluated the nonproliferation impact of conducting a subcritical experiment?

Answer. The United States Government's commitment to nonproliferation of nuclear weapons is a matter of record. The indefinite extension of the Non-Proliferation Treaty (NPT) in 1995 followed by the President's signing the Comprehensive

Test Ban Treaty (CTBT) on September 24, 1996 is clear evidence that non-proliferation is one or our highest arms control priorities. The nonproliferation implications of conducting subcritical experiments relate to the perception that such experiments are a means to circumvent the CTBT. In fact, subcritical experiments are an essential part of the Stockpile Stewardship and Management Program (SSMP) that is a key element of the safeguards that the President adopted in order to make a CTBT possible. Furthermore, subcritical experiments are not and can not be nuclear explosions and are not prohibited by the CTBT. Without nuclear testing, other methods must be used to ensure the safety, reliability, and security of the enduring stockpile. Subcritical experiments are an essential component of the experimental and calculational tools to provide that assurance.

SUBCRITICAL EXPERIMENTS AT THE NEVADA TEST SITE

Question. Have the Departments considered how to demonstrate that the subcritical experiments are not critical explosions (and therefore violations of the CTBT)?

Answer. The first two planned experiments have been reviewed by technical experts at the Los Alamos and Lawrence Livermore National Laboratories to assure they will remain subcritical. Each subsequent experiment will be reviewed in a similar fashion. In addition, a review of the first two planned experiments has been conducted by the JASON's, an independent group of technical experts. They concluded that "* * * there is no conceivable scenario in which these experiments lead to criticality." A similar independent review process will be implemented for future subcritical experiments.

Question. And have the Departments considered whether by conducting the experiment underground they might set a precedent that other nations might emulate, and that the United States might regret?

Answer. There are several compelling reasons for the United States conducting these experiments as we have planned. Conducting them in an already existing underground complex in the isolated Nevada Test Site will assure a high degree of safety for the public and for NTS workers. Conducting the experiments at the NTS and underground, rather than elsewhere and/or in a reusable above ground chamber will also minimize the environmental impacts. In addition, the cost to the taxpayer will be much less than an above ground, reusable chamber that would take many years and many tens of millions of dollars to design, build, and certify for adequate safety.

Presumably, the concern expressed in the Question is that, by conducting these experiments underground, other Nations might do the same but not adhere to the "rule of subcriticality" and escape detection. Of course, a great many opportunities exist for violating a treaty with a "zero" energy release threshold. On the other hand, because of the relatively small amounts of energy released, experiments of this type could as easily be hidden in an above ground chamber if there were less regard for safety, cost, or the environment.

B53 REPLACEMENT

Question. I was pleased to learn that the Department of Energy's weapons management efforts are now leading to the phasing out of the B53 bomb, among our oldest nuclear weapons, which only the B–52 bomber can carry.

North Dakotans, who host 36 B–52's, will be relieved to learn that a safer weapon, the B61 bomb, is replacing the 35-year-old B53 bomb. Could you please describe why the B61's safety, security, and use control are improvements over the B53's?

Answer. The B53 bomb will be replaced by B61–11's. The B61–11 is a safer weapon than the B53 because it has modern safety, security, and use control features. The insensitive high explosive used in the B61–11's has a much higher resistance to mechanical and thermal environments (e.g., drops, fire environments) than the conventional high explosive in the B53's. The B53 does not have all enhanced nuclear detonation safety (ENDS) features of a modern weapon such as the B61–11. Some ENDS features are strong links, weak links, and lightning arrestor connectors.

SUBCOMMITTEE RECESS

Senator DOMENICI. Thank you very much. It is nice to be with you all. The subcommittee will stand in recess subject to call.

[Whereupon, at 11:50 a.m., Thursday, March 20, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1998

TUESDAY, APRIL 15, 1997

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2:05 p.m., in room SD–124, Dirksen Senate Office Building, Hon. Slade Gorton presiding.

Present: Senators Gorton, Bennett, Craig, and Murray.

Also present: Senator Wyden.

DEPARTMENT OF ENERGY

BONNEVILLE POWER ADMINISTRATION

STATEMENTS OF:

RANDALL HARDY, ADMINISTRATOR

BRIG. GEN. ROBERT GRIFFIN, COMMANDER, NORTHWEST DIVISION, CORPS OF ENGINEERS—CIVIL, DEPARTMENT OF THE ARMY, DEPARTMENT OF DEFENSE

ACCOMPANIED BY:

JOHN KEYES, REGIONAL DIRECTOR, BUREAU OF RECLAMATION, PACIFIC NORTHWEST DIVISION REGION

DAVE GEIGER, PACIFIC SALMON PROGRAM MANAGER, CORPS OF ENGINEERS—CIVIL, DEPARTMENT OF THE ARMY, DEPARTMENT OF DEFENSE

JOHN VELEHRADSKY, DIRECTOR OF ENGINEERING AND TECHNICAL SERVICES, CORPS OF ENGINEERS—CIVIL, DEPARTMENT OF THE ARMY, DEPARTMENT OF DEFENSE

OPENING STATEMENT OF SLADE GORTON

Senator GORTON. The hearing will come to order. We are meeting today to hear testimony with respect to the Bonneville Power Administration and related issues.

First, I would like to thank today's witnesses for coming to Washington, DC, to testify at this hearing on the Bonneville Power Administration. I also want the record to reflect my thanks to Senator Domenici, the chairman of the subcommittee, for allowing me to hold this hearing.

We will cover a broad range of subjects related to Bonneville and its operations in the Pacific Northwest, not necessarily limited to the fiscal year 1998 budget request. And because the issues related to Bonneville are so critical to the people of the four Northwest States and Alaska, I have extended an invitation to Northwest Senators not on the Appropriations Committee, so that they may have

an opportunity to participate in today's hearings. I do not see any of them here at this point, but we will hope that some of them will come or that their representatives will be here.

If you pick up a newspaper from any of the Northwest States today you will probably find a story on an issue related to BPA. Because Bonneville markets the power from the Federal hydroelectric dams along the Columbia and Snake River system, it plays a critical role in our regional economy and the multiple uses of the river systems. It is because the Columbia and Snake River systems and its many uses binds together the four Northwest States that any effort to change the operation of the river system in one State will most certainly impact neighboring States. As a result, the old saying "we are all in this together" is especially true for the Northwest congressional delegation when it comes to Bonneville and the Columbia and Snake River issues.

REGIONAL POWER SYSTEM REVIEW

The four Northwest Governors recognize this fact when they commissioned a regional review of the Northwest electric power system. Included in the regional review was a recommendation that Bonneville's power marketing and transmission functions be legally separated. This was the single recommendation from the review to Congress for legislative action. At its core, this recommendation is critical to the future success of any action on the part of an individual Northwest State to enact its own retail electricity competition legislation.

Today, Bonneville markets nearly 10,000 megawatts of power in the Northwest, and controls well over 50 percent of the region's transmission system. Bonneville's high fixed costs and a competitive wholesale electric power market make it difficult for Bonneville, for the first time in its history, to compete in the region with other lower-cost providers of electricity. As a result, the temptation exists for Bonneville to use its transmission system to assist its ability to market power in the region in order to cover its cost. In an effort to avoid this temptation, Bonneville has administratively separated its marketing and transmission functions. This is a good first step.

Today, we will hear from Administrator Hardy on just how far he can take this administrative separation, and at what point the law ties his hands from going further. At that point it is up to the Northwest delegation to work together to address the critical issues related to creating an open transmission system. I look forward to this discussion and to working with my colleagues after this hearing to build consensus on this important issue.

FISH AND WILDLIFE PROGRAMS

Finally, last year, after listening closely to the concerns of my constituents, I offered an amendment to the Northwest Power Act as an amendment to last year's Energy and Water appropriations bill that created accountability in the process by which over $100 million in annual Bonneville ratepayer funds are spent on fish and wildlife programs. I believe that accountability in Federal efforts to protect fish and wildlife populations is an essential part of restoring fish runs, but it is also important to restoring ratepayer con-

fidence. Simply put, Bonneville ratepayers want to know that their hard-earned dollars are being spent wisely, and not just going down the drain.

My amendment on accountability put us on the right track, but there is still ample opportunity to do more. Our goal must be a greater role for the region in the fish and wildlife decisionmaking process, and greater accountability in the expenditure of these limited dollars. With these thoughts in mind, I look forward to the testimony of our witnesses.

And I am now joined not by a Senator from one of the four States to which I put out special invitations, but to another member of the Appropriations Committee, my good friend Bob Bennett from Utah, whose thoughtfulness and wisdom on all of these issues is particularly welcome.

Bob, if you have anything you would like to say before we get started, we would be delighted to hear them.

STATEMENT OF ROBERT F. BENNETT

Senator BENNETT. I am delighted to come and hear the kind words, but I have nothing further to add to your opening statement. I will just listen with interest.

Senator GORTON. Now, I understand, Mr. Hardy, you have a statement and General Griffin has a statement. Mr. Keys is here to answer questions, but does not have a formal statement, is that correct?

Mr. HARDY. That is correct.

Senator GORTON. All right, Randy, have at it.

STATEMENT OF RANDALL HARDY

Mr. HARDY. Thank you, Mr. Chairman, and thank you for the invitation for this year's Senate Appropriations Committee hearing. For the last 3 to 4 years, Bonneville has been facing the challenges of a very dynamic and rapidly changing electric utility industry. We have seen a price progression that goes something like this: In the late 1980's the avoided cost of new generation, which was the competitive benchmark that we were measuring our power against was some 5 cents a kilowatt hour. In 1992, when the Energy Policy Act passed, the avoided cost of new generation was a new gas fired combustion turbine at about 3.5 cents a kilowatt hour. And today, the competition is less than 2 cents a kilowatt hour, our wholesale rate being essentially about 2.2, 2.3 cents a kilowatt hour. That progression gives you some idea of how dramatically wholesale prices have fallen in the Northwest, and the competitive challenges that have faced Bonneville.

This competition or this price drop and the problems that it has presented for us have been driven by essentially four factors. One is the opening up of transmission access pursuant to the Energy Policy Act of 1992; second is record low natural gas prices nationwide, but particularly in the west coast area; third is a general surplus of electricity on the west coast; and fourth has been the entrance into the marketplace of new marketers and other players who have marketed quite aggressively, and, in fact, have in many cases bid below cost to gain market share. While these are challenges to Bonneville, they have produced undeniable economic ben-

efits for Northwest consumers, and one would hope that they would continue.

BPA'S RESPONSE TO COMPETITIVE PRESSURE

Our response to these dramatic changes has been to take a number of actions, many of them controversial but all of them necessary, to try to cut our costs, increase our revenues, and generally stabilize our financial situation. Over the last 3 years we have cut $600 million a year from our budget. We took a budget that in our fiscal year 1995 budget submission started at about $2.3 billion in operating costs and net interest expenses and grew to a little over $3 billion in a 5-year period, and we basically have flat-lined it so that it is at $2.3 billion and it will stay at $2.3 billion for the next 5 years.

Last year we completed a 1,000-person downsizing of both Bonneville employees and full-time contractors. We are now about midway through our second 1,000-person downsizing, to be completed by fiscal year 1999. By the middle of fiscal year 1999 we will be an agency of combined Bonneville staff and full-time contractors of about 3,000 employees. That will contrast with an agency of well over 5,000 employees in fiscal year 1994. That gives you some idea of how fast we have come down in staffing.

Thanks to the cooperation of the Northwest congressional delegation and the administration, we have worked out an agreement to stabilize our fish costs for the next 5 years, at an average expenditure level of something over $400 million a year. We have terminated two nuclear plants. We have reinvented our conservation programs to take them from being basically grant programs that were rate-based to fee-for-service programs that have to recover all of their costs. We have worked out arrangements with investor-owned utilities in the Northwest to phaseout the residential exchange program in ways that minimize the rate impacts on them and eliminate the competitive pressure on Bonneville.

Again thanks to work from the delegation, we have attained special variable separation incentive authority in the fiscal year 1996 appropriations bill that has been a major and helpful tool in achieving the downsizing numbers that I just described.

And finally, we have renegotiated all of our power sales contracts which were due to expire in 2001. We renegotiated the last 5 years of those contracts to allow both direct service industries [DSI] and our public utility customers a guaranteed amount of diversification, typically on the order of 15 to 20 percent, in exchange for a take or pay type obligation for the remaining 80 or 85 percent of that load. This has helped to stabilize Bonneville revenues, while still allowing our customers some access to the market. As a result of these actions, on October 1 of last year we instituted a 5-year rate that represented a 15-percent rate decrease from our previous rate. Our basic public utility rate went from 27 mills down to 24.5 mills, and our rate for high load factor customers, like DSI customers, went from 26 mills to 22.5 mills.

What all these actions have done is basically buy time. We are not out of the financial woods yet, but we have 2 to 3 years, I think, to fashion the longer-term solutions. We have spent the last year with the Governor's regional review panel obtaining an excel-

lent set of recommendations that I think provide a good point of departure for restructuring Bonneville in this Northwest electric utility environment. We can, I think, proceed now to implement those recommendations or variants of those, and look to other activity here, in the Congress, as well, and hopefully with administration support.

FUTURE CHALLENGES

Our real challenges now are in the post-2001 period. They center around implementing the regional review recommendations. Now, I should make clear that the administration is looking at the recommendations, but has not yet adopted any formal position on them. It is my hope that we can work with key members of the administration, both in the Department of Energy and elsewhere, and with both House and Senate staffs, the Northwest delegation, and the Governor's representative, to formulate a similar package of consensus recommendations, both administrative and legislative, that will address our issues in the post-2001 period.

FOCUS OF REGIONAL REVIEW

The regional review recommendations center on essentially two things. The first is devising a subscription process to allocate out our power, at cost, for the long term in the post-2001 period. If it can be executed, this should allow Northwest customers to continue to enjoy cost-based rates, but should also provide financial stability for Bonneville, protect the taxpayer investment in the Federal hydro facilities and transmission facilities, and yet also eliminate the kind of competitive threat that we may pose to investor-owned companies if we were a so-called aggressive marketer in this role. The goal of the regional review is to find a niche for us as a long-term allocator at cost that not only protects the Treasury and secures our revenues, but also represents the best balance between simply abolishing the Bonneville marketing function and having us be some sort of a full-scale marketer ala Enron or somebody else, both of which are not particularly attractive roles. Key in this set of issues that needs to be resolved for the subscription process to be successful are some stability and post-2001 fixed costs. I am confident that working with the administration and the delegation we can be able to successfully address those issues.

The second part of the regional review recommendations have to do with a recommendation to legislatively separate our marketing and transmission functions. The basic rationale behind this recommendation has to do with the fundamental conflict that currently exists between the Energy Policy Act and the way FERC is appropriately implementing that law and Bonneville's organic statutes. The conflict is this: A key premise of the Energy Policy Act of 1992 is that major transmission owners like Bonneville should not be able to use their transmission ownership advantage to manipulate their transmission business to advantage their power business and disadvantage the power businesses of their competitors, this is fundamental to have a competitive, level playing field at the wholesale level.

The problem this presents is such that when the decisions relative to this issue gets into my office, all Bonneville's organic stat-

utes were written at a time when you have a single vertically integrated utility with a single administrator who has a number of obligations, principle among which is thou shalt make one's Treasury payment. Every September 30 we write a check of roughly $800 million that pays off the amount of debt, interest, and operating expenses that are due on the dams and the transmission system. We have made 13 of those payments in a row. We plan on making it 14 this fiscal year, and are confident we can do that.

But the position that leaves you in legally is that if you can manipulate as administrator—if you need to and you can manipulate your transmission to advantage your power business and thereby optimize the chance of you making a Treasury payment, you probably have a legal obligation to do that. That is so fundamentally in conflict with the Energy Policy Act that I think it presents clear political sustainability challenges over time, and hopefully working with the administration we can get some recognition of that and proceed to address that, whether it is through full legal separation or some other mechanism.

ADDITIONAL CHALLENGES

Finally, in the post-2001 period, Bonneville, in addition to implementing the regional review recommendations, is taking actions on its own. We have a goal of 2 cents in 2000 for our power product. We are at about 2.25 cents now, so we have to cut our costs by another 10 percent or so, which we are busily engaged in doing. We think 2 cents in 2000 will make our power product competitive in most but not all market scenarios. And second, we have a goal of flat transmission rates for 10 years, so that we are not just shoving costs onto the transmission system. We need to keep those rates stable, as well.

The basic problem that we now have is that the actions I have just described have stabilized us for the next 2 to 4 years, but we have a problem where literally all of our power contracts expire on October 1, 2001. On October 1, 2001, 75 percent of our revenues are up for grabs. We have to take actions now, hopefully pursuant to the regional review recommendations or some acceptable version of those, that will mitigate that 2001 cliff problem.

PREPARED STATEMENT

From my perspective, the sooner we can address these issues the better, whether administratively or legislatively. The closer to the 2001 cliff we get, the less options we have. So the sooner we can take action, the better equipped we will be to deal with these issues and the more options we will, in fact, have on the table. I am hopeful, Senator, of counting on your support and the delegation's support, as well as the Governors' and the administration's support, in collectively addressing these issues in a unified bipartisan way to achieve the results that will stabilize Bonneville to enter into the 2001 period in an appropriate manner.

Thank you very much.

[The statement follows:]

PREPARED STATEMENT OF RANDALL HARDY

Mr. Chairman and Members of the Subcommittee, I appreciate this opportunity to come before you to discuss past and anticipated challenges facing Bonneville and to present an overview of the fiscal year 1998 budget for the Bonneville Power Administration.

Bonneville, like the utility industry in general, is amidst a time of great challenge and change. The Subcommittee's attention and support continue to be essential as we work to address the challenges we face in the Northwest. First, I will discuss the recent market challenges and the actions we have taken to meet those challenges. Next I will discuss Bonneville's ongoing activities as we look ahead to the continuing changes in the industry, and also provide an overview of the fiscal year 1998 budget.

MARKET CHALLENGES

Bonneville is continuing to respond to the substantial challenges from the rapid changes occurring in the industry. The prices of alternative sources to Bonneville power have dropped dramatically over the past 15 years due to changes in the utility industry, deregulation of natural gas, and more recently a power surplus on the West Coast. The resulting increase in competition has brought wholesale market prices to below Bonneville cost-based rates. As a result, Bonneville has lost load as customers have sought other sources of power.

In 1993, Bonneville set out to respond to competition in wholesale power markets. Declining salmon stocks and flings under the Endangered Species Act created additional upward pressure on costs and reduced hydroelectric production. The Energy Policy Act of 1992 and subsequent FERC decisions set the stage for increasing competition at wholesale levels. Bonneville was challenged by declining alternative fuel costs, increasing competition, and growing environmental responsibilities.

MEETING THE MARKET

These forces have converged in such a manner that Bonneville has had to take steps to reshape Bonneville's marketing, planning and organization. After extensive cost cutting, reorganization and downsizing, through the use of voluntary separation incentive authority provided by the Congress and this subcommittee, Bonneville initiated a 13 percent rate reduction for its preference customers for the 5 year period through fiscal year 2001.

To achieve the rate reduction, Bonneville produced new, unbundled products and negotiated power sales contracts with its Northwest preference customers and ten direct service industries. The new contracts provide a high degree of assurance that Bonneville can cover its costs through fiscal year 2001 while enabling customers that wanted to diversify suppliers to do so. A higher proportion of contracts is now take-or-pay, reducing the risk of underrecovery of costs. This ability to stabilize our customer load will provide Bonneville with additional time to meet anticipated future changes in the electric power industry and help assure our ability to meet Bonneville's Treasury payment obligations. Our goal has been to simultaneously become price competitive on a long term basis, to bring enough stability to costs and revenues to retain customers, and to revise resource and marketing programs to reflect major changes in the agency's resource base and environmental obligations.

As part of its drive to remain competitive, Bonneville has continued to implement stringent budget and FTE reductions. Three major cost cutting efforts since early 1995 have produced total reductions averaging $600 million per year relative to the fiscal year 1995 Congressional budget.

Congress and the Administration have helped immensely by stabilizing and providing some certainty as to Bonneville's contribution to Northwest fish and wildlife restoration and mitigation. Bonneville, through an agreement with the Administration, has been able to stabilize fish and wildlife costs through fiscal year 2001. Prior to the agreement, fish and wildlife costs had been steadily increasing. Under the agreement, Bonneville will spend an average of $252 million each year for fish and wildlife costs, plus hydro operations called for under the 1995 Biological Opinions of the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. These hydro operations costs for fish are expected to range from $90 to $280 million per year depending on water conditions. One of the elements of the Administration agreement was the establishment of a Bonneville Fish Cost Contingency Fund consisting of credits to be used by Bonneville against fish and wildlife costs under certain conditions. Bonneville has certified to the Treasury, without objection, that the amount of available, unused credits is $325.2 million.

Bonneville has, in addition to these cost management efforts, reinvented its conservation program. Bonneville is transitioning from centralized, Bonneville-funded programs. Bonneville is now moving to new customer-driven approaches with a focus on market transformation activities. Cost effective energy efficiency services are being developed to meet the needs of our customers and to create business opportunities for the private sector in the Pacific Northwest.

Congress, in the Energy and Water Development Appropriations Act of 1996, provided Bonneville with additional flexibility to market excess federal power and thus increase revenues and improve its competitive position. The authority allows Bonneville to sell "Excess Federal Power" both in and out of the Pacific Northwest without the restrictions that would apply in the absence of this legislation. Excess Federal Power is federal power that is made surplus to the needs of Bonneville's customers in the Region as a result of the reduction in firm purchases by regional customers or by operating the hydrosystem for the benefit of fish and wildlife.

The 1996 Appropriations Act also provided the Bonneville Administrator with authority to offer employees voluntary separation incentives, or VSI's, not to exceed $25,000, through the year 2000. This VSI authority provided the Administrator with additional flexibility to control costs and restructure Bonneville to meet competitive conditions.

The Congress also enacted language to maintain the residential exchange program through fiscal year 1997 while providing Conference Report language stating that, consistent with the Regional Review, Bonneville and its customers should work together to gradually phase out the residential exchange by October 1, 2001. To date, we have reached phase-out agreements with all publicly-owned utilities that have participated in the exchange program. In January, 1997, we reached a phase-out agreement with one investor-owned utility and we are currently in the process of finalizing a phase-out agreement with another.

Bonneville has, through implementation of these measures been able to reduce its rates and hold them level through fiscal year 2001. These efforts reflect a continuing effort on the part of Bonneville to reduce costs to assure competitive electric rates, thereby protecting the investment of the Federal taxpayer in the Federal hydroelectric system in the Pacific Northwest and to better ensure our ability to deliver public benefits to the region.

LOOKING TOWARD THE FUTURE

Beyond 2001, the market is expected to continue to be highly competitive and dynamic. Bonneville will need to be able to meet the market and be competitive.

Fish costs remain uncertain after 2001 when the fish agreement ends. Steps will have to be taken to continue to manage these costs in an environment that will continue to be competitive and dynamic.

Bonneville was able to negotiate take or pay power sales contracts with many of its public preference and direct service industrial customers. These contracts enabled Bonneville to stabilize its revenues through fiscal year 2001 while providing some load diversity desired by our customers. We were able to do this because we cut our costs and reduced our rates to remain competitive.

These contractual commitments have provided the time needed by the region, the Administration, and the Congress to review and take appropriate actions to assist Bonneville to meet continuing market challenges. We must understand that while we do have some time to address these challenges, after fiscal year 2001 over 75 percent of Bonneville load will become available to the competitive marketplace as power sales contrasts expires.

Prior to fiscal year 2002, Bonneville will need a successful power sales process in conjunction with continued cost management and operational efficiencies in order to maintain a commercially successful business with stable revenues and a strong ability to meet its Treasury payment obligations. Bonneville is working aggressively to control costs and achieve our target of wholesale electric power rates of 2 cents and flat transmission rates in the year 2000.

The combination of scheduled reductions in Bonneville sales to its Northwest customers, pressures to reduce its costs, electricity restructuring issues, and fish and wildlife mitigation issues make the next five years critical for Bonneville. Decisions about Bonneville power and transmission will impact the Pacific Northwest economy, funding for environmental protection, and repayment of the Federal investment.

COMPREHENSIVE REVIEW OF THE NORTHWEST ENERGY SYSTEM

The Northwest governors, in response to the many changes and challenges facing the Northwest, initiated a year-long Comprehensive Review of the Northwest En-

ergy System. This Regional Review served as a forum for discussion about the restructuring of the electric utility industry and what it will mean to the Pacific Northwest.

A final report was released in December 1996. The report included recommendations to: legally separate Bonneville into power marketing and transmission agencies; create a FERC-regulated independent grid operator that would include transmission facilities owned by Bonneville; sell federal power by subscription in tiers of eligibility for terms of 5 to 20 years; allow Bonneville to be free to charge a market price for its power to the extent regional entities do not either purchase power on a long-term basis or pay option fees; continue public and regional preference for federal power; allocate to Treasury some share of savings when Bonneville power is below market; invest approximately $210 million in public benefits; defer to state and local levels the determination of how to collect money for public benefits; allow retail customers to choose their own electricity supplier by July 1999; leave implementation of customer choice at the retail level to the states, and ask the governors to initiate discussions to resolve river governance issues.

To ensure public accountability, regional acceptance and prompt implementation, the governors appointed a transition board that will remain in place until the recommendations of the Review are implemented, or until the year 2001, whichever is sooner. The board has prepared a strategic plan which was submitted to the governors in February, 1997. The strategic plan includes recommendations for implementing the Regional Review's report.

Bonneville is working with the governors' representatives, the Northwest delegation, and the Administration to assess the feasibility of implementing these recommendations. The Administration is currently in the process of reviewing the recommendations.

BONNEVILLE TREASURY PAYMENTS

As a fundamental aspect of Bonneville's efforts to remain competitive, Bonneville takes seriously this Committee's direction that Bonneville make its planned payments to the U.S. Treasury in full and on time. I am pleased to report that last year we made our annual payment to the Treasury of more than $800 million on time and in full. This is the thirteenth consecutive year that Bonneville has made its payments on time and in full. Bonneville's ability to make the Treasury payment was ensured, in part, by implementation of stringent cost cutting measures and stabilization of Bonneville's fish and wildlife costs through the Administration's agreement. In spite of the challenges we continue to face, Bonneville anticipates being able to make its fiscal year 1997 Treasury payment of $791 million in full and on time.

Since 1937, when it was created, through fiscal year 1996, Bonneville has returned $13.3 billion to the U.S. Treasury in interest, amortization, and operations and maintenance of the Federal facilities of the Federal Columbia River Power System. During fiscal year 1997, we anticipate paying $791 million to the Treasury, of which $205 million will be applied to repayment of the principal on debt, $454 million will be interest, and the balance of $132 million will reimburse the Treasury for appropriations provided to the Army Corps of Engineers and the Bureau of Reclamation for the power portion of annual hydroelectric facilities operation and maintenance expenses and Bureau of Reclamation irrigation assistance. Starting in fiscal year 1997, with $41 million, Bonneville will directly fund the power portion of Bureau of Reclamation power operations and maintenance expenses.

FISCAL YEAR 1998 BUDGET OVERVIEW

Bonneville's fiscal year 1998 budget has been prepared on the basis of its three major areas of activity; power, transmission, and conservation and energy efficiency services. This new structure supports Bonneville's reorganization undertaken to become more competitive in the rapid restructuring of the deregulated wholesale electric energy market, and evidences its commitment to implement FERC's functional separation and standards of conduct requirements.

This budget incorporates and reflects Bonneville's continuing efforts since the fiscal year 1995 Congressional budget submission to cut costs, increase efficiencies, realign its operations, and remain competitive. The budget is consistent with the rate decisions made by the Administrator in July 1996, and approved on an interim basis by the Federal Energy Regulatory Commission in September 1996. The budget also reflects Bonneville's effort to extend the use of its total borrowing authority of $3.75 billion. Under this budget, the total borrowing authority limit is not expected to be reached until after fiscal year 2001.

Since its activities are funded by sales of power, transmission, energy efficiency services, and proceeds of bond sales to the Treasury, Bonneville does not request or receive annual appropriations. Bonneville's fiscal year 1998 budget estimates total obligations of $3,239 million and capital transfers/debt reduction of $228 million. Total obligations include $2,986 million in operating expense obligations and $253 million in capital obligations.

The following table provides detail for fiscal years 1996 through 1998:

[In millions of dollars]

	Fiscal year		
	1996 actuals	1997 estimates	1998 estimates
Capital investments:			
Power business line	25	20	13
Transmission services	115	175	171
Conservation and energy efficiency [1]	(17)	47	33
Fish and wildlife	31	27	27
Capital equipment	7	8	9
Subtotal capital investments	161	277	253
Borrowing authority:			
To finance capital obligations	161	277	253
To finance other obligations [2]	(87)	(86)	(66)
Total borrowing authority	74	191	187
Total operating expenses	2,902	[3] 1,989	[4 5] 2,986
Capital transfers	268	205	228
Bonneville total	3,244	2,384	3,401

[1] In conjunction with the termination of various conservation programs and changes in project workplans, Bonneville has deobligated several conservation projects resuming in a negative obligation balance in fiscal year 1996. During fiscal year 1996, about $39 million was obligated and about $56 million was deobligated resuming in a net balance of $17 million.

[2] Borrowing authority to finance other obligations represents the use of or the building up of deferred borrowing.

[3] Fiscal year 1997 Expensed Obligations reflect Energy and Water Development Appropriations Act, Public Law 104–46, which establishes residential exchange costs at $145 million. All other fiscal years reflect gross exchange costs that are partially offset by exchange revenues.

[4] Starting in fiscal year 1998, Bonneville's budget assumes that Bonneville will begin to cover the full unfunded liability of the Civil Service Retirement System and Post-Retirement benefits of both Civil Service and Federal employees. Cost recovery is assumed to be phased in over a ten-year period of time given that wholesale power and transmission rates for Bonneville are contractually frozen until the end of fiscal year 2001 in order to meet competitive market pressures. The fiscal year 1998 amount is $2.2 million.

[5] The fiscal year 1998 budget estimates that Bonneville will receive a $60 million 4(h)(10)(C) credit against its Treasury repayment responsibilities for fiscal year 1998. This credit is consistent with the Administration's agreement with Bonneville under section 4(h)(10)(C) of the Regional Power Act (Public Law 96–501).

CONCLUSION

Again, Mr. Chairman, we have been faced with substantial challenges. I believe we have taken appropriate actions and through these efforts we have gained some valuable time to reflect and to be able to take future actions to assure that Bonneville remains competitive. These actions will help assure that we continue to provide competitive electric rates and protect the investment of the Federal taxpayer in the Federal hydroelectric system in the Pacific Northwest. This budget reflects our continuing efforts to achieve these goals. Mr. Chairman, that completes my testimony. I would be happy to answer any questions you might have.

STATEMENT OF BRIG. GEN. ROBERT GRIFFIN

Senator GORTON. General Griffin, we are pleased to have you here today. You may proceed.

General GRIFFIN. I am Gen. Robert Griffin. I am the Commander of the newly formed Northwestern Division. It came into being on

the 1st of April of this year as a result of the 1997 Energy and Water Development Act which directed the Corps to reduce the division structure to between six and eight divisions. The Northwestern Division combines the North Pacific Division, sir, that you are probably most familiar with, you and Senator Craig, and the Missouri River Division. What I want to let you know is I will operate out of two regional offices, one in Portland and one in Omaha. And so we are going to have that regional focus both in the Pacific Northwest and in the Missouri River region, and that will not be lost. I do lose Alaska, but I retain the districts of Walla Walla, Portland, Seattle, Omaha, and Kansas City.

I appreciate the opportunity to appear before you today to answer any questions you may have, and, sir, I got your letter of March 28, and you had a number of questions in there. I have submitted written testimony for the record that hits on every one of those points that you raised. What I did want to do, though, was highlight a couple of, I believe, the more important issues that you probably want to hear in my opening statement, and that is the BPA direct funding of Corps hydropower activities, and also the drawdown studies on the lower Snake River and John Day Reservoir.

DIRECT FUNDING OF HYDROPOWER ACTIVITIES

Sir, regarding the direct funding of hydropower activities, the Corps does support direct funding of BPA's hydropower mission. That is our bottom line. I think our position is best described in the Assistant Secretary of the Army for Civil Works, Martin Lancaster, letter to the Deputy Secretary of Energy dated the 24th of December, and in it he said we are working on an expanded MOA for direct funding, and that MOA would cover nonroutine major maintenance and major rehab costs which could be in the $40 to $60 million a year range. That is what we could be operating at in direct funding.

The principal concern with the proposed MOA, as given to us by Mr. Curtis, the Deputy in DOE, has to do with funding of our routine or baseline maintenance. We believe the Army has a need to control daily operations of the Corps projects for many purposes beyond hydropower that these projects serve. That is kind of the bottom line.

We believe that an adequate source of funding is central to the Corps' ability to function, and, therefore, according to Mr. Lancaster, it may be appropriate for baseline O&M costs to continue as an annual appropriation for which BPA reimburses the Treasury.

Sir, we do understand, however, that increased direct funding by BPA could represent discretionary appropriations savings in the 1998 Energy and Water appropriations bill, and, because of that, we had been waiting on a response to Secretary Lancaster's letter with a revised MOA, and just yesterday we received a letter from Mr. Curtis, Deputy at DOE, responding to our concerns, and the bottom line is this, sir, we are down to this one direct funding issue on routine O&M maintenance, and with this letter back I believe now that we can start working out an agreement.

LOWER SNAKE RIVER DRAWDOWN STUDIES

Sir, on the Snake River feasibility study, as you know, we are conducting the drawdown study of four dams on the lower Snake River. It is being conducted in accordance with the March 1995 announced biological opinion on hydropower operation. It is a detailed engineering, social, economic, and biological analysis. The draft report and the environmental impact statement that go with it will be published in draft form in the spring of 1999.

Senator GORTON. Let me just interrupt you there to emphasize that this study is not just the study of the impact on fish, but it is including as broad a set of social, economic, and cultural costs in other respects as is possible for you to come up with?

General GRIFFIN. An emphatic yes, sir.

Senator GORTON. Go ahead.

General GRIFFIN. Sir, the final report and EIS are due in December 1999. And, sir, we do understand another point that you raised was how would we do our regional interface, and realizing the importance of this, because of the way we do this feasibility study and EIS process, we will be very involved with the region. We will hold many public meetings and workshops, and they will be conducted for the public interest groups, State and Federal agencies, native American tribes, and, as important, the scientific groups.

Sir, we will also communicate through our existing workshops that are associated with NMFS regional forum process. Sir, I point out one thing, that one of the scientific groups, an economic study group that has also been formed that is going to feed in economic data and impacts of the drawdown of the lower Snake dams.

JOHN DAY RESERVOIR DRAWDOWN

Sir, on the proposed John Day Reservoir drawdown, as you may know, we have already done a reconnaissance level study on the minimum operating pool, or MOP, for John Day drawdown, and I know that was one of the concerns—will we look at MOP any further. With the data we have, we will not. We have enough data on that.

Now, the evaluation work that we were doing was suspended in accordance with direction provided in the conference report accompanying the 1996 appropriations, pending scientific justification. NMFS provided that scientific justification in December, and Secretary Lancaster transmitted our request, then, for funds with the scientific justification on February 25. The Energy and Water Subcommittees in the House and the Senate are presently considering our request to reprogram $1.5 million this fiscal year, and we are also asking for $3.2 million for next fiscal year. However, sir, until funding is approved, this letter gets approved, a scope and the cost and the schedule cannot be defined.

Sir, and one final point, and I think this is one I know you raised and are very concerned about, regarding implementations of drawdown in both John Day and the lower Snake River. Sir, we believe we do not have authorization to proceed without additional statutory authority because of the expected significant impacts on the various project purposes. So we are going to have to come back

for reauthorization to implement any study finding that we may have in either location.

PREPARED STATEMENT

Senator GORTON. I am delighted to hear that.

General GRIFFIN. Sir, that concludes my remarks.

[The statement follows:]

PREPARED STATEMENT OF BRIG. GEN. ROBERT GRIFFIN

Mr. Chairman, Committee members, and distinguished guests, I am Robert Griffin, Commander of the recently formed Northwestern Division. The Northwestern Division was designated on April 1, 1997, as part of a larger division restructuring plan in response to Public Law 104–206, Energy and Water Development Act, 1997, which directs the Corps of Engineers to reduce the number of its Divisions. The Northwestern Division, which retains the districts supporting the Columbia River, was formed from the North Pacific Division and the Missouri River Division, with headquarters located in Portland, Oregon and Omaha, Nebraska.

I appreciate the opportunity to present the views of the Corps of Engineers and the Department of the Army for the record on this hearing about Bonneville Power Administration's fiscal year 1998 budget and financial status, Corps of Engineers activities, and other issues. This statement addresses the topics and specific questions identified in your March 28, 1997 letter to me.

DIRECT FUNDING

The Army generally supports, with the qualifications noted below, direct funding by the Bonneville Power Administration for power operations and investments at Corps dams. As a matter of fact, there is in place an agreement between the Army and BPA entered into under the authority of Section 2406 of the National Energy Policy Act of 1972, providing for BPA funding of capital improvements. We have been working very hard to expand the scope of the existing agreement and, in this regard, the Assistant Secretary of the Army (Civil Works) wrote a letter, on February 24, 1997, to the Department of Energy enclosing a proposal for modifying the existing agreement to achieve that end. I am attaching a copy of our proposal to the Department of Energy. Before I discuss our views on the appropriate scope and context for such an agreement, I will review some of the activities we have funded and expect to fund under provisions of Section 2406.

Since January 1995 we have used BPA direct funds to carry out $8.1 million of non-routine operation and maintenance activities for power facilities. These activities include generator repair, studies, turbine improvements, and generator exciter replacements. We reached an agreement last week with BPA to fund the emergency repair of Ice Harbor unit 5. We have also submitted a draft proposal to BPA for direct funding of the emergency repair of a program of electrical system reliability improvements. The reliability improvements are the necessary corrective actions in response to the July 2–3 and August 10, 1996 West Coast electrical system disturbances. We are also in the process of developing a proposal for the direct funding of an enhanced non-routine maintenance program at the Ice Harbor project. The purpose of the enhanced non-routine maintenance program would be to ensure a high level of generator reliability during the fish passage season by having pre-positioned parts and contracts available, on-line equipment condition monitoring, as well as "just in time" maintenance being performed. This would differ from the traditional Corps practice of preventative maintenance done on a predetermined schedule and repair of failures as they occur.

As I indicated, we are working within the Administration to develop an expanded agreement for direct funding. We hope to conclude the agreement in the near future which would potentially enable the Committee to realize discretionary appropriations savings in the fiscal year 1998 Energy and Water Appropriations bill. Without prejudice to the on-going discussions, I offer the following information on our views of the proposed agreement to give the Committee insight into the issues being addressed.

The Department of the Army is concerned about modeling an agreement after the one that the Department of Energy has with the Bureau of Reclamation. That agreement with the Bureau is similar to an agreement which has been proposed by BPA to the Army. The Army has provided comments to the Department of Energy on the proposed Direct Funding Agreement for Operations and Maintenance Power Costs between Bonneville Power Administration and the Department of the Army.

Our principal concerns involve the BPA proposal to directly fund all operations and maintenance (O&M) costs, a proposal for binding arbitration, and a proposal for monetary performance incentives.

The most important issue for the Army is the need to control the daily operations of Corps projects for the many purposes, beyond hydropower, that these projects serve. An adequate source of funding is central to the Corps' ability to function. Thus, we believe it is appropriate for baseline O&M costs to continue as annual appropriations for which BPA reimburses the Treasury. Baseline O&M costs are also called "routine" costs, and they include personnel costs, small supplies and materials, custodial contracts, and costs associated with the routine, day-to-day operations and maintenance of the reservoir systems. While the Army is unprepared, at this point, for BPA to directly fund baseline O&M, there are numerous opportunities to use direct funding from BPA. For example, costs for major rehabilitation projects, and non-routine maintenance are two large categories of expenditures that are available for direct funding. Those costs, exclusive of the costs of projects currently directly funded under an existing BPA-Army agreement, would range from $40 to $60 million annually.

A second concern involves the provision for binding arbitration. The draft agreement proposal to subject the agencies to binding arbitration in the event of any unresolved disagreement is an unnecessary step and may inappropriately limit the Corps' authority to maintain and operate its projects as required by law. While the Army supports the use of alternate dispute resolution, final resolution of agency disputes, where the Corps discretionary authority is not an issue, should rest with either the Office of Management and Budget or the Department of Justice, as provided in the existing BPA-Army agreement, rather than with a non-Federal, private individual.

Last, the BPA proposal to provide monetary incentives for performance is of concern. We share BPA's desire to ensure satisfactory hydropower performance, but believe there may be better means of achieving this goal.

We have provided these comments to BPA and have been meeting to discuss resolution and presently await BPA's response to our comments dated February 24, 1997.

NON-FEDERAL PARTY CONSTRUCTION ON FEDERAL HYDRO PROJECTS

All costs associated with development of hydroelectric power at the site of a Corps project are borne, one way or another, by non-Federal sponsors. The following remarks are in regard to the status of non-Federal hydropower development and Corps dams in the Columbia River basin.

Northern Wasco County PUD has developed a hydro-electric project through the FERC process at The Dalles Dam. The 8.5 MW project was completed in 1993 at a cost of about $15 million. The project generates power from flows used as part of the fish bypass facility. The PUD is also constructing a FERC licensed 10 MW project at McNary Dam. This project is scheduled for completion later in 1997.

We are aware of some specific proposals for non-Federal development of hydropower projects at Corps facilities in the region. Idaho Water Resources Board has a FERC license to construct and operate a 2.5 MW small hydropower project at Dworshak Dam. The project would generate power from releases/flows that are conveyed by pipelines to the Clearwater Fish Hatchery and the Dworshak National Fish Hatchery. The cost to provide the power is estimated at 21.5 mill/kwh. FERC has determined that with appropriate environmental protective measures, that the project would not "significantly affect the quality of the human environment".

Utah Associated Municipal Power Systems proposes to add generating capability onto the existing Corps powerhouse at Dworshak Dam, and install one generating unit with a 40 MW capacity. They are working through FERC to obtain a preliminary permit. A preliminary permit does not authorize construction, but allows for additional studies, such as economic, engineering plans, and environmental.

The Corps of Engineers and Colville Confederated Tribes (CCT) are currently conducting feasibility studies to determine the potential Federal interest in raising the Chief Joe Dam pool by 2 to 4 feet for the purpose of providing additional power generation. In addition, the CCT has expressed an interest in upgrading the turbine components of the existing units 1–16 to increase generation and capacity. This is currently an active study, and no conclusions have been reached in regard to environmental effects or energy production costs. There are no situations in the region in which Federal facilities have been upgraded by non-federal parties.

LOWER SNAKE AND JOHN DAY DRAWDOWN

The Corps, in cooperation with other Federal and regional interests and the public, is presently carrying out a feasibility study of natural river level drawdown at the four Lower Snake River dams. This detailed engineering, biological, social and economic analysis is scheduled to be completed in 1999 as called for in the National Marine Fisheries Service March 1995 biological opinion on hydropower operations and will be the basis for regional, Federal and potentially Congressional decisions on whether drawdowns should be implemented. An Environmental Impact Statement will be prepared with the feasibility study. In fiscal years 1993–95 the Corps was proceeding with advanced planning and design to implement mitigation for a drawdown to minimum operating pool (MOP) at John Day dam as called for in the biological opinion. No evaluations of drawdown below MOP at John Day have been conducted to date. In response to Conference Report language (House Report No. 104–293) accompanying Public Law 104–46, Energy and Water Development Appropriations Act, 1996, this work was suspended pending development of further scientific justification of drawdown as a recovery measure. This justification with request for concurrence in funds reprogramming to begin evaluation of drawdown was sent to the Energy and Water Development subcommittees by letter of February 25, 1997 from Assistant Secretary Lancaster. The subcommittees are presently considering our request for concurrence in funds reprogramming for the Corps to begin further evaluation in fiscal year 1997. We have also requested funding to continue this work in fiscal year 1998.

In the Lower Snake River Juvenile Salmon Migration Feasibility Study the only drawdown option continuing to be evaluated by the Corps is the permanent natural river alternative. Mid-level drawdowns have been eliminated from consideration due to biological risk factors for salmon and implementation cost. In general, implementation actions for natural river would include the total removal of the earthen embankment section which exists at each lower Snake River project along with some additional channel development and expansion. Under this alternative, the existing powerhouses, spillways and navigation locks would remain in place and would require some type of protection. Those remaining structures would be decommissioned and essentially mothballed. Implementation cost for modifications at the four dams is estimated at $530 million on a preliminary basis. That cost does not reflect mitigation measures along the reservoirs, nor other economic and social costs.

Drawdown impacts

The implementation of drawdown on the lower Snake River will radically change or eliminate the current multi-purpose uses of the lower Snake River. Those changes have been addressed in previous reports such as the System Configuration Study Phase I, the Columbia River System Operation Review (SOR), and most recently in the Corps Lower Snake River Juvenile Salmon Migration Feasibility Study Interim Report published in December 1996, A summary of potential impacts follows:

Irrigation.—A 1991 inventory of the lower Snake River Projects identified a total of 31 water withdrawal facilities on the four lower Snake River Projects. All of these facilities would be rendered unusable without significant modifications.

Navigation.—All commercial navigation on the lower Snake River from its confluence with the Columbia River, to Lewiston, Idaho would be eliminated.

Fish passage.—Qualitative and quantitative information relative to anadromous fish benefits associated with a natural river operation is very limited. The issue of the effects of juvenile fish transportation versus in-river migration is at the very root of the regional debate. With this in mind, it is fair to say that a natural river condition will provide better in-river conditions than currently exist for both juvenile and adult salmon migration. Juvenile travel times will be significantly reduced and current dam passage mortality would likely be eliminated. Predator prey relationships are not well understood, but a reduction in predation may be possible. Not considered in these assumptions are the fish impacts that may occur associated with construction activities and near-term environmental disruptions following construction. What cannot be determined with high confidence at this point is the expected increased survival for both juveniles and adults out of the Snake River and what contribution that would make to the overall salmon recovery effort.

Power operations.—Power production from the four lower Snake River Projects will be eliminated. The four Lower Snake River projects produce approximately 10 million megawatt hours of electricity on an average annual basis.

Recreation.—The net impacts on recreation are not clearly understood at this point. Obviously the type of recreation experience that the projects currently provide and the existing facilities on these projects will be significantly changed or elimi-

nated. However, these perceived lost opportunities are likely to be replaced by a different type of recreation experience. What overall impact that these changes will have on total project visitation is unknown at this time and are a part of the feasibility analysis.

Flood control.—The four lower Snake River projects currently provide no flood control benefits, thus the implementation of natural river drawdown would have no adverse affect from a flood control standpoint.

Other impacts.—Other potential impacts that have been recognized, but not clearly understood, include resident fish, water quality and cultural resources exposure. Additional analysis on these is under way.

As part of the ongoing feasibility study, the Corps is engaged in a very intensive regional effort to accurately identify the economic impacts of the drawdown alternative. At this point, the best available information exists in SOR. Although the SOR analyses are being reviewed and revised, the following results from an alternative in SOR with the four Lower Snake River dams at year-round natural river level is provided for information on the relative annual economic effects among uses, particularly the relative magnitude of navigation to hydropower system impacts. Clearly, the impacts on power are the largest. The recreation impact will very likely be revised substantially downward in the current analyses. These costs do not include environmental mitigation, cultural resource costs or total economic impact costs. SOR FEIS alternative 5c economic effects summary:

Feature	*Annual Cost In millions*
Hydro Power	132
Recreation	72
Implementation/Construction	45
Navigation	30
Municipal and Industrial Water	4
Irrigation	4

Future costs for capital investments and operation and maintenance of the dams would be avoided with drawdown. These costs would include future powerhouse rehabilitation (approximately $200 million) and the annual O&M ($27 million per year) for the existing dams. Future fish passage investments at these dams would presumably be avoided with drawdown as well.

No estimates of the impacts associated with drawdown to spillway crest at John Day have been made by the Corps of Engineers.

Drawdown evaluation process

The Corps is currently conducting a Feasibility Study/NEPA process for the Lower Snake River. The objective of that study is to document the Federal decision for the long term operation and configuration of the lower Snake River projects. Integral to any NEPA process is a requirement to provide the general public an opportunity to understand the issues, alternatives, and environmental impacts, and to have a role in the formulation of a final decision. The Corps fully intends to honor that requirement throughout the study process. In conjunction with this study effort we will be conducting workshops and hearings throughout the region. We will also be providing periodic newsletters and special reports which will be made available to the public as well.

Recognizing the critical importance of this issue to the region, the Corps will be expanding our effort and will conduct monthly feasibility study roundtable/workshops. The purpose of these workshops will be to provide technical information and status reports as well as to seek public input on a more frequent basis than would be available in a more traditional study process. These workshops are intended to be very informal in nature and will be conducted primarily as a discussion group. The meetings will be open to the general public as well as Federal agencies, state agencies, Indian tribes and public interest groups.

Another critical component of our regional coordination commitment will be tribal coordination. The Corps will make every effort to keep the 14 northwest tribes involved and informed.

Beyond the efforts described above, we will continue to participate in the regional forum addressing salmon recovery established by National Marine Fisheries Service. In various committees of the forum we provide real time status reports on work in progress as well as periodic expenditure information. The forum provides an opportunity for virtually any other Federal, state, tribe or special interest group to influence the scope of our work as well as the use of information and expenditure of funds. Successful completion of this study and the regional decisions that will be a product of the effort are dependent on close coordination and active involvement

of the citizens of the northwest as well as the agencies and tribes that represent them.

The current schedule for this study calls for a Draft Feasibility Report and Environmental Impact Statement in the spring of 1999 and a Final Report and EIS in December 1999. No schedule has been established for John Day at this time.

Legal authority for dam removal

It is our opinion that the Corps cannot use its existing legal authority to remove the lower Snake projects and draw John Day to spillway crest. New statutory authority would be required to undertake these actions since the proposed actions would eliminate or significantly affect specific project purposes provided for in the authorizing legislation.

Congress authorized these projects as part of the Columbia River Basin system to achieve region-wide benefits. The projects in the system are operated for flood control, navigation, hydroelectric power production, irrigation, recreation, water quality and fish and wildlife. The Corps constructed and operates these projects to meet these multiple uses. Within the authority of each project and consistent with the uses of the Columbia River Basin system, the Corps may choose to emphasize a certain project use, but it cannot not do so in a manner which disregards other authorized project uses. Based upon the analysis of the System Operation Review, drawdown of the lower Snake River projects would significantly affect and/or degrade the majority of authorized project uses. A drawdown of John Day project to spillway crest, based upon preliminary observations would also significantly affect navigation, irrigation and other project uses. However, a more comprehensive study regarding this proposed action is necessary before a definitive statement of these effects can be made.

In addition to changes in authorization or additional authorization, the proposed actions would also be subject to additional appropriations by Congress.

John Day drawdown reprogramming request

The reprogramming request dated February 25, 1997 from Assistant Secretary Lancaster to the House and Senate Subcommittees on Energy and Water Development does not specify the scope of technical studies nor drawdown levels that would be evaluated. Rather, it notes that the scope will be developed in coordination with the region upon concurrence of the committees. In view of the previous analysis of drawdown to MOP conducted under the System Configuration Study and under advanced planning and design for MOP implementation it is not anticipated that additional funding is required for acquiring information or conducting analysis of MOP drawdown. We also understand that the Northwest Power Planning Council has recently recommended that no additional funding be allocated for further review of this alternative. This would be consistent with the February 25 letter.

A cost estimate for a study limited to the social and economic impacts of drawing down John Day to spillway crest or natural river levels has not been prepared. Estimated costs would primarily be related to the scope of "social and economic" issues and level of detail. A study plan could be prepared in coordination with regional parties in approximately three months. The period of the study would also depend on the scope and level of detail but could likely be completed in one to two years. This study could be used for further decisions regarding additional analyses of drawdown and would identify future processes for compliance with all statutory requirements such as the National Environmental Policy Act and the Endangered Species Act. If carried out, the additional analyses identified by such a report would provide the basis of a Federal recommendation for Congressional authorization for drawdown implementation.

Mr. Chairman, this concludes my testimony. I will be pleased to address any questions.

LETTER FROM H. MARTIN LANCASTER

DEPARTMENT OF THE ARMY,
OFFICE OF THE ASSISTANT SECRETARY—CIVIL WORKS,
Washington, DC, February 24, 1997.

Mr. CHARLES B. CURTIS,
Deputy Secretary of Energy, Department of Energy,
Washington, DC.

DEAR MR. CURTIS: This is in further response to your letter of November 16, 1996, concerning your proposal to have the Bonneville Power Administration direct fund

the cost of the operation and maintenance of power facilities operated by the Corps of Engineers in the Pacific Northwest.

As indicated in my letter of December 24, 1996, I have a number of concerns with the proposed Direct Funding Agreement you provided for my review. As an alternative to your proposal, I am enclosing a modification of the existing agreement between the Army and BPA entered into under the authority of Section 2406 of the National Energy Policy Act of 1992. The existing agreement provides for BPA funding of capital improvements. The amended agreement would expand the scope of the existing agreement to include BPA funding of non-routine maintenance of the Corps hydropower facilities. The Corps would continue to receive appropriations for its routine maintenance activities. I have discussed the proposal with representatives of the Office of Management and Budget. As a result of those discussions, I am confident they will support the arrangement I am proposing. Upon signing the proposed agreement, I would expect BPA to fund about 60 percent of the Corps annual requirements for operations and maintenance of its power facilities.

I look forward to working further with you on this proposal and hope we can complete this agreement in time to allow direct funding of our fiscal year 1998 requirements.

Sincerely,

H. MARTIN LANCASTER,
Assistant Secretary of the Army—Civil Works.

MEMORANDUM OF AGREEMENT BETWEEN THE BONNEVILLE POWER ADMINISTRATION AND THE DEPARTMENT OF THE ARMY

ARTICLE I—PURPOSE AND AUTHORITY

This Memorandum of Agreement ("MOA") is entered into by and between the Department of the Army ("DA") and the Bonneville Power Administration ("BPA") ("the parties") for the purpose of establishing a mutual framework governing the respective responsibilities of the parties regarding the development of direct funding for hydropower non-routine maintenance, generation additions, improvements, and replacements at U.S. Army Corps of Engineers ("USACE") hydroelectric projects or other projects operated and maintained in the Pacific Northwest Region. This MOA is entered into pursuant to Section 2406 of the National Energy Policy Act of 1992, Public Law 102–486, 16 U.S.C. 839d–1, ("the Act").

ARTICLE II—SCOPE

The DA is responsible for the planning, designing, constructing, rehabilitating, and operating and maintenance of twenty-one (21) hydroelectric projects in the Pacific Northwest Region. These hydroelectric projects are operated and maintained by USACE to meet multiple purposes of water resource development in the Pacific Northwest Region, including but not limited to flood control, navigation, electric power generation, fish and wildlife, water supply and water quality. The DA shall identify the funding requirement for hydroelectric projects and other projects which it operates and maintains in the Pacific Northwest which the DA has determined, consistent with good engineering practice, DA policy and the multiple uses of water resource projects to be suitable for consideration under § 2406 of the Act. The BPA may agree to fund the DA requirement (to include the planning, designing, and construction) for non-routine maintenance, generation additions, improvements, and/or replacements at those projects.

Pursuant to this MOA, the DA agrees to consult with the BPA regarding the priorities for non-routine maintenance, generation additions, improvements and replacements under § 2406 of the Act to USACE hydroelectric projects and other projects which it operates and maintains in the Pacific Northwest Region and to afford to BPA the opportunity to review and comment on the DA's plans respecting the planning, designing, and constructing of generation additions, improvements, and replacements at USACE hydroelectric projects and other projects which it operates and maintains in the Pacific Northwest Region. The Parties agree to coordinate the development of these projects from the earliest possible time, but no later then 120 days prior to the beginning of the next fiscal year. Coordination of these activities must begin sufficiently in advance to meet the scheduling, financial planning, ratemaking, budget and program requirements of each Party.

No item shall be included in the Five Year Plans, or Annual Budgets except as agreed to by the Parties. Any item not included in the Five Year Plans or Annual Budgets, may be included by the Corps in the appropriation portion of its budget. Nothing in this MOA shall be construed to require the DA to provide any goods or

services to the BPA pursuant to § 2406 of the Act, except as may be set forth in the Five Year Plans, Annual Budgets and Sub-agreements.

ARTICLE III—INTERAGENCY COMMUNICATIONS

To provide for consistent and effective communication between the DA and the BPA, each party shall appoint a Principal Representative to serve as its central point of contact on matters relating to this MOA. Additional representatives may also be appointed to serve as points of contact on Five Year Plans, Annual Budgets and/or Sub-agreements. Working groups, mutually agreeable to the Principle Representatives, may be established to support the decision making process by the NPD Division Commander and BPA Administrator.

ARTICLE IV—FIVE YEAR PROGRAM AND ANNUAL MAINTENANCE BUDGETS

The DA and the BPA may conclude mutually agreed upon written Five Year Plans and Annual Maintenance Budgets pursuant to this MOA, respecting DA work the parties agree to direct fund under § 2406 of the Act.

A. Five Year Program—The program identifies the funding requirements for Corps hydropower maintenance, additions, improvements, and/or replacements for each of the five fiscal years in the Program. The initial five period covers the period fiscal year 1999 through fiscal year 2004. After the establishment of the initial Five Year Program, a revised program will be developed for a sliding five fiscal year window. The Five Year Program displays the direct funding level for each of the three NPD districts with hydropower. Exhibit A contains the initial Five Year Program. In addition to the direct funding requirements, Exhibit A also displays the routine O&M and appropriated multipurpose project expenses that BPA is responsible for repaying.

B. Annual Maintenance Budget—The annual budgets identify specific work categories for the hydropower maintenance, additions, improvements, and/or replacements activities covered by this MOA, that are to be accomplished for each fiscal year in the Five Year Plan. Hydropower maintenance, additions, improvements, and/or replacements work items that have a funding requirement greater than $500,000 will be separately identified. These items will be listed as extraordinary maintenance, major replacements, or additions. Exhibit B contains the initial Annual Budget. Additional justifications may be provided, or sub-agreements developed from these budgets.

ARTICLE V—SUB-AGREEMENTS FOR SPECIFIC WORK ITEMS

The parties anticipate that there will be direct funding opportunities that, for reasons of timing and/or magnitude, may require a separate sub-agreement. The DA and the BPA may conclude mutually agreed upon written Sub-agreements pursuant to this MOA, respecting DA work the parties agree to direct fund under § 2406 of the Act. The sub-agreement shall include the following:

—a detailed scope of work;
—schedules;
—the amount of funds required and available to accomplish the scope of work;
—identification of individual project managers;
—identification of types of contracts to be used (if known);
—types and frequencies of reports;
—identification of which party is to be responsible for government-furnished equipment, contract administration, records maintenance, rights to data, software and intellectual property, and contract audits;
—procedures for amending, modifying or terminating the Sub-agreement; and
—such other particulars as are necessary to describe clearly the obligations of the parties with respect to the portion of the DA's hydroelectric project program which BPA agrees to fund under § 2406 of the Act.

Goods or services shall be provided under this Article only after an appropriate Sub-agreement has been signed by a representative of each party authorized to execute that Sub-agreement. In the case of conflict between this MOA and a Sub-agreement, this MOA shall control.

ARTICLE VI—RESPONSIBILITIES OF THE PARTIES

A. Responsibilities of the Department of the Army

[order of following paragraphs revised]

The DA shall determine the need for maintenance and construction of generation additions, improvements, and/or replacements opportunities at any hydroelectric projects and other projects operated and maintained by USACE.

The DA shall notify the BPA of funding requirements for non-routine maintenance, additions, improvements, and/or replacements that the DA deems appropriate under § 2406 at any hydroelectric projects and other projects operated and maintained by the USACE within the Pacific Northwest region.

The DA shall develop draft Five Year Plans, Annual Budgets and Sub-agreements to include mutually agreed upon scopes of work. The North Pacific Division Commander is the authorized signatory for each Five Year Plan, Annual Budget and/or Sub-agreement.

The DA shall plan, design and construct, at BPA expense, such maintenance requirements, additions, improvements, and/or replacements as the DA and the BPA may agree upon in Five Year Plans, Annual Budgets or Sub-agreements. The DA shall construct, operate, and maintain such additions, improvements, and/or replacements in accordance with the purpose, terms, and conditions of this MOA, consistent with project uses of the water resources development projects.

The DA shall provide detailed periodic progress, financial and other reports to the BPA as agreed to in the Five Year Plans, Annual Budgets and Sub-agreements. Financial reports shall include information on all funds received, obligated, and expended, and on forecast obligations and expenditures.

B. Responsibilities of the Bonneville Power Administration

The BPA shall pay all costs associated with the DA's provisions of goods or services under agreed upon Five Year Plans, Annual Budgets or Sub-agreements pursuant to this MOA and shall transfer to the DA, in the manner as specified in Article VII, the funds necessary to accomplish the Five Year Plans, Annual Budgets or Sub-agreement.

The BPA shall ensure that only authorized BPA officials sign Five Year Plans, Annual Budgets and/or Sub-agreements.

ARTICLE VII—FUNDING

The BPA shall pay all costs, including overhead charges, on maintenance requirements, addition, replacement or improvement work pursuant to mutually agreed upon Five Year Program, Annual Budgets and Sub-agreements entered into under this MOA. The cost of overhead charges shall be determined in accordance with USACE policy and with General Accounting Office ("GAO") principles and standards. The Five Year Program, Annual Budgets and Sub-agreements shall establish the scope of work to be accomplished and the funding requirements for each work item and project agreed to thereunder.

The BPA shall obligate one-hundred percent (100 percent) of the annual funding requirements of each Sub-agreement upon signature of the Sub-Agreement and at the beginning of each fiscal year for the Annual Budgets. This obligation sets aside funds as budgetary resources for the USACE and certifies the availability of funds to the USACE, but does not transfer any of BPA's repayment responsibilities to the DA or the USACE. By means of each Sub-agreement and Annual Budget, BPA enters into a binding agreement that obligates BPA to fund all costs associated with the Sub-agreement and Annual Budget and guarantees the availability of funds to the USACE for work specified in the Sub-agreement and Annual Budget, subject only to the provisions of ARTICLE XIV if the Sub-agreement is terminated pursuant to that Article.

The Annual Budgets and any Sub-agreement are the authorizing documents which the USACE is authorized to obligate against and fulfills the same functions as an SF 1151, Non-Expenditure Transfer Authorization. Mutually agreed upon Five Year Plans, Annual Budgets and Sub-agreements shall be forwarded to Headquarters, USACE ("HQUSACE"), ATTN: CERM–FC, Washington, DC 20314–1000. HQUSACE shall make an apportionment to the performing USACE District based on the Annual Budgets and Sub-agreement.

Cash transfers to cover USACE disbursements shall be made from the BPA Fund to the USACE. A bill submitted for payment for work accomplished pursuant to a Sub-agreement and Annual Budget is not subject to audit or certification in advance of payment. The U.S. Treasury's On-line Payment and Collection System ("OPAC"), or a mutually agreeable alternative, will be used to accomplish the necessary cash transfer from the BPA Fund.

The BPA Fund is established pursuant to 16 U.S.C. § 838i and consists of, *inter alia*, all proceeds derived from the sale of bonds, notes and other evidences of indebtedness, all receipts, collections and recoveries of the BPA, and any Congres-

sional appropriations made to the BPA. The BPA Administrator is authorized to make expenditures out of the BPA Fund for authorized purposes, such as funding work proposed pursuant to § 2406 of the Act, provided such program expenditures have been submitted to Congress in BPA's budget.

If the USACE forecasts that its actual costs under a Sub-agreement or Annual Budget will exceed the amount of funds available for obligation under that Sub-agreement or Annual Budget, it shall promptly notify the BPA of the amount of additional funds necessary to complete the work under that Sub-agreement or Annual Budget. The BPA shall either obligate to the amended Sub-Agreement or Annual Budget necessary funds, or require that the scope of work be limited to that which can be paid for by the then-available funds, or direct termination of the work under a Sub-agreement.

Both parties agree to provide each other all pertinent power related financial information, including but not limited to: estimated OPAC fund transfers and other financial transactions, accounting records, underlying assumptions, methodology, and data as needed to assist their respective efforts.

ARTICLE VIII—APPLICABLE LAWS

This MOA and all documents and actions pursuant to it shall be governed by the applicable statutes, regulations, directives, and procedures of the United States. Unless otherwise required by law, all contract work with third parties undertaken by the DA shall be governed by DA policies and procedures.

ARTICLE IX—CONTRACT CLAIMS AND DISPUTES

All claims and disputes by contractors arising under or relating to contracts awarded by the DA shall be resolved in accordance with federal law and the terms of the individual contract. The DA shall have dispute resolution authority for these claims. Any contracting officer's final decision may be appealed by the contractor pursuant to the Contract Disputes Act of 1978 (41 U.S.C. §§ 601–613). The U.S. Army Corps of Engineers Board of Contract Appeals ("ENG BCA") is designated as the appropriate board of contract appeals. In lieu of appealing to the ENG BCA, the contractor may bring an action directly to the United States Court of Federal Claims.

The DA shall be responsible for handling all contractor disputes and administrative appeals, and for coordinating with the Department of Justice if the dispute goes to Court. The DA shall notify the BPA of any such dispute and afford the BPA an opportunity to provide comments on any documents prepared regarding the dispute, including pleadings in the litigation and any resulting settlement documents. The DA shall also provide BPA an opportunity to participate in the dispute and any resulting litigation and settlement negotiations.

ARTICLE X—DISPUTE RESOLUTION

The parties agree that, in the event of a dispute between the parties under this MOA or a Five Year Plan, Annual Budget or Sub-agreement made pursuant to this MOA, the BPA and the DA shall use their best efforts to resolve that dispute in an informal fashion through consultation and communication, or other forms of non-binding alternative dispute resolution mutually acceptable to the parties. The parties agree that, in the event such measures fail to resolve the dispute, they shall refer administrative and policy matters to the Office of Management and Budget for resolution and matters of statutory interpretation or dispute to the Department of Justice for resolution. This provision shall not apply to the decision to enter into Five Year Plans, Annual Budgets or a Sub-agreement or the decision to amend or terminate this MOA or Five Year Plans, Annual Budgets or a Sub-agreement.

ARTICLE XI—PUBLIC INFORMATION

Justification and explanation of this MOA and the Sub-agreements or an Annual Budget before Congress and other agencies, departments, and offices of the federal Executive Branch shall be the responsibility of the DA and BPA. The DA and BPA may provide any assistance necessary to support each other's justification or explanations of the programs conducted under this MOA. Each party shall be responsible for its own testimony before Congress. The DA and BPA shall coordinate public announcements, except that the DA will respond to all inquiries relating to the ordinary procurement and contract award and administration process and coordinate with BPA as appropriate. The BPA or the DA shall make its best efforts to give the other party advance notice before making any public statement regarding work

contemplated, undertaken, or completed pursuant to Sub-agreements under this MOA.

ARTICLE XII—AUDIT

The DA shall maintain accounting procedures and practices sufficient to reflect properly all costs the DA has incurred in performance of work accomplished pursuant to written Sub-agreements or Annual Budget entered into in accordance with this MOA.

Authorized BPA officials and other authorized representatives, including internal and external auditors, shall have the right to examine the records supporting the costs the DA incurs. This right of examination shall include inspection at all reasonable times at the DA's facilities used in performing work pursuant to written Sub-agreements or Annual Budget entered into in accordance with this MOA, and at locations where records pertaining to the Sub-agreements or Annual Budget are maintained.

ARTICLE XIII—MISCELLANEOUS

A. Other Relationships or Obligations

This MOA shall not affect any pre-existing or independent relationships or obligations between the BPA and the DA.

B. Survival

The provisions of this MOA which require performance after the expiration of this MOA shall remain in force notwithstanding the expiration of this MOA.

C. Severability

If any provision of this MOA is determined to be invalid or unenforceable, the remaining provisions shall remain in force and unaffected to the fullest extent permitted by law and regulation.

ARTICLE XIV—AMENDMENT, TERMINATION, AND MODIFICATION

This MOA and related Five Year Programs, Annual Budgets or Sub-agreements may be modified or amended only by written, mutual agreement of the parties. Either party may terminate this MOA, Five Year Programs, Annual Budgets or Sub-agreements by providing written notice to the other party. The termination shall be effective after two full fiscal years following notice, unless a later date is set forth. In the event of termination, the BPA shall continue to be responsible for all costs incurred by the DA under this MOA, Five Year Programs, Annual Budgets or Sub-agreements and for the costs of closing out or transferring any on-going contracts.

ARTICLE XV—DEFINITIONS

A. Non-routine Maintenance

These are maintenance activities that are not on a repetitive schedule. They include repairs and replacements of both expense and capital items, that may be accomplished by either hired labor or contract. For purposes of this agreement, it will be individual work items that cost less than $500,000.

B. Major Maintenance and Replacements

The activities in this category are similar to non-routine maintenance with the exception of scope and cost. Typically this work is of a scope that it is accomplished by contract. For purposes of this agreement, it will be individual work items that cost more than $500,000.

C. Major Rehabilitation

This is a comprehensive program that includes major replacements, improvements and additions. In the DA is an activity that is over $5,000,000 and requires more extensive economic and environmental evaluation.

ARTICLE XV—EFFECTIVE DATE

This MOA shall become effective when signed by both the BPA and the DA.

Bonneville Power Administration

_____

Administrator, Bonneville
Power Administration
Date:_____

Department of the Army

_____

Assistant Secretary of the Army (Civil Works)
Date:_____

NORTH PACIFIC DIVISION HYDROPOWER PROGRAM FISCAL YEAR 1999–2002

[In thousands of dollars]

	Fiscal year					
	1997	1998	1999	2000	2001	2002
Non-Routine Maintenance	33,253	40,880	39,137	39,516	39,844	40,248
Major Rehab	19,737	23,621	22,593	31,428	32,638	22,198
Total BPA direct funded	52,990	64,501	61,730	70,944	72,482	62,446
Appropriation Funded Hydropower O&M	40,594	41,801	40,018	40,406	40,742	41,155

NORTH PACIFIC DIVISION HYDROPOWER DIRECT FUNDING ANNUAL BUDGET—FISCAL YEAR 1999

	Maintenance	Additions, replacements and improvements	Major rehabilitation	Total direct	Appropriated O&M
BONNEVILLE					
THE DALLES					
JOHN DAY					
DETROIT					
BIG CLIFF					
GREEN PETER					
FOSTER					
COUGAR					
LOOKOUT POINT					
DEXTER					
HILLS CREEK					
LOST CREEK					
TOTAL NPP	XXXXXX	YYYYYY	ZZZZZZ	BBBBB	AAAAAAAA
MCNARY					
ICE HARBOR					
LOWER MONUMENTAL					
LITTLE GOOSE					
LOWER GRANITE					
DWORSHAK					
TOTAL NPW	XXXXXX	YYYYYY	ZZZZZZ	BBBBB	AAAAAAAA
CHIEF JOSEPH					
ALBENI FALLS					
LIBBY					
TOTAL NPS	XXXXXX	YYYYYY	ZZZZZZ	BBBBB	AAAAAAAA
NORTH PACIFIC	39,137		22,593	61,730	40,018

General GRIFFIN. I also have with me today Dave Geiger, my Pacific Salmon Program Manager, and Mr. John Velehradsky, my Director of Engineering and Technical Services. As we get into questions, if I get stumped they may have more detail than I.

Senator GORTON. As we ask questions, we will be delighted to have any assistance you can get from the staff of any of you here,

and I suspect Mr. Hardy is probably not going to have to turn around. He has been so accustomed to so many of these questions for so long.

And we now, of course, have been joined by three other Northwest Senators, Senator Craig from Idaho and my colleague Senator Murray, and Senator Wyden from Oregon, who is not a member of the committee, but who has every bit as much interest in these issues as do those of us who are, and who is most welcome to the hearing.

I have, as you can imagine, a large number of questions for these witnesses. I think with your indulgence I will go through my questions to Mr. Hardy on transmission and marketing functions of the BPA, and then we can go back and forth on questions and we will not impose any time limits.

Each one of you has a very, very real interest, and to the extent that I have not covered questions that are of interest to you, you can go ahead and ask them, and I will defer any more that I have until the end.

Some of these questions I think, Mr. Hardy, you have answered. I know a number of you have answered them to me privately, and some of you answered in your opening formal statement. I think I am going to put most of them anyway, because some at least will have short answers, and we will have a question and answer in the record that we can search through easily.

SEPARATION OF TRANSMISSION AND MARKETING OPERATIONS

Obviously, you know the region and spent a great deal of time discussing the separation of BPA's marketing and transmission functions. I understand that BPA has undertaken an analysis of the various roadblocks to accomplishing the goal of separation. The regional review's transition board for the Governors is also looking at the question of what legislation separating BPA's two functions would need to cover.

First, I take it that you do believe that BPA's transmission and marketing functions should be split. Is that correct?

Mr. HARDY. That is correct, Senator, with a caveat, as I indicated in my opening remarks, that the administration has yet to take a formal position, but in terms of my view of this, yes, that is correct.

Senator GORTON. I fully understand.

Do you have a recommendation with respect to the manner in which these two functions should be legislatively separated?

Mr. HARDY. I would have a process type recommendation. As you are well aware, we are proceeding with a series of discussions both in the House and the Senate side here, and with the Governors' transition board back in the region.

At this point, these discussions are still in the educational phase, but we are about to the phase, or we actually are to the phase now where we need to start identifying what the issues are associated with, say, implementing full legal separation of Bonneville. The next step after that would be, in my view, a detailed discussion of what options you have to address these various issues and resolve them, and then only after that point would we proceed to actually drafting legislation to do something.

My main caution is, or my main counsel would be to avoid jumping in right now and trying to start drafting something. I think it would be a better consensus-builder if we started from issue identification, options for resolution, and then proceeded to drafting. I think our probability of building a regional consensus both in the region and back here would be greater if we approached it in that fashion than in, say, a more traditional legislative fashion.

INDEGO PARTICIPATION

Senator GORTON. Have you reached a conclusion, even a tentative conclusion yet, Mr. Hardy, as to whether or not BPA should become, or part of BPA should become the Bonneville Transmission Administration, serving as an independent system operator, or should that portion of BPA participate on a non-Federal, independent system operation such as INDEGO?

Mr. HARDY. No; I have not reached a conclusion. We are actively working with the INDEGO organization to try to resolve the various pricing and reliability and other issues that exist there. My view of this, Senator—and again, this is a personal view as opposed to an administration view—is that any piece of separation legislation should be agnostic on those points. It should allow Bonneville either to become the grid operator or to participate in a non-Federal grid operator.

Senator GORTON. At its discretion?

Mr. HARDY. I believe so, but again, I have not moved that far down the line in the reasoning. I think if you try to pick a course in the legislation, I am not sure that is the wisest thing, or that we know enough about that.

I think that we have a series of obstacles right now for full Bonneville participation in INDEGO. One is legislative. We need legal authority to transfer the operational control of Federal assets, the Federal transmission system, to a non-Federal party, so that should be removed.

You have a whole series of other issues, reliability issues, pricing issues and whatnot. For example, how are Bonneville's environmental responsibilities and cost recovery responsibilities going to be treated if the INDEGO tariffs are not sufficient to recover our costs.

We need a good 2 years worth of work in a contractual administrative sense, with the INDEGO participants, I think, before we can come back and say with confidence, yes, it makes sense to join INDEGO, or no, this will not work, and maybe we should go another direction.

All I am seeking to do is to avoid prejudging those issues one way or the other, while as part of the legislation, at least clearing away the one legal obstacle to participation should that be deemed the appropriate choice.

Senator GORTON. Two years from now, as we sit here questioning you, or 2 years from the time we pass legislation authorizing you?

Mr. HARDY. We should be able to have the issues regarding INDEGO resolved within a year's time from today's date, if they are capable of being resolved at all, and I do not know whether that is the case. I am not about to make a judgment today as to whether that is the case. We have a lot of work to do, but I can

assure you I have my best staff people working on this issue to try to resolve it in a positive fashion. I think if you ask the INDEGO participants, that is the same feedback they would give you.

Senator GORTON. What is the degree of BPA's participation in the present discussion with respect to the creation of an independent grid operator?

Mr. HARDY. We are extensively involved at a staff level and up to a vice president level in our organization in the various discussions and the various INDEGO subcommittees on pricing issues, on reliability issues, on other legal issues associated with the separation.

The INDEGO participants want to make a July filing with the FERC for their ISO. We have told them we do not think we can be a formal part of that filing, but we can make an information filing so folks can at least tell if you apply the INDEGO tariffs to Bonneville transmission rates what the impacts would be, and we will keep working with them even after the filing to try to resolve these issues. I would characterize it as a very active and high level of participation by Bonneville staff.

Senator GORTON. But you do not believe, I take it, that you have the present legal authority to do it?

Mr. HARDY. That is correct.

Senator GORTON. Can you give us either now or in writing the specific legal references, statutory references which inhibit your joining it?

[The information follows:]

INDEGO

Congress has enacted multiple provisions regarding operation of transmission facilities by the Bonneville Power Administration. Taken together, Bonneville's legal counsel concluded that these legislative actions are strong indications of Congress' intent that the Administrator may not transfer control of the Pacific Northwest federal transmission facilities to a third party. If the Administrator were to join the FERC filing for the INDEGO ISO, the Administrator would be acquiescing in a transfer of control of the transmission system to the INDEGO. See 16 U.S.C. § 838b (Section 4a of the Federal Columbia River Transmission System Act of 1974) (Administrator directed to operate and maintain federal transmission system within the Pacific Northwest), and 16 U.S.C. § 824k(i)(5) (Section 212(i)(5) of the Federal Power Act as added by the 1992 Energy Policy Act) (In transmission access cases, FERC is prohibited from requiring the Administrator to provide transmission service if to do so would impair the Administrator's ability to provide transmission service to the Administrator's power and transmission customers in the Pacific Northwest.) In addition, a section of a 1986 Appropriations Act (The Urgent Supplemental Appropriations Act for 1986) (Public Law No. 99–349, 100 Stat. 749, section 208 (1986) contains bill language that states that no appropriated funds or available funds shall be used by the Executive Branch for soliciting proposals, preparing or reviewing studies or drafting proposals designed to transfer out of Federal ownership, management, or control the facilities and functions of the Federal Power Marketing Administrations. This legislative language could be an issue. The Department of Energy Office of General Counsel has not reviewed the issue of BPA's authority to participate in INDEGO or any other ISO.

SEPARATION PROBLEMS AND ISSUES

Senator GORTON. Now, if we move in the direction of separation in either matter, obviously we will inevitably be discussing whether or not Bonneville's funds ought to be placed in two separate accounts, two separate funds, one transmission and one marketing. Do you feel that that is a necessary part of separation, and what

are the real challenges and problems facing you and facing us if we are to make two separate funds?

Mr. HARDY. I do not know if I would go so far as to say that is an absolute prerequisite to separation. I think it is probably desirable both in a substantive and in an appearance sense, but there are major issues associated with the one fund-two funds issue.

Let me highlight a couple of the principal challenges if you go to two funds, because if we decide to legislate, you and your colleagues will certainly have to grapple with this issue and make your own judgments.

If we go to two funds, you need the same priority of payments for each fund as presently exists with the current fund. The first priority is to repay the supply system bondholders above all other parties, and then the Treasury is well down the list in terms of the priorities. If you seek to alter those priorities, you potentially undermine the security behind the supply system bonds, which is first Bonneville revenues and second, arguably, the U.S. taxpayer.

By terms of the bond resolutions, the security behind the bonds cannot be lessened and while if ultimately the revenues of the Federal Columbia River Power System stand behind those bonds, then you have to be very careful not to affect the security of those bonds lest you trigger some predictable and probably adverse bondholder reaction to that lessening of security. That is one issue, same priority of payments.

As for the second issue, you probably need an interfund loan arrangement between the now-separated power function and the transmission function such that if the power function gets in trouble it has the ability either to pay off supply system bonds or to make a Treasury payment by tapping the revenues in the transmission function before you get to the point of having problems.

Senator GORTON. So obviously, because of the nature of the supply system debt, you can't have a full divorce between marketing and transmission pursuant to which transmission carries no responsibility whatsoever for that power system debt.

Mr. HARDY. That is correct. Ultimately, the security behind the supply system bonds is a pledge of $2.5 billion a year of power revenues on a gross basis and $0.5 billion a year of transmission revenues, or a pledge of $1.5 billion a year of power revenues net of residential exchange, and a $0.5 billion a year of transmission revenues, and it is the collection of both of those revenue streams that secures those bonds.

You cannot just take the transmission revenue stream and insulate it without materially affecting the security of the bonds. You can separate Bonneville into two agencies with two separate administrators who make independent decisions, but there has to be an after-the-fact accounting in a financial sense, and an ability for the power fund to call on the transmission fund to protect that revenue stream. If you are to have two funds, we think that is the best way to approach it.

I should caveat that by saying that is our best judgment as to how to do this. This will require extensive discussions with the bond fund trustee, with underwriters, and with others as to whether we can do this in a way that convinces the bondholders and the bond fund trustee that we are not materially lessening the security

behind the bonds. I simply do not know what the answer to those questions are yet, but we think it is doable.

Senator GORTON. You said that it is highly desirable to have two separate funds. If there are not two separate funds, if somehow or other we keep a single fund, is there any legislation you need under those circumstances in connection with an otherwise separation of transmission and marketing?

Mr. HARDY. Well, I think if the purpose of any legislation is to eliminate this conflict of interest, or potential conflict that now exists with simple administrative separation, that you would still need legislation to separate the decisionmaking powers of the head of the transmission organization and the head of the power organization. Then you would have a single fund administrator, and frankly we have not done any work to think of how that would work, other than that it would be horrendously complicated.

DEBT TO THE FEDERAL TREASURY

Senator GORTON. Answer the same set of questions with respect to the debt to the Federal Treasury. Obviously, you are not dealing with bondholders or bond attorneys there, but we have some of the same problems about the security of the Federal debt, do we not?

Mr. HARDY. Yes, sir; I would make the same analogies relative to the Federal taxpayers as I would to the bondholders.

You need to have the same priority of payments. You need to have an ability of the power fund to call on the transmission fund before deferring a Treasury payment, and you need to have the same kinds of mechanisms to assure, I think, taxpayers and your colleagues outside the Northwest that the taxpayer at least is no worse off than they are today. Hopefully, we can construct this in several ways that the regional review suggested such that the taxpayer is actually better off.

FISH AND WILDLIFE COSTS

Senator GORTON. Now the third big and controversial issue that uses a lot of your money is fish and wildlife costs. Obviously, this question comes up in connection with any separation legislation. There are some, perhaps many, in the region who want to use the transmission system as a source for fish and wildlife costs.

You told us that you have a study underway on that subject and on when you run out of the ability to have a competitive transmission system if too many costs are loaded on it. Would you speak to what you are doing in that area, and when we will have some answers from you on it?

Mr. HARDY. Senator, I would like to take that issue and put it in a little larger context, if I could, and make it broader than just a fish issue. I think we have got a potential cost recovery problem post-2001.

As I explained in my opening statement, we have a goal of getting to 2 cents in the year 2000. We think that will make us competitive in most, but not all, market circumstances. Our intention is to cost cut and market our way out of this issue to the maximum extent possible.

In the event that power prices continue as low as they are today, say, in 2001, we will probably have a cost recovery problem. At

that point, whether you use the transmission system as a collection vehicle I think is less specific to a particular cause or perceived cause, like whether it is fish costs or WPPS's cost or some other cost. As soon as you get into cost causation you polarize the debate.

STRANDED COSTS

From my perspective, it becomes more difficult to resolve. In fact, the FERC way of approaching this is a more traditional kind of approach, which simply says, if you have an excess of cost over revenues you have a stranded cost recovery problem, or a cost recovery problem. It is in that case that you might need a vehicle to use the transmission system to collect some increment of additional cost if you could not fully recover your cost through your power rates.

There are a number of ways to do that which we are just starting to get into with the Governors' transition board, and I suspect ultimately with you and other members of the delegation.

One option—not the only one, but one option is to use the transmission system as a collection vehicle for some increment of those costs. It has both problems and potential virtues in different respects.

The transmission system is at least physically usable for that purpose, and even with existing legal authorities we probably could put a general transmission charge at or on the transmission system and collect costs up to some level. Even though that would clearly face a legal challenge, it is probably the most readily available vehicle at the wholesale level to collect those costs.

On the other hand, you cannot put too many costs on the transmission system without encouraging build-around or creating other problems where you're going to price your transmission system out of the market. The study we have underway, which we intend to take out to the region probably next month, is looking at what is the crossover point, or the point where you load so many costs on that you encourage massive build-around and you lose customers.

Senator GORTON. But you will inevitably have a demand to spend all the money up to that break point, will you not?

Mr. HARDY. I think that depends on how you structure it, and if the market improves post-2001 you may not need to use this at all. If the subscription process and the regional review are successful you may not need to use it, and again, from my view, if you are talking about the cost recovery mechanism it probably makes most sense to say, let us try and make the subscription process work and solve our problems that way. And that probably includes some administrative agreement to extend the fish memorandum of agreement, to get some certainty in post-2001 fish costs. Then any stranded cost charge or cost recovery charge would be—even if you legislated—it would be on a contingent basis.

And if you fully recovered your cost because everybody was fully subscribed in 2001 you would not need to use it. Therefore, I do not think there is a guarantee that costs automatically would flow up to that level. If they did it would defeat the very purpose for which you put it on there in the first place.

CORPS NORTHWEST DIVISION LOCATION

Senator GORTON. Thank you. General Griffin, I missed your point on the dual headquarters. One is Portland. Where do you fly back and forth between?

General GRIFFIN. Sir, that would be Omaha, the former Missouri River Division headquarters.

Senator GORTON. I want you to tell me simply from your own point of view as to whether or not we did a wise job when we required that consolidation. Is there anything gained in having a single office for both the Missouri River and the Columbia River in efficiency, or could they be run better the way they were run before?

General GRIFFIN. Sir, the answer to your question is yes, you did help us. While there are no short-term gains, we basically have two regional offices. We know that we are going to continue to have cuts, and over time we can take advantage of some of the efficiencies of having two offices, and sir, the other thing is, as you know, the Army is downsizing and we have fewer general officers.

We have colonels commanding divisions now. But the Corps is committed to putting one colonel 06 and a Senior Executive Service civilian in each location, and so I will have two deputies, two regional deputies and two senior civilians to work those regional issues and then command both.

So it is doable, and what it does is put a general officer between those two offices and the headquarters to represent their issues and weigh in accordingly.

Senator GORTON. Thank you.

Senator Craig, you were first here.

Senator CRAIG. Mr. Chairman, thank you.

Of course, I mention fish recovery systems on the Snake and fish mitigation, and all of those are part of our budget considerations this year. They are going to be important to the entire Pacific Northwest. But let me take advantage of the gentlemen before us with several questions.

First of all, let me welcome you to the subcommittee, and Randy, you have addressed a series of questions that the chairman has been concerned about, and those are of mutual concern, I think, to all of us in the Pacific Northwest that find you in our service area, and we appreciate it.

INDEPENDENT GRID OPERATOR

When you talked about independent grid operations for an independent grid operator, and Bonneville's role in that and the need for possible legislation, is there a constitutional question in BPA's participation, and how might that problem be addressed? Do you think we can legislate around that?

Mr. HARDY. Maybe. Before you get to the constitutional issues, there is a pure legal issue that has to do with transferring operational control to non-Federal owners. That is the first threshold that you have to get over.

Beyond that, at some level are constitutional issues of how far down the road can you go with non-Federal officials telling Federal officials what to do, and that really depends on what the structure

of the grid operator is. The stronger the grid operator, the more likely it is that you bump into constitutional kinds of questions.

I think you can work around that by ultimately giving the Bonneville Administrator the ability to withdraw from the grid operator or to veto certain decisions if they cannot be consistent with the other statutory mandates.

Senator CRAIG. But how do we then get full participation if the 500 pounder on the block has that authority? I mean, we are going to have some frustration among independent operators, are we not?

Mr. HARDY. That is a potential result, but again it depends very much on what the structure of the grid operator is. If you have a so-called weak ISO or IGO that, for example, does not have authority—and I am not arguing for this. Frankly, I would argue the contrary on a generic basis outside of Bonneville's issues.

But if you had a weaker ISO where, for example, that grid operator did not have the authority to require a particular utility to build new facilities if that ISO judged that they were appropriate, so the ISO could not tell Idaho Power, or tell Bonneville to build this new transmission line from point A to point B, chances are you would have a lot better opportunity to avoid the constitutional kinds of issues that I just described.

If, on the other hand, you have a stronger ISO that does have that ability to order investment decisions to be made and other kinds of decisions, the potential of bumping into that conflict is greater. It is there. I cannot tell you whether it is way off in the distance or whether it is right up in our face right now until we have a structure design for INDEGO that specifies what the roles and the responsibilities of the various parties are, and I think that most of that problem can be legislated around, but I cannot tell you with complete assurance that it can all be successfully dealt with.

COST RECOVERY

Senator CRAIG. In one of your responses to Senator Gorton you talked about the amount of cost that you can allow the transmission system to bear. Are you suggesting that some of the fish cost be borne by transmission, fish cost that you are experiencing?

Mr. HARDY. No; what I am suggesting is that I think the best way to handle this problem is not to try to tie it to a particular increment of fish cost or a particular increment of WPPS cost or assign a causal factor to it. Simply, Bonneville's costs are whatever they are. Given the cost cutting that I have just described, any revenues are the best you can make them, and in 2001, if you have an excess of costs over revenues, you have a cost recovery problem.

And then you have a mechanism, whether it is a transmission surcharge or some other mechanism to recover that increment of costs both to assure the security behind the supply system bonds and to protect the taxpayer. I think that is the logic.

It seems to me that the best way to approach that issue is to deal with it in a general revenue recovery sense, which is the way FERC treats it when it identifies stranded costs in its order 888 rulemaking. That is procedurally the way that they specify it as opposed to trying to go in and identify some increment of cost that has a particular label on it which would be completely subjective anyway. I think we would be more successful using that kind of

FERC precedent and then trying to apply it to Bonneville's unique circumstances.

TRANSMISSION OPERATIONS AND MAINTENANCE COSTS

Senator CRAIG. Well, recently you contracted with a private consultant to determine that even with adjustment for system size and other requirements your transmission O&M costs were 25 percent higher than other operators, such as some of the private investor-owned utilities. Could you discuss the findings of this report and provide a copy of that report to the subcommittee?

Mr. HARDY. I certainly can provide a copy of the Bonneville summary of the findings provided by the consultant. We did it to benchmark our transmission cost against those of other providers. I would observe that yes, we are somewhat higher than some providers, and we are very much lower than many other providers, but there are a number of factors associated with that. I would be happy to provide the summary to the committee.

BONNEVILLE'S SUMMARY OF CONSULTANT FINDINGS

In January of 1996, BPA contracted with the consulting firm of Putnam, Hayes & Bartlett, Inc. (PHB), to apply their "statistical benchmarking" method for identifying a utility's potential for improving its cost efficiency to BPA's transmission costs from fiscal year 1994. Their method relies on FERC Form 1 reported costs and other data from U.S. investor-owned utilities to build multiple regression models that may be used to predict the expected average cost performance for a transmission utility given its unique system characteristics; for example, its service territory size, voltage levels, and line miles. By comparing a utility's actual costs to its predicted costs, they are able to estimate a cost savings potential. Then, by ranking utilities on the basis of estimated cost saving potential, individual utilities can see their relative performance as compared with other transmission-owning utilities across the U.S. or within their own geographic area. Statistical benchmarking is intended as an internal management tool to promote cost efficiency and is used in conjunction with process re-engineering and efforts to identify industry best practices.

The findings presented to BPA only compared cost efficiency performance for transmission total cost, capital cost, and O&M cost compared to investor-owned utilities in the Western System Coordinating Council, or WSCC, region. Since the analysis depended on Federal Energy Regulatory Commission (FERC) Form 1 data for investor owned utility comparison, only those three categories of costs were available for comparison. The findings indicated that BPA would need to reduce its transmission total costs by 32 percent, reduce transmission capital costs by 32 percent, and reduce transmission O&M costs by 17 percent to achieve an average cost efficiency performance for the group of investor-owned utilities in the WSCC analyzed by PHB.

Previous benchmarking studies, that did not control for differences in utility system characteristics, portray a BPA transmission utility with costs and performance characteristics that were about average or better compared to other transmission utilities. Likewise, comparisons of BPA's transmission rates with those of other utilities in the WSCC reveal better than average price performance for BPA.

The PHB study adjusted BPA's costs to offset (i.e. seeks to remove) the effect of BPA's lower average cost of capital, approximately 7 percent, which reduces the total cost of capital investments. If BPA were to invest in the same piece of equipment as an investor-owned utility with an average cost of capital of about 11 percent, BPA's costs, including the interest on the capital borrowed to fund the purchase and the absence of a return on investment, would be higher. BPA's average cost of capital (i.e. money) contributes to lower total costs and lower capital costs for the BPA transmission system compared to the same system operated as an investor-owned utility. The PHB findings remove this cost of money factor.

The PHB study controls for (i.e. seeks to remove) the economy of scale effect in which the effect of higher voltage facilities is an economy of scale in which the design of the transmission facilities contributes to increased cost efficiency from the ability to transmit more power more efficiently and with fewer facilities and, therefore, lower cost per megawatt hour transmitted. For example, it takes roughly a 200-foot wide right-of-way, or ROW, to build two parallel 115 kilovolt (kV) trans-

mission lines as compared to constructing a single 500 kV transmission line requiring a 150-foot ROW. Wider ROW requirements mean greater costs of ROW clearing and vegetation management.

Two factors may have played a significant role in offsetting the effects of BPA's lower average cost of capital and the economy of scale inherent in the BPA transmission system: (1) BPA's traditional obligation to develop high-voltage main grid; and, (2) interconnection facilities for federal and other Northwest power transmission and BPA's determination to provide a high level of system reliability. These factors would tend to result in capital investment occurring in anticipation of future transmission constraints, causing a lower utilization of facilities which means that costs per unit of power transmitted would tend to be higher.

The results of the PHB statistical benchmarking study that show a greater potential for efficiency improvement in capital costs as compared to transmission operation and maintenance costs appear to support the view that BPA's interpretation of its statutory obligation to serve load lead to a greater rate of capital investment compared to investor-owned utilities in the WSCC. The ability of the federal transmission interties to accommodate substantial swings in the amount of Northwest hydropower available for export to California supports this hypothesis as well. In short, we have historically built a very robust transmission system to ensure that the needs of all regional utilities, particularly northwest investor owned utilities, were fully accommodated.

The planned level of reliability is another contributing factor to a utility's total cost of transmission. The amount of facilities developed and the designs of facilities have both cost and reliability consequences. BPA's transmission system is more reliable than the average reliability of transmission utilities in the WSCC, this may be part of the reason that BPA's transmission system is not as cost efficient in the findings of the PHB study. Ideally, statistical benchmarking would consider differences in system reliability and their effects on the cost efficiency of different transmission utilities. However, information on transmission reliability is not available and, therefore, cannot be used to control for the effects of those differences across utilities.

Nonetheless, BPA has participated in other benchmarking studies in which comparisons of system reliability were performed, such as the Theodore, Barry & Associates, or TBA, 1995 transmission and distribution benchmarking study. In those studies, BPA has compared favorably, ranking in the top 10 percent of participating utilities in terms of System Average Interruption Duration Index, or SAIDI, and in the top 25 percent of System Average Interruption Frequency Index, or SAIFI. (Theodore, Barry & Associates, 1995 Electric Transmission and Distribution Best Practices Survey.) BPA's transmission reliability standards and performance targets may be important contributing factors in BPA's higher capital and O&M cost in the PHB benchmarking findings because of the reliability for cost-of-service tradeoff. Since the identities of participating utilities are kept confidential in the TBA benchmarking studies, BPA was not able to incorporate the reliability information into the PHB statistical benchmarking study.

The findings of the PHB statistical benchmarking study were transmitted to BPA informally. No formal report was prepared by the consultant or BPA on the statistical benchmarking study. The original contract price for the study did not include the preparation of a formal report by the consultant. Regression equations and tabular results were transmitted to BPA in the form of letters and faxes from the consultant. BPA requested an estimate from the consultant for additional follow-on work and preparation of a formal report of the study. Given the price of contracting for a formal report and follow-on effort by the consultant and considering that BPA already had the major benefit of the cost performance findings to use in its re-engineering initiatives, BPA declined to contract for the additional work.

RESIDENTIAL EXCHANGE RATES

Senator CRAIG. Very good. I understand that you just reached an agreement with Pacificorp on residential exchange rates. Can you tell us about the settlement and its impact on ratepayers?

Mr. HARDY. I think it will be good news for Idaho ratepayers. We worked hard. We settled with PG Power about 2 or 3 months ago, and we have been negotiating with Pacificorp for its southern Idaho loads for the last, I would say, 2 months in earnest. Negotiations with both companies have moved along.

As a result of the 7(b)(2) provision of the regional act, we basically, as you know, reduced residential exchange benefits to all exchanging IOU's, and we have been working now to try to mitigate that rate impact.

The agreement we reached with Pacificorp was basically a split-the-difference kind of arrangement where we paid out or had a higher exchange payout than otherwise would have been the case, in all likelihood, to Pacificorp to be passed through their ratepayers. Pacificorp similarly agreed to work with the State of Idaho and others to try to mitigate those rate impacts both prospective and, as I understand it in Pacificorp's case, to some extent the retroactive impacts.

Our principle at Bonneville which Pacificorp, and we both agreed to, was a sharing of the pain associated with the rate impact so you did not have a step function where all of a sudden at the end of this fiscal year you had a precipitous drop in exchange benefits and a consequent increase in rate impacts to irrigators and to other critical loads in Idaho. We sought to phase that in over the remaining 4 years of the exchange, and that is what we have done.

Senator CRAIG. General, you have already responded to the chairman on a variety of questions. I think the one that I was most interested in was where you felt your authority rested as it related to drawdown. You have been clear on that, and I appreciate that, because as you prepare to provide us an understanding of the studies involved I think we have outlined a good number of concerns besides fish as to the kind of impact that a drawdown could have.

When I sit at the upper end of all of those pools we are extremely concerned about the economics of losing some of our capacity to move freight down river, and seeing how we put all of that together consistent with fish mitigation.

ACQUISITION OF WATER

John, it is nice to see you before the committee. We are pleased to have you here. I have only one question of you. As you know better than anyone else, we are blessed with a unique water year in the upper reaches of the greater Columbia River basin known as the Snake River watershed, and we are all quietly praying for a cool spring to be able to get that past Idaho and headed on down the system.

Be that as it may, with all of this abundance that is going to be coming out of the Snake and its tributaries, do you anticipate any need to acquire water from upstream right-holders to meet fish concerns this season?

Mr. KEYES. Mr. Chairman, Senator Craig, we have to buy the water every year to meet the requirements for the 427,000-acre feet called for in the biological opinion. That water comes from reclamation storage space in the reservoirs and what we purchase from willing sellers in the basin. That 427,000-acre feet is used after the flood flows are past, to maintain the flow levels into the operating season.

Senator CRAIG. John, with what appears to be a much more extended season this year, when it relates to flood levels, certainly not flood levels but spill levels, you still do not believe that it will

lessen the need for acquisition up to, let us say, the 427,000-acre feet?

Mr. KEYES. Mr. Chairman, Senator Craig, it takes that water for a very short time to meet the flow targets, and we anticipate needing the whole 427,000-acre feet to extend it while there is still fish in the river.

Senator CRAIG. Thank you very much, gentlemen.

Mr. Chairman, thank you.

Senator GORTON. Senator Murray.

PRIVATIZATION OF BONNEVILLE

Senator MURRAY. Thank you, Mr. Chairman.

Let me change the subject a little bit. We have had at least three Dear Colleague letters, including one today, advocating privatization, and Mr. Hardy, while you are here, if you could take a few minutes to talk to us about the effect of privatization on Bonneville, and specifically if you could tell me what impact it would have on the WPPS's debt that BPA is responsible for.

Mr. HARDY. Well, I think privatization in its purest form faces a major obstacle relative to the WPPS's debt, as I described I think, Senator, before you came in.

Bonneville revenues are the security behind the WPPS's debt. Ultimately, because we are a Federal agency, the Federal Government stands as a junior creditor behind the repayment of WPPS's bondholders. In all likelihood that debt, and the terms of the bond resolutions, which passed in the early 1970's, are such that the security behind that debt cannot be lessened. Therefore, it is hard to see how a private buyer could maintain the same security behind the debt unless that buyer also essentially defeased all $7 billion of WPPS's funds. Once you raise the bar that high, or once he or she has purchased the assets, and when the private buyer's revenue-raising capability is going to be constrained by the market there will likely be an impact on the bond security.

It is very difficult, in our view, to construct a case where the taxpayer is actually better off than if we simply continue to make our existing Treasury payments in full and on time. Probably the biggest single hurdle associated with any privatization is that you have to defease 7 billion dollars' worth of WPPS's funds.

Senator GORTON. Excuse me, Senator Murray. I think that is so central a question. Just in plain layman's terms, with all of those debts, Bonneville has a negative net worth, or pretty darned close to it, does it not? No one is going to take on that amount of debt.

Mr. HARDY. It would entail a fairly optimistic view of what our revenue-raising capability is in the near future, Senator.

Senator GORTON. I am sorry, Senator Murray, but that was the heart of the issue.

Senator MURRAY. And if you could continue just 1 minute and tell me what effect privatization would have on the United States-Canada treaty that governs the hydro system.

Mr. HARDY. It would be problematic from that standpoint as well. We have a treaty with Canada that we negotiated and signed that was ratified in 1964 that provided for the construction of three dams in Canada with substantial downstream power benefits in the mid-Columbia facilities, both Federal and non-Federal.

Bonneville is the U.S. entity for administering that treaty. I do not think there is any legal ability to have a private party be the U.S. entity, and so you immediately raise serious questions relative to the administration of the treaty.

I suppose the Corps is also part of the treaty and that the Corps could pick up the issue, but not until we transfer basically all of our power marketing people over to the Corps to execute that function, so it is hard to see where you have gained anything.

But needless to say, that would raise some substantial complications relative to the administration of the Canadian treaty.

DIRECT FUNDING OF HYDROELECTRIC ACTIVITIES

Senator MURRAY. Thank you. I appreciate that. I just wanted those comments on the record.

Mr. Hardy, you and I have had a bit of a chance to talk about direct funding for fish and wildlife mitigation efforts, and if you could take a few minutes to comment about that and how you see it saving money for ratepayers I would appreciate it.

Mr. HARDY. Well, we have engaged in direct funding to some extent for fish and wildlife and also probably more extensively for basic hydroelectric maintenance.

We have an agreement with the Bureau that we signed earlier this year that provides for full funding for all of the Bureau's O&M activities, some $41 million in fiscal year 1997 that we are funding directly. We are working with General Griffin and the Corps to try to get a similar agreement.

The Corps has, as the general indicated in his opening statement, some concerns about certain aspects of the agreement we have with the Bureau, but I think we are down to basically one issue. The issue is, do we direct fund the entire Corps maintenance budget, or do we just fund major rehabs and continue to fund the routine O&M in a more traditional reimbursable way?

We have a disagreement about that, but I think we are ready to get to the negotiating table and hopefully engage on that issue. I could go into greater detail as to what our perspective is, and the general can as to what his perspective is, but I think the key factor here is, if he and I can get to the negotiating table, we can solve this issue.

Senator MURRAY. So, basically it works for you with the Bureau of Reclamation right now.

Mr. HARDY. Well, we think it works fine.

Mr. KEYES. Mr. Chairman, Ms. Murray, the Bureau of Reclamation operates 10 powerplants in the Pacific Northwest region. Bonneville markets the power from those facilities under the direct funding agreement that we signed in December. They direct fund the operation and maintenance moneys that we use in all of our powerplants.

Under a previous agreement they funded the work that we did on capital outlays, such as rewinds, uprates, rebuilds, and that sort of thing. Both of those agreements are working outstandingly for us.

We have been doing the capital improvements for about 5 years and we have rewound an uprated Hungry Horse powerplant. We

rebuilt Menadoka powerplant, and we are rewinding and doing the turbine runner work at Grand Coulee under that agreement.

The agreement that we did this December allows them to pay us as we spend the money to run the powerplants, the salaries, the regular O&M. It is working very well for us. We do not see that agreement as the Congress relinquishing any of its control over Bonneville or Reclamation. We see it as good business.

Let me give you an example. Before, if we had a transformer that we needed to replace we would put it in our appropriations stream and we would have to do it 2 years ahead of time. When that 2 years was gone, we got the money to replace the transformer. If the transformer was still running, we replaced it anyway because we had the money. If we did not use it, we lost it.

Now, we can keep running the transformer until it breaks, essentially, and then replace it because they can carry the money over and then in some instances we are getting an extra 2 or 3 years out of transformers, where before we were having to replace them before their useful life was done. We think it is a good deal. Reclamation highly supports the direct funding from Bonneville.

Senator MURRAY. General Griffin, tell me why you would oppose this for the Corps. What barriers do you see for doing the same kind of direct funding with the Corps?

General GRIFFIN. Well, we support the direct funding on nonroutine major maintenance and major rehab. In fact, we have just concluded an agreement to repair Ice Harbor Unit 5, that I am sure you are well aware of, under an agreement that we have right now with BPA.

It is the routine maintenance, the day-to-day O&M maintenance where we have a concern, and specifically is that other purposes, not hydropower, would suffer under a change in funding mechanisms.

The best way to illustrate this is—and again, we will try to work through this, but it is really a policy issue. But an example might be, you might build a road into a multipurpose project that we operate not only hydropower but recreation, navigation, irrigation, and the reasons that we are authorized to operate a project.

So you might be building a road in, and it will benefit navigation and hydropower. Well, it may be a hydropower facility that is very, very low down on BPA's priority, and they may say no, we do not want to pony up part of the money for the road. So, therefore, navigation may suffer, not being able to get that new road to the lock and dam that supports not only the lock and the hydropower.

So those are concerns, on our ability to resource the multipurpose projects day to day, not the major maintenance and rehabilitation, which would be around $40 million to $60 million.

Senator MURRAY. Mr. Hardy, maybe if you could—and not to negotiate this right here, but could you just tell me how you solve those problems with Bureau of Reclamation?

Mr. HARDY. I would ask John to comment on this as well. We found out that concern simply has not been an issue with us. John has every bit as many multipurpose uses in his facilities as the General has in his, and what it has forced is put to us on a more businesslike relationship where we fix things when they break, or

on time, or we can plan maintenance with stability in an integrated fashion over a 5-year period.

If you get to the kind of problem the General is describing you can spot it early on, and there may be some allowance for some small percentage of funds, in our view, that would be appropriate to keep on a reimbursable level.

But simply saying we have $90 million in reimbursable now, which is about, I think, where the Corps O&M budget is, and we are going to add $50 million on top of that, with only that $50 million you can fund Bonneville, no, from our perspective that does not force the integration that you need and the efficiencies that you need in that program. We have simply not found that to be an issue with the Bureau.

Mr. KEYES. We have multiple use facilities all over the region. We have been able to allocate those costs and the operation, so that is not a problem. We cover our fish and wildlife aspects for the rest of the work, our recreation and so forth, outside of the power funding, and we have not had that problem in all of the time that we have been working under these agreements.

Senator MURRAY. So I am hearing you say that direct funding has allowed you to be more efficient and make longer term decisions to fund things in a way that makes more sense for taxpayers.

Mr. KEYES. That is exactly what we have found in Reclamation.

FUTURE FISH COSTS

Senator MURRAY. Thank you. One other question. Mr. Hardy, you talked a little bit about the post-2001 era that we are going to be facing, and that is when the memorandum of understanding expires, and you talked a little bit about this, but if you could be a little more specific for me on what you suggest we do to establish some certainty about fish cost over a longer term period, I would appreciate it.

Mr. HARDY. We are working within the administration to try to figure out how to address this issue, and also within the region to try to either extend the existing fish MOA or have some cost certainty for some period of time post-2001.

We think, and I think the customers who are potential purchasers of our power post-2001 think that such an extension to provide certainty on future fish cost is an absolute prerequisite to their signing any agreement.

As I described in my opening statement, Senator, we have a big post-2001 cliff problem, where 75 percent of our revenues are up for grabs when our contracts expire on October 1, 2001. I think it is highly doubtful that customers will sign new contracts unless there is some certainty around post-2001 fish cost.

All that being said, I think we should talk not just about fish cost, but we also need a forum in the region to talk about mitigation measures, and so it is my hope that we can talk not just about letting us extend the fish MOA at its roughly $400 million level, but let us talk about priority tradeoffs within that funding level where you can find those different mitigation measures, even maybe a down payment on a drawdown.

I think there are credible ways we can do that, but we need to engage that discussion in the region so it is not just a cost discus-

sion, but it is a cost and measures discussion. I am not pretending that there is any solution out there, but if we could identify four or five options, some of which might be drawdown options, some of which might be nondrawdown options, but have the confidence with that the right kind of priority tradeoffs we could finance any one of those options. Then at least Bonneville is financially indifferent to the eventual outcome and our financial integrity is not at risk depending upon what fish strategy is taken.

That, as we found out 2 years ago when we negotiated the original MOA, was the one thing that the administration and the delegation could agree on, we need to save the fish and we need to keep Bonneville financially healthy. We have to construct a circumstance where we get to that same outcome, and if we pursue either of those objectives to the exclusion of the other, we will not get very far.

Senator MURRAY. Thank you very much, Mr. Chairman.

Senator GORTON. Senator Wyden.

Senator WYDEN. Thank you, Mr. Chairman.

First I wanted just to say thank you to you, Mr. Chairman, for inviting me. As a nonappropriator I find this very helpful, and I thank you for your courtesy.

Senator GORTON. Well, every now and then it turns out that something substantive turns up on these bills, Senator Wyden, and we want you, if that should happen this year, to be a full participant.

BONNEVILLE-RELATED LEGISLATION

Senator WYDEN. Thank you, and I appreciate the chance.

Let me start with a question about legislative issues if I could, Mr. Hardy. If the Northwest delegation chose, for example, to pursue a Northwest approach either through a bill involving just Bonneville or, in effect, what would amount to a Northwest section of a national piece of energy deregulation, what do you think ought to be in that bill, other than essentially the separation of generation and transmission?

Mr. HARDY. Let me start by repeating what I have said several times in this hearing. The administration has not yet taken a position on any bill, and obviously I will be a part of the administration whatever they decide to do.

Clearly, from my perspective I think the best hope of implementing something is to take the regional review recommendations and try to move those forward. Those clearly involve a legislative separation of Bonneville. Whether they involve any other legislative issues I think it is too early to determine.

I think there are some issues, some recommendations on the subscription side that the regional review made that if you literally implemented them would require legislation.

I think those are second and third order issues. It is my view that we can get 95 to 98 percent of the way there without legislating, and that the major issues are best dealt with administratively. We are engaged in a process now, both with congressional staffs back here and with the regional review transition board to take a close look at subscription issues and the subscription process and

make a judgment as to whether we can, in fact, do those administratively or whether some selected issues require legislation.

I would be happy to get into the specifics if you have an interest, but as a general matter I think we can do these things administratively.

Senator WYDEN. Well, getting enough customers to subscribe is really the make-or-break issue for Bonneville, and clearly we are going to need to know before too long whether Bonneville has sufficient authority to go forward with a successful subscription process.

PUBLIC PURPOSE CONCERNS

A second issue that I would like to ask you about are the public purposes, the question of conservation, renewable, and low-income issues. What is their future in this kind of deregulation, go-go kind of environment?

I have to tell you that I am concerned even with the 3-percent target figure that the regional review has staked out. My sense is that you all will probably be at 60, 65 percent of what you are doing now in terms of conservation and renewables and services for low income. What is the future of these concerns that I think are extraordinarily important to people in the Northwest?

Mr. HARDY. I think they are under substantial pressure to be reduced, to the degree they are funded by us. But I have been pretty encouraged, actually, that most of the State legislatures have stepped right up to the 3 percent limit. In most of the legislative activity that has incurred in all the Northwest States, Montana may be a slight exception for some unique reasons, but particularly in Oregon and Washington, most of the bills that have been considered or are moving forward have adopted the 3 percent, which I think is a pretty good base level of funding for conservation renewables and low-income activity.

I do think that if more needs to be done it is probably best handled at the retail level through a nonbypassable kind of charge of the type that the regional review envisioned when they made the 3 percent recommendations. That has the least distorting effect on the competitive market, and it is just like a meter's charge or a customer charge that utilities put on their bill now. And it seems to me that is the most appropriate place to handle it. So whether you are a power supplier, if you are Salem Electric or Bonneville or Enron or PGE, you have got a nonbypassable charge that collects whatever the legislature deems is the appropriate amount to be collected to fund those public purposes.

Senator WYDEN. What is your calculation if every legislative went to 3 percent, what is your calculation of what percentage of current funding we would be able to achieve?

Mr. HARDY. The regional review calculated that 3 percent would yield about $210 million a year regionwide, and I think that was some 65 percent of the amount funded. I do not know the derivation of that number. The percentage seems a little low to me, and I would like to answer that for the record, Mr. Wyden, if I could.

[The information follows:]

FUNDING FOR PUBLIC PURPOSE OBJECTIVES

The final report of the regional review included a recommendation to ensure that cost-effective conservation, renewable resource development and low-income weatherization are sustained during the transition to competition and beyond, that, by July 1, 1997, 3 percent of the revenues from the sale of electricity services in the region be dedicated in aggregate over the region to those purposes for a period of 10 years. Based on 1995 revenues, this amounts to approximately $210 million per year. This $210 million is 65 percent of what was spent for these purposes in 1995 by the region's utilities and Bonneville.

Senator WYDEN. You see, what I am concerned about, and the chairman and I have discussed this a little bit in the Northwest meetings that we have been having, is that particularly during any transition period, to have such a significant cutback might be very difficult for any transition period. I think that if you are talking about longer term changes, people might well look at other kinds of approaches. But I really sense that for those of us who have fought for conservation, fought for renewables, and have said low-income folks should not be left behind, I think that is quite a hit to take, and I am particularly concerned about the ramifications during the transition.

WPPS'S DEBT REFINANCING

The third area I wanted to touch on involves the question of controlling costs. A couple of my colleagues talked a bit about that, as well, and you all, of course, have had experience with recent legislation in terms of restructuring Bonneville debt, and my question would be do you believe that there are any ways, with respect to refinancing the WPPS's debt at this point that could be a possibility for reducing future costs?

Mr. HARDY. I do not see any options I regard as realistic or prudent. To refinance now you would have to have a significant drop in interest rates. We refinanced most of the WPPS's bonds in the 1989–96 period for an average interest rate of something as I recall in the 6 percent neighborhood, and I just do not see that as being in the cards.

Now, you might be able to make an argument, Senator Wyden, if this is where you want to head, that you could refinance now, roll all the costs forward into the post-2018 time period, when all 7 billion dollars' worth of WPPS's debt is retired, and essentially keep our cost low now. I would tell you that we have been there, we have done that. In incurring another substantial amount of debt to put it into a window when we will have less costs, you end up paying a huge amount of debt service in the intervening time period which does not go for any productive purpose. I would counsel against that.

We have had experience with that in the past, especially with the supply system plants, and inevitably you have concerns that come up that are really urgent regional needs. To have a chunk of your ability to finance those taken up by pure debt service is not the most desirable outcome.

MARKETING BONNEVILLE POWER OUTSIDE THE NORTHWEST

Senator WYDEN. A question on rates, particularly how we stack up in the Northwest at this point versus some of the national rates. Now, in your testimony you said, "Competition has brought whole-

sale market prices to below Bonneville cost-based rates." And you also go on to say that the 1996 Energy and Water Appropriations Act allows Bonneville to market excess power outside the Northwest, and that is going to increase revenues and improve Bonneville's competitive position. So in effect, I guess Bonneville makes the argument that the agency can continue to make money selling power outside the Northwest, even though prices are now above Northwest market prices.

What kind of data do you have to support what you are saying with respect to the market for Bonneville power outside the Northwest?

Mr. HARDY. Well, we have two contracts that we have currently signed, one with the Bay Area Rapid Transit Authority in California and one with New Energy Ventures Corporations, which is an aggregator in California of a variety of loads. My recollection is the BART contract has been for something on the order of 50 to 60 megawatts. The NEV contract is a contract for 200 megawatts initially, with an option for another 200. Those contracts have been at PF prices, so they have been at the 22 to 24 mills per kilowatt hour price.

We know there is at least some market there. How much of an additional market we have is not clear. A lot of it depends on what happens on the restructuring in California, how the so-called power exchange is set up down there. I would not want to give you the impression that there is an enormous degree of additional revenue potential there. We think there is some, but this is a west coast market, and we are seeing the same kind of low prices in California as we are seeing in the Northwest.

We are managing to find a few niches in a few places principally by looking to go beyond 2001 with some of these contracts, so you make up in terms of the length of the contract for the real low commodity price today. But there is a limit to how much of that you can expect to market.

REGIONAL RATES VERSUS NATIONAL AVERAGE

Senator WYDEN. Do you have a new study on prices that indicates Northwest electric prices to be about 65 percent of the national average, and that would then give Bonneville some opportunities to make some sales outside the region at times?

Mr. HARDY. Yes; it is true that our rates, and not just Bonneville rates but all regional rates, are substantially less than the national average and substantially less than those in California, because California is a fairly high-cost State. But that is all embedded cost prices.

The market we are competing in here is a variable cost market. I still think that there are some opportunities in that market, but we are marketing against Enron, and against other providers, who are marketing a product at variable cost plus one-half a mill, and it is pretty much the same product. I think that will gradually improve over time as the market rebounds as gas prices start to go up. I also think the other thing that will give us an advantage is the way the California restructuring works.

Right now, California goes to full retail access on January 1, 1998, and their three big investor-owned utilities have full strand-

ed cost recovery through 2002. But after 2002 they do not have any stranded cost recovery.

Right now there are several major generating plants, nuclear and some of the older oil and gas-fired units. The only reason they are running in California is because they are covered by rates from captive customers who do not yet have direct access to the retail market. When you have full retail access and you no longer have stranded cost recovery, you will have several units that are uneconomic and in our judgment cannot continue to run, and they will shut down. And when you remove that much supply, and I am talking about several thousand megawatts of supply, even in a market that is as big as the west coast market, that will tend to drive the price up.

I cannot tell you whether that is going to happen in 2001 or 2005 or 2007, but I am pretty sure it is going to happen sometime in that timeframe, and at that point the market will look pretty good for the kind of cost-based hydropower product that we currently have.

Senator WYDEN. That is a helpful answer, and obviously, my interest, as with all of our colleagues, is to protect ratepayers, and clearly the question is what kind of new tools are you going to have. The question about California, the question of the 1996 appropriations bill, we want the agency to have tools to be able to protect the ratepayers.

One closing comment, and then a point for you, Mr. Keyes, I think, Mr. Hardy, we are moving into a very critical time with respect to the deregulation debate. I think we have seen over on the House side that they have begun field hearings, for example, on the energy deregulation issue, and I think it is going to be especially important that we in the Northwest are vigilant now over the next few weeks.

I think that if a major deregulation bill is to go forward, I think you are going to see that determined over the upcoming weeks, and Senator Gorton has got a group of us in the Senate working on these issues from the Northwest perspective, and we may need your counsel very quickly, depending on what happens on the House side. We thank you for your answers.

WATERSHED RESTORATION PROJECTS

Just one point for you, Mr. Keyes. Last year I worked with Senator Gorton to provide the Bureau of Land Management the authority to work with private land owners on some cooperative watershed restoration projects. My understanding is that the Bureau of Reclamation would like to look at some of these kinds of issues as well, and there has been an interest in the Department, is that correct?

Mr. KEYES. Senator Wyden, we are working with a number of watershed councils already. We were looking at an expanded authority when we were looking at that Bureau of Land Management, and we would certainly welcome that if that could happen.

Senator WYDEN. Senator Gorton was very helpful to me. I think I had been in the U.S. Senate all of about 2 weeks at that point and folks on the Oregon coast were interested in the Bureau of Land Management having those powers, and it is not directly the

subject of today's hearing but, Mr. Chairman, I would like to pursue this with you because I think what we found at home is industry folks, scientists, environmental leaders, have felt that it is particularly helpful to have this authority because then they can work the whole watershed, both the private land part and the public land part, and I would like to be able to pursue that with you.

Senator GORTON. You are most persuasive, Senator Wyden.

Is that it?

Senator WYDEN. Yes; thank you.

MEMORANDUM OF AGREEMENT EXTENSION

Senator GORTON. Mr. Hardy, would it considerably assist your subscription process if the memorandum of agreement were ratified by statute and extended, say, for 5 years to the year 2006?

Mr. HARDY. I think it would considerably assist the success of the subscription process for the agreement to be extended. Whether it would help to have the additional imprimatur of some statutory recognition of that I do not know. I do not think it could hurt, as long as we avoided sufficiency and other kinds of issues. But more to the point, having a kind of a unified bipartisan expression from the delegation about the criticality of having that agreement extended and that expression hopefully reflected in the administration and in the region would be the most helpful thing, whether that is memorialized in a statute or whether that simply is the interest and concern of delegation members applied directly to people.

Senator GORTON. Now, you also stated that you really wanted to go beyond just costs, and you wanted to look at results, the way in which the money was used. In that connection, to do that right, are you not going to require some kind of decisionmaking authority that can make a determination as to how the money can be spent best, looking at the entire region and all of the interests for which that money is to be spent.

Mr. HARDY. That is true. You need a structure. We have one now. There are various views as to how well or poorly it works to administer that money, both in terms of the Northwest Power Planning Council's program, the direct funding of capital improvements that we do principally with the Corps, and the various operational measures and how we operate the system that is principally driven by the National Marine Fishery Service requirements. And I think continuing to perfect that system would be helpful.

Whether broader changes in the form of giver governance are required is simply an issue that I do not have good recommendations on, Senator. I am frankly trying to stay below the flack level on that issue and get to a point where we can address the post-2001 fish cost issue now, because we need to now, but also be able to talk about measures. So even though you have not decided and everybody might have their favorite option as to what is going to save the fish, everybody from the environmental community to our utility customers would have confidence that their favorite option could, in fact, be financed, given the requisite tradeoffs under the $400 million kind of cost parameter.

If we could get that far I think that would help the regional interests know that they at least had not prejudged options by virtue

of extending the fish cost MOA by another, say, 5 years. What I am worried about is in the absence of that folks will think you automatically, by extending that cost cap, have taken options off the table. I do not think that is the case, and I think we need to engage in a process, a little confidence building, that hopefully demonstrates to the various interest communities, including the tribes and the State fisheries managers, that that does not have to be the case if we approach this right. And part of that is also the institutional structure of who makes those decisions and how they are made.

REDUCTION OF POWER RATES

Senator GORTON. As Senator Wyden pointed out, we are in the midst now not just of a regional debate, but a national debate on competition in the marketing of electric power. Those of us from the Pacific Northwest are particularly concerned as a low-cost area as to whether or not we are going to receive any benefit from this overall debate. But let us leave retail competition, as vital as it is, aside for one moment. Can you tell me whether or not since the Energy Policy Act of 1982 and the resultant increase of competition in the wholesale electric power market, by how much your rates, Bonneville's power rates, have been reduced in the 5 years since that law was passed, and whether or not there has been a reduction in other wholesale power rates in the Northwest.

Mr. HARDY. Well, as I indicated in my opening statement, our rates have been reduced by 15 percent in the last 3 years. That has been the first rate decrease in our entire 60-year history. That, I think, gives you a pretty good measure.

Senator GORTON. So it is actually 15 percent lower plus any increment by which it might have gone up in the absence of that.

Mr. HARDY. That is true. To draw the picture a little more clearly, go back to 1993, 1 year after deregulation, but before this was fully manifested, we had a 15-percent rate increase. And then in 1996, almost exclusively because of the competition, we had a 13-percent rate decrease.

As I also described in my opening statement, we are at 22.5 mills now for a DSI-like customer, and we have a goal of 2 cents in 2000. It will entail another 10-percent rate decrease to meet that goal, which we fully intend to meet, because we have to meet it to be competitive. So I would say in the near term at the wholesale level competition is having precisely the effect that folks had hoped it would have.

That does not mean, however, to prejudge the larger issue about whether it is wholesale competition or ultimately retail competition because the low-cost regions get averaged up and meet the high-cost regions halfway in the middle. I think you could make good arguments on either side of that.

I do not think that will happen initially, but whether that happens over the long term is anyone's guess.

Senator GORTON. Well, I do not know that there are good arguments for that at all. Certainly from our perspective there are not. And one of the reasons that the authorizing committee has five Northwest Senators is to see to it that this lowering of power rates

in the rest of the country, which is totally appropriate and very much to be desired, does not come at our expense.

We recognize that we cannot get as dramatic a set of decreases as the rest of the country has, because we start from a lower base. But I do not think that there is the slightest degree of interest in our going up in order to meet them on the way down.

RETAIL COMPETITION

Let me ask you whether or not that 15-percent figure or anything like it is also the case with other wholesale marketers in the Northwest in the last 5 years. Have you been meeting competition, or have you been operating in isolation?

Mr. HARDY. No; we definitely have been meeting competition. The unique aspect of this is that for retail customers, I do not think rates have gone up. My perception is also they have not gone down very much. That illustrates a very unique aspect of this competition, which from my perspective is a pretty unlevel playing field.

We are 100 percent wholesale, so we have to recover all of our embedded costs in our rates and still set competitive rates. If you are Washington Water Power or Pacificorp you are only about 20 percent wholesale. Your other 80 percent of your load is covered with captive customers, where embedded costs are fully covered in retail rates to captive customers. Thus, you can compete on the margin with us and actually undercut us because you do not have to charge your rates to your retail customers. It has already been approved by the PUC, and you are covering your embedded costs in that, and you are free to compete with Bonneville on the margin. I do not have that luxury, and that has presented us with some pretty unique problems.

Senator GORTON. So retail competition and retail choice would not only be an advantage to the retail customer, it would be an advantage to Bonneville in its competitive nature, as well?

Mr. HARDY. I think it would be, because it would level the playing field. And even though we have made a conscious decision not to compete at retail, it would not give other investor-owned utilities the luxury to continue operating with all of their embedded costs covered with captive customers anymore. They would have to compete across the full range of their costs.

Senator GORTON. Well, that does not apply just to our users, that applies to publics as well, would it not?

Mr. HARDY. It would, yes.

Senator GORTON. How much do you have to reduce your costs to be able to reduce your rates by 1 mill? You have talked about a 10-percent reduction in the next few years, but just per mill, how much in cost reduction does that require?

Mr. HARDY. Each mill decrease entails about an $80 to $100 million annual cost reduction.

LEGISLATION ON COMPETITION

Senator GORTON. Our legislature in the State of Washington has considered a competition bill, a deregulation bill, this year. It is obviously not going to pass this year, but it is my impression that there is going to be a serious attempt on the part of a broad range

of interests to see to it that some kind of competition bill does pass our legislature early in 1998. If we or any of the other States in the Pacific Northwest were to enact legislation opening up that State to competition, how would that affect BPA? Have you participated, have you testified or given your views to our legislature or the Oregon legislature on this subject?

Mr. HARDY. Yes; we have, Senator. We have participated in all four State legislatures. We are supportive of consumer choice, and have so indicated to each of the legislatures. If you make the effective date of full retail choice some date prior to October 1, 2000, that could present a transition problem relative to Bonneville, and it manifests itself in this way: If you mandate full retail access by, say, July 1999, which was the date recommended in the regional review, and do not have language protecting the revenue expectations for public agency customers under Bonneville's existing contracts, we might run into a problem of folks essentially seeking to get out of those contracts or avoid those contracts for the 2-year period between mid-1999 and late 2001.

We have worked with the legislatures to say can you help us manage this problem, either by putting language in the bill saying honor the revenue expectations for this 2-year transition period, or make it voluntary in the case of the public agency customers so they can elect to solve this problem themselves, or give them the ability in their stranded cost recovery vehicle to charge for the failure to meet those revenue expectations so they could meet our requirements. Any of those three options will solve that problem.

In any event, it is probably a 2- or at most a 3-year transition problem, and we have found, I think, fairly receptive audiences in each of the State legislatures to try to work with us to manage that transition problem so we do not end up with some big Federal-State confrontation over something that is an eminently resolvable issue in each of the State legislatures.

STRANDED COST DEFINITION

Senator GORTON. Describe for the lay person what the term stranded cost means, what stranded cost BPA faces, how it proposes to deal with them, and whether or not it thinks it has any hold on its customers whose contracts expire in the year 2001, or years after that time, if they do not sign new contracts.

Mr. HARDY. Stranded costs, as FERC has defined it in Order 888, refers to costs that were incurred prior to, I think it was 1994 or 1995, with the reasonable expectation of continued service on the part of the utilities. For example, when I was with Seattle City Light, I made investments in a generator or a transmission upgrade or a distribution upgrade in 1985 or 1990 expecting that my customers were going to continue to be captive customers pretty much forever.

And all of a sudden the world changed in 1995 or 1996, to full retail access, or in Bonneville's case to wholesale access. After such a change, customers have the ability to choose and leave those investments that were made with the "reasonable expectation of continued service" stranded. That is the best example, in lay terms, that I can provide of stranded costs.

FERC has been very specific about how they apply that definition in ways that probably do not literally fit the Bonneville circumstance. I would tell you post-2001 it is probably not appropriate to say that we have a stranded cost problem in the way FERC defines it. We have a cost recovery problem, and while that may seem like a fine distinction, it is pretty important lest we miscommunicate on this issue.

We have no contractual hold on our customers post-2001. We think we have some cost recovery rights post-2001 should we choose to exercise those, but our goal, as I stated in my opening statement, is not to do that. Our goal is to cut our costs and to improve our revenues to get the 2 cents in 2000, and we think in most cases that will avoid any cost recovery problem.

If, however, we have a cost recovery problem post-2001, we have at least some vehicles, possibly using the transmission system to collect some additional revenues. They are not vehicles that I want to use if I possibly can avoid it because they have a poisonous effect on the very customers that you are trying to voluntarily get to sign up for your power, but to fulfill our statutory mandates to recover our costs and protect the taxpayer, we still may have to exercise those. These vehicles will not be immune from substantial and aggressive legal challenge if we choose to exercise those.

For all of those reasons, as part of the separation legislation, that is one of the key issues that the transition board and the Congress and the delegation are going to have to deal with.

JOHN DAY DAM DRAWDOWN

Senator GORTON. On another subject, dam removal and John Day drawdown. As you know, the subcommittee has received a request about 1½ months ago to study the social and economic impacts of a drawdown of John Day Reservoir. By the end of this week I hope to have an agreement with all of the necessary parties to provide a limited approval of this reprogramming to enable the Corps to put together a study plan for review by the committees of how it would study the biological and social and economic impacts of a drawdown of John Day to spillway crest, and a natural river.

Mr. Hardy, at this point I would like you to comment on the implications of proposals either to remove dams on the Snake River physically or by bypassing them, and/or lowering the level of John Day to spillway crest, or to natural river.

How much energy would we lose? What percentage of the Northwest hydroelectric power do they provide? Has BPA made the very analysis that the Corps is asking us for of the power costs at least, and environmental impacts of those removals or modifications, and we will stop there with those three or four questions.

Mr. HARDY. Yes; we have made at least some preliminary analysis which we would intend to provide to the Corps as part of their EIS and study process. Let me talk about power supply impacts, cost impacts, and rate impacts, in that order.

The four lower Snake dams are 15 percent of our power supply on average. The common mistake in the media, they are 5 percent of the region's power supply, but they are 15 percent of Bonneville's power supply.

Removal of the lower Snake dams is not a trivial matter in a power supply sense. This is not just a navigation problem. It is both a substantial power and a navigation problem. It represents 15 percent of our power supply. John Day represents about 11 to 13 percent of our power supply, depending on whether you are talking about energy or capacity.

The lower Snake projects have a $3.5 billion net present value. The John Day projects have a little over $4 billion net present value. The levelized NPV per year for the lower Snake dams is about $180 million per year.

Senator GORTON. NPV?

Mr. HARDY. Net present value, I am sorry. It is $280 million per year nominal, $180 million per year levelized. The levelized is probably a more accurate figure for the cost and rate impact in the near term. The net present value cost impact is $330 million a year nominal, or $215 million a year levelized for John Day, if you take the drawdown all the way to the natural river.

The rate impact, if you take out the four Snake projects is a 12- to 15-percent rate hit on top of what we have already. Now, recall that our rates are already 15 to 20 percent above market, so this is going to add another 12 to 15 percent on top of a system that already is substantially above the market price.

John Day at natural river is about 15 percent as well. John Day to spillway crest is more on the order of a 10-percent rate impact.

If you do both lower Snake and John Day to spillway crest, you are talking about an aggregate 20- to 25-percent rate impact, again on top of the 15 to 20 percent that we are already above market.

So those are, as best as I can define it for you, the cost in net present value and the rate impacts associated with those various options.

Senator GORTON. With that tremendous negative impact both on your competitiveness and on your ability to make your debt payments, right?

Mr. HARDY. Yes; I think there is no other way to describe it.

ALTERNATIVE SOURCES OF POWER

Senator GORTON. Can you tell us what the environmental impacts, especially the air quality impacts would be of alternative sources of power? One assumes that at the present time the new generation facilities would presumably be natural gas combustion turbines, would they not?

Mr. HARDY. Correct. I think that is a safe presumption.

Senator GORTON. If they were in the region, would they have an impact on air quality?

Mr. HARDY. Yes; they would. I think you would have two impacts, although I do not have precise numbers for this. I think that is something we would have to do substantial additional work on, but you would have an air quality impact for those resources being constructed within the region, if they were constructed at all. That is a serious question in today's power market. You would have an air quality impact in the L.A. basin because we would not be exporting as much hydropower to California that typically displaces oil and gas fire generation there.

Senator GORTON. I may say, just as a comment here on a different level, General, I think what the Corps wants to do is valuable. I have some constituents who just want to say an absolute no right now, and I have great sympathy with them, but I do not think we know the details of all of these, other than fish impacts of that drawdown, so I am working to give you the authority to do that, if only so the people of the Pacific Northwest will have a very good way of determining what all of the costs of various proposals are.

So as I say, we are working and we are going to try to come up with an answer to you at least for this first stage by the end of this week, and then this bill, the bill that is before this subcommittee, of course, will almost certainly tell you whether you can go on from there.

AMENDMENT ON FISH AND WILDLIFE PROJECTS

I want to get back to you again on my own conflict of interest amendment on the $100 million for fish and wildlife projects. The design of the amendment was to change the process by which the dollars were awarded by making sure that independent peer-reviewed science was used in the selection of the projects to be funded, and not simply on the basis of the fact that an individual applicant was also on the selection committee.

Now, the amendment has not even been law for 1 year yet, but I want you to tell me, give me your observations of how it is working. Have we made a gain, and should we make any changes in it? Can we improve it this year?

Mr. HARDY. I think it is working well. I think we have made gains. It is a little early to make precise judgments. The council's scientific board has literally been overwhelmed with a number of projects, but they have made some kind of aggregate level evaluations and have raised, I think, some substantial questions about the types of projects. I think that is good, and that will over time build integrity into the process.

I do not have any specific changes, Senator, that I would recommend this year. I think we need at least another year to let the process work so that the board can get into a routine and can evaluate these things in a more detailed level. They simply have not had the time to do that as thoroughly as they might like this year.

I think given another year they can do that, and then they can make some pretty good assessments as to whether the process needs to be changed or whether the mix of projects is the appropriate mix or needs to be changed. I would frankly defer to the power planning council and to the board itself, given that additional year's experience, to come back to you and to the delegation and report to you on how that is going.

Senator GORTON. Thank you.

Mr. Keyes, with one exception you have gotten to be an interested spectator at this hearing. You did answer a question that I also had, I believe, for Senator Murray, but I just wonder as we bring this to a close whether you have got any other words of wisdom you would like to leave with the subcommittee.

Mr. KEYES. Well, Mr. Chairman, we have benefited from about 5 years of operation with Bonneville on direct funding of capital items. We are in the first year of funding of regular O&M. We think that the planning that goes into that and the close work with Bonneville will benefit the life of our facilities and provide us with the funding stream that will allow planning that we were not able to do before.

I would have to add that that has built a closer and more satisfactory working relationship between the organizations, and I think the lines of communication are much better than they were before. There is a tradeoff there in control. There is a certain amount of sharing, of decisionmaking that is beneficial that we did not have to do before, but it is well worth the effort that it takes to make that work for us.

Senator GORTON. Thank you, Mr. Keyes.

General, welcome to the Northwest, at least part-time.

General GRIFFIN. Thank you, sir.

Senator GORTON. And thank you for the work you have done and for the thoughtfulness of your presentation on issues that are of great importance to us.

Mr. Hardy, I know of few Federal officials who have been more willing to speak out and answer questions, even though sometimes they have to be conditioned. The help that you give us in dealing with these fascinating and extremely complicated questions cannot possibly be overestimated, and I greatly appreciate it.

Mr. HARDY. Thank you, Mr. Chairman.

SUBCOMMITTEE RECESS

Senator GORTON. With that, the hearing is recessed subject to call.

[Whereupon, at 3:55 p.m., Tuesday, April 15, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1998

TUESDAY, APRIL 22, 1997

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 9:32 a.m., in room SD–124, Dirksen Senate Office Building, Hon. Pete V. Domenici (chairman) presiding.

Present: Senators Domenici, Craig, and Reid.

Also present: Senator Allard.

DEPARTMENT OF ENERGY

ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT

STATEMENT OF ALVIN L. ALM, ASSISTANT SECRETARY FOR ENVIRONMENTAL MANAGEMENT

OPENING STATEMENT

Senator DOMENICI. The hearing of the subcommittee will come to order.

Good morning, everyone. Senator Reid, ranking minority member from Nevada, will join us shortly. I am very pleased to have him as a member of this subcommittee. He has been very busy already, learning the business of the subcommittee, visiting laboratories and various places that we spend money, to see what we are doing. And I very much appreciate his genuine interest.

Senator Allard from Colorado, is here this morning. He is very welcome. And if you have a scheduling conflict and want to inquire early, just tell me.

First of all this morning, the Subcommittee on Energy and Water Development will consider the fiscal year 1998 budget request for the Department of Energy's environment management programs. The Department has requested $7.4 billion for environmental management for fiscal year 1998. Of that, $5.69 billion is for ongoing defense environmental management, an increase of about $75 million or $76 million over the current year. The Department has requested $684 million for nondefense cleanup and $1 billion for defense privatization initiatives. We will spend some time today discussing that.

Our sole witness today is Al Alm, Assistant Secretary of Energy for Environmental Management. Since assuming this position in May 1996, Mr. Alm has proposed two major management initia-

tives, a 10-year plan for cleaning up most of the DOE complex and an effort to privatize much of that effort. Some have strongly criticized the 10-year plan. And, incidentally, some have gone so far as to call for Mr. Alm's resignation.

I want to make it very clear that I view the 10-year plan as an important management objective. For the first time, the Department is setting cleanup goals against which they can be evaluated, and formulating a strategy to turn back some of these sites and render them clean. I compliment Mr. Alm on his leadership in this area. And I do not believe the argument that his 10-year plan will do an injustice to our environmental laws, such as NEPA or the like. I assume they are consistent and should be part of any such 10-year management plan.

So, Mr. Alm, while I have little to do with the executive branch's either appointment of or retention of executive officials, I want you to know that I think we must do something different in this area, and it just cannot continue as it has been. And I thought we were very lucky to get you to come back to the Department, and I still feel that way. And I compliment you on another initiative—your initiative which some call the privatization proposal.

I appreciate the effort that has gone into trying to identify a new approach to DOE contracting. It may be that we cannot proceed with this privatization proposal this year, either because of some concerns or because we simply do not have sufficient subcommittee allocation to provide the $1.006 billion that you are requesting to start with.

In any case, it is a serious proposal. And I can assure you, from our standpoint, it will be taken seriously. I hope you will focus a good deal of your testimony on that proposal as you talk with us here today. I know others may be coming, but I am going to proceed to let you give your statement.

Is that all right, Senator Reid?

Senator REID. Of course.

Senator DOMENICI. Let us go, then.

Senator Allard, would you like to say anything now?

Senator ALLARD. Yes, Mr. Chairman.

Senator DOMENICI. Welcome.

Senator ALLARD. I would like to just kind of get a feel from you on how we are going to proceed this morning. I have a statement for the record and some questions I would like to have submitted after questioning, and then some other questions. And I did not know whether I had a time limit or not.

Senator DOMENICI. Well, let us go with your opening statement first.

Senator ALLARD. OK, very good.

Senator DOMENICI. There is no time limit on it, other than reasonableness, and then we will yield to Harry Reid.

STATEMENT OF WAYNE ALLARD

Senator ALLARD. Very good. Mr. Chairman, first, I appreciate the forbearance of you and the ranking member in allowing me to sit in with the subcommittee today so I can ask Mr. Alm questions concerning Rocky Flats.

Mr. Alm, I am sure you are aware that Rocky Flats is a former nuclear weapons plant in the upper reaches of a watershed that serves 400,000 people, and is upwind of the city of Denver. The proximity of the site causes many Coloradans great concern. As individuals, potentially, who have to live near the Rocky Flats site, they want it cleaned up quickly. And as taxpayers, they want it cleaned up efficiently.

While there have been past management difficulties at Rocky Flats, they have been worked out. And the only impediment to a speedy cleanup of the flats is the commitment by the Federal Government. And in a moment, Mr. Alm, I will be going through a chart during the questioning period, outlining several spending options with you and directing some questions to you in that regard. And these charts will show that if we spend a little more money up front, we can close the plant down quicker, eliminate any threat to the Denver metro area, and eliminate an obligation against DOE.

Furthermore, if we spend a little extra up front, we can save a lot of money on the back end.

So I just want to thank you, Mr. Chairman, for letting me sit in on the meeting this morning.

Senator DOMENICI. You are most welcome.

Senator Reid.

STATEMENT OF HARRY REID

Senator REID. Thank you, Mr. Chairman. I am glad we have the opportunity to look at the environmental management program of the Department, given its impact on sites across the United States and, consequently, the communities where the sites are located.

I have reviewed the background material and the statement given by Assistant Secretary Alm. I think the 10-year planning of waste management and environmental restoration is basically a good plan. One of the complaints against the environmental program—and I think it is justified to some degree—is that there are often no deadlines or end in sight. There are many who have argued that a cleanup of a site could go on indefinitely.

Obviously, the Government does not have funds for endless activity. And the planning of this agency appears to respond to the call for certainty of timeframes, closure of activities and accountability for the programs, goals and objectives. The magnitude of the size of the privatization initiative, which has increased over 200 percent, raises concerns about the Federal oversight and the public interest in cleaning up the sites. So I have some questions about the assurances that the Department can give this subcommittee on the efficient use of these Federal dollars, especially as it relates to oversight.

We are all concerned about individual sites, which have an impact on our communities. I, of course, have some. I do note, however, that funding at most sites decreased in the next year's budget. During the course of your remarks, I would hope that you would discuss the criteria which you applied in increasing or decreasing the funding of waste management and environmental restoration at particular sites.

Thank you, Mr. Chairman.

Senator DOMENICI. Thank you.

I note the attendance in the audience of a large number of young people. Are you all from one organization? I note some Close-Up badges. Are you all Close-Up people? Give us a show of hands, those who are here with Close-Up?

[A show of hands.]

Senator DOMENICI. Well, I do not know whether they told you this would be an invaluable hearing or whether they just told you this was a mandatory performance and that you come. In any event, we welcome you.

Let me just take a moment, before we get to our witness, and tell you what this hearing is about. In the U.S. Senate, we have an Appropriations Committee. That committee takes care of spending all the money that we spend in the U.S. Government for domestic and defense activities, other than the entitlements, such as social security and medicare and the like. And we must appropriate the money under current law every year.

For management purposes, the Appropriations Committee is divided up into 13 subcommittees. The only way you can run business in a legislative arena is to have committees. And when a committee has such a big undertaking, the only way it can conduct business is to divide into subcommittees. Each subcommittee has a chairman and a ranking member. In this case, I am the chairman. I am from the State of New Mexico. Senator Harry Reid is from Nevada. He is the ranking member.

This committee, which is given the job of providing all of the money that the Department of Energy spends, both for domestic energy research purposes and for the defense activities that have to do with nuclear weapons—their maintenance, their stewardship, their safeguard, and now the build-down. In addition, we have a little side job of a few billion dollars to provide for the waterways of the country and the Corps of Engineers.

As an example, right now, within the next few days, we will appropriate about $400 million in an urgent supplemental to the Corps of Engineers. Because of the flooding and the other things that are happening, the Corps of Engineers will be involved in rebuilding, replenishing and doing some of their work.

But today, we took one little piece of this budget—I should not say little; it is getting very, very big—it is the fastest growing part of this budget by far, more so than nuclear weapons and the like—this is the cleanup of the residual effect of our nuclear weapons development. Four or five cities in America were the places where we did a lot of this work and now we are not doing it anymore. And we have to take the nuclear residue, which is radioactive and dangerous, and we have to make it, in some way, safe. And it is costing a huge amount of money.

As an example, for just one aspect of it this year, the part that will clean up defense waste is $7.4 billion. That is a lot of money. To put it in perspective for yourselves as young people, we spend about $14 billion for all the research we do in all of medical research. And to clean up this residue, we are going to have to spend about $7.1 billion. And this one is growing dramatically. And so this gentlemen, as part of the cabinet of the President, under the Department of Energy, for at least 6 or 7 months, almost 1 year,

DOE has been in charge of trying to give us some new way to solve this very, very serious problem.

OK? And we will not have any questions.

Senator REID. Mr. Chairman, my only disappointment is I thought these were all press and lobbyists out here. [Laughter.]

Senator DOMENICI. Senator Reid is running for reelection. He would very much like for this to be a room full of press people, just with the hope that he might get a little press coverage in the State of Nevada.

Sorry, Harry. Even if you were impressive today, it will probably go unnoticed. [Laughter.]

Mr. Alm, would you proceed, please.

STATEMENT OF ALVIN L. ALM

Mr. ALM. Mr. Chairman and members of the subcommittee, I must say that it is rare that I have been able to draw such a crowd at a hearing. [Laughter.]

I want to thank the chairman for his kind words and also indicate that I think the quality of the staff on the committee is absolutely first rate, and we really enjoy working with them. It is a very professional relationship.

FISCAL YEAR 1998 BUDGET

The fiscal year 1998 budget is a transitional one. We are shifting from a program that was projected to span many decades to one focussing on cleanup of most of the sites within a decade. We are implementing strong incentives for performance—I will get into that in a moment. I am going to cut down the prepared statement substantially so we can get to the questions. But I want to describe where the program has been and where it is going.

The EM program grew exponentially from 1989 to 1993. Funding went from $2.2 billion to over $5 billion. At that time, people were projecting a program of $10 billion a year. Well, a number of events occurred, including Secretary O'Leary's strategic alignment initiative and much more severe budgetary pressures. And that meant that the Department had to begin to focus on performance and becoming more efficient.

And from 1993 to 1996, incentive-based contracts were put in place, efforts were made to reduce support costs, and more work was done in the field, as compared to studies. And that has laid the basis for where we are now. And that is an opportunity to complete cleanup at most of the DOE sites within a decade. That does not mean the large sites, like Hanford or Savannah River or Oak Ridge and Idaho, but it means the vast majority of the sites can be cleaned, although DOE will maintain a stewardship role.

PROGRAM CHALLENGES

The challenges facing this program are formidable, and understanding them is central to how we make progress. First of all, we are responsible for managing some of the most hazardous materials in the world—high-level radioactive waste and hundreds of large underground tanks and plutonium inducts and other storage mechanisms in our Rocky Flats site, for example.

Second, we have extremely high fixed costs at some of our facilities. And that means that the longer we delay cleanup, the more money we spend just paddling water. And third, we must comply with numerous——

Senator DOMENICI. What does a high fixed cost mean in our language?

Mr. ALM. It means a very high cost for maintenance, for security, for safety. In other words, if you can go into a building and decontaminate it, your security, your health and safety costs, all those costs will go away.

Senator DOMENICI. So it is sort of like the landlord costs, with us being the landlord of a very dangerous place.

Mr. ALM. That is right.

Senator DOMENICI. OK.

Mr. ALM. Third, we must comply with numerous, complex Federal and State environmental laws, regulations, compliance agreements, court orders, and the recommendations of the Defense Nuclear Facilities Safety Board. So these basic challenges really drive the modus operandi of the environmental management program. We are trying to meet these challenges in a manner that involves States, tribes and the public in on open decisionmaking process.

TEN-YEAR PLAN

To achieve the 10-year goal, three elements are necessary. One, stable funding over the period. Stable funding is very important if you are going to be able to run a long-term management program, so that you can create stability, minimize disruptions to the work force, efficiently plan for future activities, and optimize the sequencing of work, and, frankly, not use all your energies up in the budget game, but rather spend your time on management, which I think is very important.

Second, we need substantial productivity improvements. My testimony indicates a number of actions we are taking to reduce support costs and to improve the productivity of the complex. I have met with the field managers in the EM program, and we have been jointly working on two goals—one, a reduction of support costs from the present average of roughly 45 percent to 30 percent. Second of all, we will set annual efficiency targets, which means that contractors are going to have to go through a period in a contract of continuing improvement, continuing to become more efficient.

PRIVATIZATION

The third key element is the privatization initiative. Privatization, as we define it, is a form of project financing. It is used increasingly around the world to fund water, wastewater, and powerplants. We are taking this privatization concept and applying it to the DOE program. Under privatization, the private sector is responsible for financing, designing, building, operating and, finally, disposing of a facility. The Government does not pay until the product or service is delivered.

Privatization has a number of advantages. First, it is substantially cheaper than the current M&O system. And I think it is substantially cheaper for an obvious reason—competition always engenders more economic results.

Second, privatization allows the Government to initiate projects earlier, thereby helping to reduce mortgage costs. If we cannot do this, and if we have to take these projects and push them into the base funding, our ability to pursue mortgage reduction will be substantially reduced.

Third, 75 percent of our 1998 privatization request is related to compliance requirements. For example, the tank waste remediation system is required under a compliance agreement with the State of Washington and the advanced mixed waste treatment facility in Idaho is critical to meeting the Idaho compliance agreement—upfront funding for these projects is extremely important to demonstrate to the financial community as well as vendors that the Government is fully committed to carrying out the privatization initiative. We are asking industry to shoulder more of the inherent risks of our work than ever before. And a show of commitment from the Government is vital.

The budget appropriation is an amount that would allow for the cost of termination, if termination ever occurred, which we hope it never does. The general rule of thumb that we have been trying to use is that the amount of budget authority made available should be equal to about 1½ years of operation. So you get a little bit of flexibility, although the numbers in the budget are not always consistent with that.

All the elements I have spoken about today, stable funding, increases in efficiency, and our privatization initiative, are designed to allow us to accelerate the program. Continued success in these areas will allow us to invest those funds in further mortgage reductions.

CONCLUSION

Let me just conclude by saying that I undertook this job with the intention of finding a way to make the program more productive and to lay out a long-term vision and plan for achievement. And I am convinced that this program is the kind of investment the country needs to make. If we do not make adequate investments, we are merely going to pay these mortgage costs in perpetuity. And that has the effect of leaving a larger, not a smaller, long-term obligation on our children and grandchildren.

So I firmly believe that this program is like an investment. It is something we need to try and get out of as quickly as possible, so that our children and grandchildren will be relieved of that obligation and from the risk that these facilities pose.

Thank you very much for this opportunity, and I look forward to answering any questions you and the committee may have.

[The statement follows:]

PREPARED STATEMENT OF ALVIN L. ALM

Mr. Chairman and Members of the Subcommittee, I appreciate this opportunity to appear before you to discuss the Department of Energy's (DOE) Environmental Management (EM) program and its fiscal year 1998 budget request.

The fiscal year 1998 budget is a transitional one. We are shifting from a program that was projected to span many decades to one designed to accelerate cleanup and complete as much work as possible during the next ten years. We are implementing strong incentives for contractor performance and privatization with a focus on efficiency.

I have challenged the program managers to develop site Ten-Year Plans with a vision of accelerating cleanup schedules to reduce risk faster and substantially reduce long-term costs. Large sites such as Hanford, the Savannah River Site, Idaho National Engineering and Environmental Laboratory and Oak Ridge will take longer than ten years, some of them substantially longer, but with the implementation of the Ten-Year Plan we can make considerable progress. This vision will drive budget decisions, the sequencing of projects, and the management of the program.

Through the first four years of the Clinton Administration, we have succeeded in driving down many of the costs of our program while increasing productivity. The financial and management changes implemented by my predecessor have provided the springboard for the program to transition from cleanup to closure in this era of tight federal budget resources.

For the Defense portion of the fiscal year 1998 budget for the Environmental Management program, the Department is requesting $5,052 billion in new budget authority; $1 billion for the privatization initiative; and $643 million for the Defense Asset Acquisition Account. In the Non-defense portion of the budget, we are requesting $682 million in new budget authority under our Energy, Supply, Research and Development account; $2 million in the Energy Assets Acquisition account; and $249 million for the Uranium Enrichment D&D Fund. Although the fiscal year 1998 budget was developed prior to the Ten-Year Plan, it is being incorporated into the Plan. We are currently reviewing and analyzing draft Site Plans submitted to Headquarters on February 28, 1997, at a summary level. We are exploring opportunities for greater productivity, improved sequencing of work, and more efficient contracting mechanisms that will reduce the overall cost of the program. I have met with the senior field managers and expect the draft National Ten-Year Plan to be released for public review and comment soon.

In this testimony, I wish to focus on the following elements of the EM program: History; Accomplishments; Challenges; Privatization; and Promoting Efficiency through the Ten-Year Plan.

HISTORY

Fifty years of manufacturing nuclear weapons in support of World War II and the Cold War has left a legacy of environmental contamination. The U.S. Department of Energy is comparable to a major industrial complex and has been the largest government-owned industry in the U.S. The Department's facilities occupy a total area of about 2.1 million acres—equal in size to the states of Rhode Island and Delaware combined. This enormous infrastructure still exists, and is largely being maintained and remediated by the Environmental Management program, the largest environmental stewardship program in the world.

The EM program was born in the aftermath of the Cold War. The EM budget grew from an initial $1.3 billion in fiscal year 1989 to $6 billion by fiscal year 1993. At that time, the budget was projected to rise to more than $10 billion per year by the year 2000. In fiscal year 1996, the Department estimated the total cost for stabilizing and cleaning up its facilities to be approximately $220 billion over a 70-year period, depending on the expected future land use and project efficiency.

In June 1996, we set a new goal for cleaning up all but the largest contaminated sites within a decade. By establishing the vision of completing as much remediation as possible within a decade, we can hope to see closure of most sites, and show significant progress on the other, larger facilities. Through this strategy, we also believe that costs can be substantially reduced by appropriately sequencing projects, privatizing activities where appropriate, improving efficiency, initiating fixed-price contracts and reducing support costs.

ACCOMPLISHMENTS

The Ten-Year Plan vision is only possible through the financial and management improvements made in the program over the last four years. Through aggressive management, the program has achieved many milestones and made many improvements, including:

—Replacement of major management and operating contracts with incentive-based contracts at the Idaho National Engineering and Environmental Laboratory, Hanford, Savannah River, and Rocky Flats sites, and a decision to recompete the contracts at Oak Ridge and Mound.
—Development of completion strategies for Rocky Flats, Fernald, Mound, and Weldon Springs.
—Reductions in support costs at all sites.

—Award of major privatization contracts for cleanup of the Hanford high-level waste tanks and for advanced mixed waste treatment at the Idaho National Engineering and Environmental Laboratory.
—Complete construction and initiation of operation of two vitrification facilities to treat high level wastes—at West Valley, New York and at the Savannah River Site, the largest waste-treatment facility in the world.
—Completion of the cleanup and transfer of ownership to the private sector of a DOE facility under the Environmental Management program in Pinellas, Florida.
—Completion of all construction work at the Waste Isolation Pilot Plant at Carlsbad, New Mexico, the first geologic repository for disposal of transuranic wastes, to support operations in fiscal year 1998.

Overall, we have accelerated the program's activities in the face of fewer resources. This has been accomplished through better management practices, tailoring the workforce to meet specific needs, and innovation by DOE and its contractors.

CHALLENGES FACING THE ENVIRONMENTAL MANAGEMENT PROGRAM

The challenges facing the Environmental Management program are enormous, and include:
—The responsibility to manage extremely hazardous materials, for example, hundreds of large, underground high-level radioactive waste tanks and plutonium throughout some facilities.
—Extremely high fixed costs to maintain facilities safely and to prevent theft or diversion of nuclear weapons material.
—The need to comply with numerous, complex requirements under Federal and state environmental laws and regulations; compliance agreements and court orders; Defense Nuclear Facilities Safety Board Recommendations; Departmental orders for worker safety; and International Atomic Energy Agency nuclear nonproliferation safeguards requirements.

These unique challenges drive the strategies and *modus operandi* of the Environmental Management Program. The Department is meeting these challenges in a manner that involves States, Tribes and the public in an open decision-making process. To guide these efforts as we move toward completion of our work, I have established three strategic goals.

Goal I. Reduce the most serious risks first

Unstable plutonium, spent nuclear fuel and reactor targets, and high level waste tanks are the most serious risks at our sites. The fiscal year 1998 request addresses these urgent risks directly. The budget will also be used to reduce the immediate and long-term storage risks associated with the radioactive decay and potential for chemical reactions in high-level waste as well as reducing the health and safety threat from corroded nuclear materials at a number of our sites, including the Savannah River Site, Hanford, the Idaho National Engineering and Environmental Laboratory, and Rocky Flats.

Activities to reduce risks include:
—Producing up to 200 canisters of vitrified high-level waste at the Savannah River Site and continuing to store the waste in a secure, stable glass form.
—Removing spent fuel from the K-basin at Hanford.
—Completing characterization reports for 132 tanks at Hanford which will allow us to move forward with the remediation of the tanks.
—Reducing the high-level waste inventory at Hanford by evaporating 2.2 million gallons of liquid tank waste.
—Stabilizing 1,350 kilograms (out of 9,800 kilograms) of plutonium metal and oxides at Rocky Flats.
—Stabilizing 600 canisters of plutonium scrap that could pose a significant danger to workers at the Savannah River Site.
—Initiating construction of a new plutonium vault at the Savannah River Site for more secure and safe storage.
—Awarding a contract for a dry spent fuel facility at the Savannah River Site.
—Completing the calcination of the non-sodium bearing high level waste at the Idaho National Engineering and Environmental Laboratory.

Subject to authorization from the Environmental Protection Agency (EPA) and issuance of a RCRA Part B permit by the New Mexico Environment Department, we plan to open the Waste Isolation Pilot Plant (WIPP), a geologic repository for transuranic waste in Carlsbad, New Mexico. Assuming the required regulatory approvals are obtained, during fiscal year 1998, WIPP will receive shipments of transuranic waste from the Idaho National Engineering and Environmental Laboratory, the Los Alamos National Laboratory in New Mexico, and the Rocky Flats Environmental

Technology Site in Colorado. Shipments of transuranic waste to WIPP will start with two shipments per week, ramping up to five shipments each week by the end of fiscal year 1998. Three new privatization projects for the transportation and treatment of transuranic waste are expected to yield life-cycle cost savings of more than $250 million.

Goal II. Reduce mortgage and support costs to achieve cleanup of most sites within a decade

As landlord and steward for thousands of contaminated buildings, facilities, waste streams and land for the Department of Energy, the Environmental Management program has enormous costs in simply maintaining the complex in its present state. Reducing these huge fixed costs is key to both reducing risk and reducing the burden of these costs on future generations. We are, however, in an era of decreasing federal budget resources. Therefore, it is incumbent upon the Department to use existing funding for this monumental task as efficiently as possible. EM is taking a number of steps to allocate and utilize the taxpayers' dollars in a cost-effective and official manner.

One important initiative in making the EM program more efficient is reducing support costs. Currently support costs are roughly 45 per cent of the total costs at EM-managed DOE sites. EM has established a "stretch goal" to reduce support costs to 30 per cent of the total costs at EM sites by the year 2000, and to establish an overall efficiency target similar to that used in the private sector and invest those savings in risk reduction and "mortgage reduction."

The term "mortgage reduction" refers to the reduction of fixed costs for safely maintaining either a facility or a single project. An example of mortgage reduction is the Plutonium Uranium Extraction facility (PUREX) at Hanford. A former spent fuel and irradiated target reprocessing facility, PUREX was costing $35 million a year to maintain in a safe condition. When the facility is completely deactivated in May 1997, the surveillance and maintenance cost will fall to a little over $1 million per year.

We have used our experiences with PUREX and are applying them to the stabilization of the Hanford B-Plant to drive down mortgage costs and achieve results. The Hanford B-Plant was the second chemical separation canyon built at the Hanford site for the Manhattan Project during World War II. In 1995, annual maintenance costs for the B-Plant were $18.7 million. We intend to reduce those annual costs to $1 million or less by complete deactivation of the B-Plant. With a $35 million investment, the Hanford site expects to avoid $100 million in surveillance, maintenance and additional deactivation costs through 2002.

Mortgage reduction will occur at all of our sites by speeding up cleanup and more efficiently sequencing projects. For example, at Rocky Flats, the original life-cycle cost estimate for cleaning up the site was $37 billion over a 40 year period. The latest life-cycle cost estimate for concluding our work is $6 to $8 billion over a ten-year period. There are a number of reasons for the dramatic difference in the estimates, including changes in cleanup levels and scope of work. However, the acceleration of remediation and sequencing of projects results in much of the cost savings.

Accelerating cleanup at the numerous small sites around the country represents another way to reduce fixed costs. We intend to complete two-thirds of the small sites, such as the Oxnard Facility in California or the Inhalation Toxicology Research Institute and South Valley Superfund sites in New Mexico, by the year 2000. By expeditiously finishing the small sites, we can avoid significant outyear maintenance costs—and turn over more dollars and resources to larger, more complex sites.

Contract reform is also critical to getting more for our dollars. Within the Department of Energy, our program is at the forefront of contract reform. We believe that increasing competition, using results-oriented statements of work, improving financial accountability and management, increasing the use of fixed-price contracts, and using quantitative incentives to motivate the contractors to finish the job will help drive down program costs and ensure that we are paying for results, not for just "showing up." These kinds of reforms have been included in our new performance-based incentive contracts.

Another important source of cost-savings will be the use of new, efficient technologies for treating and cleaning up waste. The Environmental Management program is confronted with some of the most intractable technical problems in the world. Investing in solutions to these problems is crucial to reducing the long-term costs of the program. Unlike many hazardous chemical wastes, radioactive waste cannot simply be broken down into constituent elements; it requires isolation from the environment through treatment and disposal while it decays. To continue reduc-

ing costs and risks from these wastes, we must continue to invest in technology development. But new technologies can only be effective if they are deployed in the field. For this reason, EM created the Technology Deployment Initiative to promote the rapid deployment of innovative technologies currently in the development "pipeline," as an alternative to using older, less effective technologies. This initiative provides incentives for Department Operations Offices to use new technologies and innovative approaches to expedite site cleanup. The initiative will fund applications of "breakthrough" technologies that meet the needs of multiple sites. By reducing and minimizing the financial risk of "breakthrough" technologies at sites across the complex, cleanups can be accelerated, savings can be achieved, and regulatory approval can potentially be streamlined by the application of more efficient technologies.

One other potential for cost savings is through integrating our waste treatment and disposal capabilities across the complex. However, any such shifts or changes of responsibilities among sites for the treatment and disposal of wastes will be controversial. The Department cannot make these decisions by itself. We will continue our dialogue with the regulators, affected communities and other stakeholders on how to achieve an equitable and efficient use of capabilities within the complex.

Goal III. Meet regulatory and safety requirements

DOE will comply with its legal obligations under laws and regulations, compliance agreements and with its commitments to the Defense Nuclear Facilities Safety Board (DNFSB). As the program resources become more limited, innovation and close collaboration with regulators and stakeholders will be required to achieve the objective of meeting our compliance requirements in the most practical and efficient manner possible. We will work closely with regulators and the DNFSB to assure that we are able to reach agreement on how to achieve this objective.

The fiscal year 1998 budget funds progress toward the commitments we have made under compliance agreements and in response to recommendations of the DNFSB. Some of the key highlights in our submission include:

—Demolishing two buildings at the Fernald site.
—Stabilizing high-level hazardous residues at Rocky Flats.
—Completing all thorium shipments from the Fernald Site to the Nevada Test Site.
—Continuing to protect workers and the public by beginning work on upgrading ventilation systems at the Hanford Tank farm.
—Completing deactivation of B-Plant at Hanford.

Over the past four years, this Administration has done much to involve local communities directly in its Federal programs. DOE has established 12 Site Specific Advisory Boards (SSAB's) to advise it on the cleanup program and options for meeting its environmental and safety obligations. Where cooperation has been closest, this "openness" has reduced costs in some cases. For example, working closely with affected communities and regulators has resulted in life-cycle cost savings of $1 billion at Fernald and $400 million at East Fork Poplar Creek at Oak Ridge.

Ensuring the safety of our workers is a key goal for the Department and EM. Historically, the Environmental Management program's safety record is better than both the U.S. average and the average for the construction industry, but we still have to work harder at incorporating safety as a fundamental value in our daily work as the cleanup program gathers momentum. We have recently developed a policy of "do work safely or don't do it." Environmental Management continues to use management practices that incorporate safety and health protection as a basic component of all activities.

PRIVATIZATION

Privatization is key to our ability to accelerate the program and reduce the mortgage. Under the traditional system, whenever the Department needed a product or service, the Management and Operating (M&O) contractor at a site would build or procure the needed item or service. In effect, the Department would pay for a level of effort plus fee. The Department has been increasingly using fixed-price contracts and other incentive-based contracting methods to assure the Department is obtaining the most effective contracts. Under our privatization initiative, contracts are competed with the private sector for the product or service, and the government pays for the product or service when it is delivered and determined to meet specifications. The competitive process alone should sharply reduce the costs of these products or services to the Department. This approach should also substantially reduce the Department's need to build and maintain its own facilities to produce the needed product or service—thus reducing the Department's life cycle costs for the project as well as potentially reducing near-term outlays. The private sector instead

provides the funding and assumes many of the risks that were formerly borne by the Department.

The appropriations and authorization requested by the Department are necessary for the government to be able to enter into privatization contracts. The $1.0 billion budget authority for privatization in this year's request is intended to reflect the government's full commitment to the privatized projects. Appropriations in the early years for privatization projects will primarily cover the costs of the government's obligation should it choose to terminate the project prior to completion. Actual government outlays would not generally occur until the product or service is delivered under the contract as specified.

Some of the major privatization projects we are proposing in fiscal year 1998 include:

Tank Waste Remediation System (TWRS).—DOE has entered into two contracts for the treatment of high-level waste in Hanford tanks. In fiscal year 1997, Congress enacted $170 million for this activity, while the fiscal year 1998 budget requests $427 million. The Hanford TWRS project is proceeding consistent with a compliance agreement with the Washington Department of Ecology and the EPA.

Advanced Mixed Waste Treatment Project (AMWTP).—At the Idaho National Engineering and Environmental Laboratory, the Department has entered into a contract with British Nuclear Fuels Limited, Inc. to treat mixed waste. The total estimated cost of this project is $1.18 billion. Seventy million dollars have been obligated to the contract for fiscal year 1998. The cost savings are anticipated to be in the hundreds of millions of dollars over the cost-plus approach.

Spent Nuclear Fuel Transfer and Storage.—At the Savannah River Site, an open fixed-price competitive procurement will be used to select a contractor to prepare spent nuclear fuel for interim dry storage in a "road-ready" form for shipping to and disposal at a Nuclear Regulatory Commission licensed geologic repository. The contractor will also be responsible for the deactivation and clean-out of the required facilities.

Spent Nuclear Fuel Dry Storage.—At the Idaho National Engineering and Environmental Laboratory. The Department will be privatizing the construction of a spent nuclear fuel dry storage facility. This project will provide the capabilities to initiate interim dry modular storage of spent nuclear fuel assemblies at the site.

PROMOTING EFFICIENCY IN THE TEN-YEAR PLAN

Achievement of the Ten-Year Plan requires the same elements as those driving the fiscal year 1998 budget, namely, reducing urgent risks, reducing fixed costs, meeting regulatory commitments and working collaboratively with regulators and stakeholders. In addition, the Plan requires stable funding and substantial productivity improvements. We plan to achieve these productivity improvements through the following mechanisms:

—"Projectize" the entire EM program, i.e., shift from current open ended activities to focused efforts to achieve a specific end result. This is expected to significantly improve efficiency by eliminating work not directly needed to achieve completion of the project.

—Establish a "stretch goal" for EM sites to reduce support costs from 45 percent in 1997 to approximately 30 percent of the total by the year 2000, and to achieve efficiency improvements equal to those of the private sector.

—Compare EM waste management operations to similar private sector operations in order to streamline EM's waste management business practices and activities.

—Fund the Army Corps of Engineers to review all baselines to seek opportunities for cost reductions.

—Review integration opportunities designed to take advantage of inter-site efficiencies and avoid duplication among sites.

—Benchmark our costs against those of the private sector and other similar government programs.

—Shift from level of effort to fixed price and incentive contracts.

—Conduct site "work-outs" where we assemble federal and state regulators, site, headquarters, and local advisory board representatives with all the necessary information to break through each of the perceived stumbling blocks to progress and achieve further cost savings.

—Initiate a joint effort with EPA to look for administrative and regulatory changes to improve efficiency.

To implement the Ten-Year Plan, EM is establishing a new Integrated Planning, Accountability and Budgeting System (IPABS) to establish quantitative goals and metrics to track progress. The new integrated management system will use projects

as the basic measures of progress, assuring a focus on completion, rather than on perpetual activities. The new system will also eliminate current management and tracking systems, reviews, and reports that are duplicative.

STATUS OF HEADQUARTERS/ENVIRONMENTAL MANAGEMENT REDEPLOYMENT

The EM Redeployment Initiative is following several courses of action to achieve a reduced headquarters workforce that is appropriate for the changing mission and the new relationship we will have with the field offices. The initiative is consistent with the Department's Strategic Alignment Initiative (SAI), and the National Performance Review recommendations. First, EM has facilitated the transfer of individual EM Headquarters personnel to field offices, when vacancies exist, consistent with the need to enhance the federal workforce in the field where the work is being done. Second, EM has determined that certain national programs could be more effectively conducted in the field and has chosen to establish Centers of Excellence in certain technical areas as well. EM also is transferring headquarters employees to the field to help staff these centers. Finally, EM has aggressively pursued job opportunities for its headquarters staff at other Federal agencies such as the Environmental Protection Agency and the Nuclear Regulatory Commission to further reduce the headquarters workforce. If these efforts do not achieve the results desired, EM will initiate a reduction in force to bring Headquarters employment down to appropriate levels.

UNCOSTED BALANCES

Environmental Management's uncosted balances have declined steadily over the past few years. In fiscal year 1996 alone, EM reduced its uncosted balances by $535 million. In addition, we carried forward $150 million in uncosted balances from fiscal year 1996 to fiscal year 1997 as an offset to our budget authority. However, with the fiscal year 1998 budget request, EM is discontinuing the practice of offsetting new budget authority with uncosted carryover because excess uncosted balances are unlikely to be available. Uncosted balances at the end of fiscal year 1996 were $1.3 billion and were within reasonable levels recognized by the General Accounting Office. We will continue to monitor the uncosted balances to ensure that the balances remain as low as possible and are tied to essential work scope.

CONCLUSION

The Environmental Management program is setting an ambitious agenda for the future. The objective to clean up much of the former weapons complex within ten years will involve a strong commitment to cut unnecessary costs and improve efficiency. Even with such an effort, a substantial amount of work will still need to be undertaken beyond 2006 at larger DOE sites.

Failure to reduce the high fixed costs of this program through reducing the mortgages will result in much greater long-term costs to the taxpayer. Failure also will transfer both the risks and the costs of maintaining this deteriorating system to our children and grandchildren. Our Environmental Management program meets our obligation to provide sound technical and financial investments to resolve the environmental legacy of the Cold War. I look forward to working with you on these most important challenges.

APPENDIX A

STATUS OF SITES IN ENVIRONMENTAL MANAGEMENT PROGRAM

HANFORD

The Hanford Site, the nation's first full-sized plutonium production operation, encompasses 560 square miles in southeastern Washington. The site contains production reactors, processing plants, fuel fabrication buildings and laboratories, and many other associated facilities. Hanford is the site of some of our most urgent risks—including hundreds of large, underground high level radioactive waste tanks, some of which have leaked, and some of which may pose a danger of explosion unless properly managed. The current and future mission of the site is to manage the facilities and inventories of special nuclear materials and to remedy the environmental contamination caused by activities related to plutonium production. The Tri-Party Agreement signed between the DOE, the State of Washington, and the Environmental Protection Agency in 1989, and amended most recently in 1996, provides a schedule for site activities to achieve compliance for major waste streams managed at the site. Activities conducted under the Ten-Year Plan will dramatically ac-

celerate the pace of the cleanup as well as drive down the long-term costs at the site.

Accomplishments through fiscal year 1997

Completed stabilization of the PUREX reprocessing canyon to a low surveillance and maintenance state.

Completed decontamination of all areas in the C-Reactor complex except the fuel basin and Safe Storage and Enclosure Area.

Began treatment of low-level waste at the Effluent Treatment Facility.

Safely stored 55 million gallons of high level waste.

Accelerated the Hanford spent nuclear fuel stabilization project for a total project cost reduction of $300 million.

Completed construction of the Environmental Restoration Disposal Facility (ERDF) three months ahead of schedule and approximately $20 million below the original estimated cost.

Completed deactivation of the remaining 14 facilities at the N-Reactor in preparation for decommissioning.

Deployed a new robotic arm (Light Duty Utility Arm) to characterize Hanford Tank T–106, demonstrating capability for future characterization and retrieval operations.

Fiscal year 1998 major commitments

Remove 282,000 loose cubic yards of contaminated soil from the 100/300 Areas and dispose at ERDF.

Complete stabilization of the B-Plant Canyon Facility to a low surveillance and maintenance state with a cost savings of $100 million over the fiscal year 1995 baseline.

Evaporate 2.2 million gallons of liquid tank waste to reduce the need for additional tank space and stabilize 5 single-shell tanks.

Complete Hanford Tank Initiative preparations for "hot" deployment of technologies to remove hardened waste in tank bottoms.

Complete removal of spent nuclear fuel from the K-Basin.

Complete characterization reports on 132 of 177 tanks (75 percent completed).

Award four contracts to private sector vendors to "cold" demonstrate the ability to remove hardened waste at tank bottom, a problem common to tanks across the complex.

Complete dilution of 230,000 liters of highly enriched uranium solution for conversion to low enriched uranium oxide.

Continue stabilization of plutonium residues in various forms; repackage plutonium for safe storage.

Finalize regulatory disposition of abandoned septic systems.

Open the Hazardous Materials Management and Emergency Response Training (HAMMER) Center.

Privatization for fiscal year 1998

Tank Waste Remediation System (TWRS)—DOE is privatizing the treatment and vitrification of approximately 56 million gallons of high-level radioactive waste that is currently stored in 177 tanks at the Hanford site. The first phase of the two phase project was initiated with the award in 1996 of contracts to British Nuclear Fuels Limited, Inc. and Lockheed Martin Advanced Environmental Services. By increasing competition and the participation of vendors with diverse skills, the Department expects technology innovation that will lead to better solutions in hazardous waste management and cleanup problems and reduce costs and risks.

Progress expected by 2006

Urgent risks eliminated.

Tank waste immobilization underway.

Spent nuclear fuel removed from near the Columbia River to safer storage.

Complete interim safe storage of four reactors.

Cleanup along river near completion.

PUREX and B-Plant deactivated.

IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY

The Idaho National Engineering and Environmental Laboratory (INEEL) is a multi-purpose DOE laboratory that encompasses 890 square miles in southern Idaho. The site manages a large amount of spent nuclear fuel, transuranic, and high-level waste. The Laboratory's Environmental Management program is driven in large part by a cleanup agreement (the Federal Facility Agreement) established

under CERCLA and the 1995 Settlement Agreement between the State of Idaho, the Department of Energy (DOE) and the Department of the Navy. The Settlement Agreement accelerated waste treatment and disposal of spent nuclear fuel, transuranic waste, and high-level waste. The agreement requires the Department to begin transuranic waste shipments to WIPP by April 1999, and to remove all spent nuclear fuel from the state by fiscal year 2035. It allows the Navy to resume shipping spent fuel to Idaho to enable naval warships to perform their national security mission, and provides for essential DOE spent fuel shipments to occur over the next several years.

Other key elements of the settlement agreement include: continuing shipments of Naval spent nuclear fuel shipments to INEEL for examination and storage; allowing for DOE shipments of spent fuel for purposes such as nuclear nonproliferation and national security; accelerating waste treatment and cleanup in Idaho; establishing INEEL as the DOE complex-wide lead laboratory for spent fuel research and development; and provisions for improved (dry) storage of existing spent nuclear fuel at INEEL.

Accomplishments through fiscal year 1997

Began retrieval of TRU waste to prepare for early shipment to WIPP.

Completed construction and initiated operation of the Vapor Vacuum Extraction Treatment System which will accelerate groundwater cleanup.

Evaporated 330,000 gallons of high-level liquid waste, meeting a key settlement agreement milestone.

Restart new waste calcining facility.

Decommission Auxiliary Reactors II & III.

Completed capping of Landfills I, II, & III.

Awarded contract for Phase I privatization for the Advanced Mixed Waste Treatment Facility (AMWTF) to treat transuranic (TRU) and mixed low-level waste.

Completed incineration of mixed-low level waste backlog.

Signed the first Record of Decision (ROD) for Waste Area Group 2, which signifies the end of assessment and beginning of "on the ground" clean-up.

Fiscal year 1998 major commitments

Complete calcining of non-sodium-bearing high level liquid waste to meet a key Settlement Agreement milestone.

Subject to obtaining required regulatory approvals, initiate TRU shipments to WIPP.

Operate high-level liquid waste evaporator to reduce Tank Farm volume by 330,000 gallons.

Receive and store foreign research reactor fuel in support of the Administration's non-proliferation initiatives.

Complete removal of all remaining spent nuclear fuel from Idaho's CPP–603 (Chemical Processing Plant) fuel storage facility (approximately 250 spent fuel assemblies and cans containing pieces of assemblies), 1.13 metric tons of heavy metal).

Complete deactivation of the Advanced Reactor Measurement facility which will transfer degrading fuel elements to safer storage.

Privatization for fiscal year 1998

Low Activity Waste Treatment Facility.—A private contractor will design, obtain permits, construct and operate the Low Activity Waste Treatment Facility to treat and dispose of seven million gallons of liquid low activity mixed waste to meet RCRA land disposal restriction requirements.

Power Burst Facility Deactivation.—The project will take the Power Burst Facility, a shut down test reactor, from its shut down and defueled condition, to an end point ready for decontamination and decommissioning of the facility and surrounding areas.

Spent Nuclear Fuel Dry Storage.—This project will provide the capabilities to initiate interim dry modular storage of spent nuclear fuel assemblies at the site.

Progress expected by 2006

All DOE spent fuel will be transferred from wet storage to dry storage, awaiting shipment to a national spent fuel repository except for some naval fuel, which will remain in wet storage.

Fifty percent of the high-level liquid waste will be stabilized. Two of eleven high-level waste tanks will be closed.

Processing of stored transuranic waste will be ongoing with the treated product shipped to WIPP.

Environmental restoration projects will be complete at five of eight Waste Area Groups and significant work will be ongoing for transuranic waste pits and trenches (WAG 7).

NEVADA TEST SITE

The Nevada Test Site, located on 1,350 square miles in the Nevada desert, was the site for many of the country's above ground and underground nuclear tests. Since the 1992 weapons testing moratorium, the site has focused on remediating inactive sites and facilities contaminated during earlier testing activities. Low-level radioactive waste that originates from the site and from other DOE sites is disposed of on site. The contamination that resulted from historic nuclear testing activities poses a significant environmental remediation challenge for the site.

Accomplishments through fiscal year 1997

Signed the Federal Facility Agreement/Consent Order with State of Nevada.

Completed Double Tracks Plutonium soils remediation.

Completed Underground Test Area (UGTA) Regional Groundwater Flow and Transport Model and Regional Risk Assessment—a model indicates that tritium may already be offsite to the west of Pahute Mesa and above drinking water standards.

Completed Rulison Mud Pond Voluntary Corrective Action remediation.

Completed installation of shallow groundwater wells at Salmon Site to monitor contamination.

Removed 9 Underground Storage Tanks; completed closure of one RCRA site and characterized two more; remediated two sites on Tonapah Test Range.

Fiscal year 1998 major commitments

Seven assessments, including the Corrective Action Decision Document for Clean Slates I and the final Corrective Action Implementation Plan for Frenchman Flat.

Five Remedial Actions, including Closure Reports for five Points Landfill and Double Tracks Plutonium soils site.

Remediation of Clean Slate I, which are contaminated with plutonium.

Remediation of the Area 6 Decontamination Pond.

Remedial activities at two septic tank/sewage lagoons.

Progress by 2006

All cleanup sites characterized and significant progress made on accomplishing remediation.

Low-level waste shipped from currently approved generators will be disposed.

Characterization and shipment of all Nevada Test Site legacy TRU waste to the WIPP.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

The Rocky Flats Environmental Technology Site, located approximately 16 miles northwest of Denver, comprises approximately 11 square miles. Until 1989, the site's primary mission was to produce nuclear weapons components manufactured from uranium, plutonium and other metals. In 1992, the primary mission of the site changed from nuclear weapons production to cleanup and restoration. Rocky Flats' mission now focuses on waste and nuclear materials management, environmental remediation, and deactivation and conversion of facilities for disposition or alternative uses. The highest priority at Rocky Flats continues to be the protection of workers, the public and the environment from exposure to plutonium and other hazardous materials, and to safeguard plutonium.

Accomplishments through fiscal year 1997

Complete installation of the Plutonium Stabilization and Packaging Prototype in Building 707.

Completed draining plutonium solutions from all low-level tanks in one of our most urgent risk buildings (14 tanks total have been drained), and drained four higher concentration plutonium/uranium solution tanks.

Prepare TRU waste at Rocky Flats for shipment to WIPP.

Completed work on 8 of the top 20 Individual Hazardous Substance Sites, including 3,700 cubic yards of soil, 6 leaking concrete vaults and tanks, and shipped 2,500 gallons of solvent-contaminated oil for incineration.

Completed accelerated removal activities for the mound area and other release sites to reduce on-site contamination in Operable Unit 2 and the buffer zone.

Completed new sanitary landfill.

Designed and fabricated major upgrade of Plant Fire/Security System to meet National Fire Protection standards to ensure the safety of the workforce and the public.

Fiscal year 1998 major commitments

Complete plutonium solution stabilization in Building 771, with stabilization of approximately 3,000 liters of solution.

Stabilize 1,350 kilograms (out of 9,800 kilograms) of plutonium metal and oxides.

Operate Plutonium Stabilization and Packaging Prototype and full scale operation of the high-risk residue processing system.

Complete DNFSB 94–3 upgrades to Building 371 for the interim storage of plutonium.

Initiate shipments of TRU waste to WIPP.

Privatization for fiscal year 1998

Decontamination and Decommissioning of Buildings 779 and 886—The vendors will finance and provide systems for the complete decommissioning and dismantlement of the Buildings 779 and 886 clusters, which were used as a plutonium development laboratory and uranyl nitrate processing facility respectively.

Progress by 2006

The vast majority of site facilities will be demolished, leaving only facilities that are in use for the storage of special nuclear material, treatment of low-level waste and several office buildings.

Low-level, mixed low-level, and transuranic waste will be shipped offsite.

All highly enriched uranium will be removed from the site.

All plutonium stabilization activities will be completed.

Shipments of pits and weapons component parts offsite will be completed.

Deactivation of most major plutonium facilities will be complete.

Final environmental restoration activities will be initiated.

SAVANNAH RIVER SITE

The Savannah River Site, located on 310 square miles in south-central South Carolina, was established to produce special radioactive isotopes for nuclear weapons, particularly tritium and plutonium. With the end of the Cold War, the mission of the site changed from national defense to environmental management. Despite this shift, the Savannah River Site remains a major defense installation capable of processing and purifying tritium and plutonium. The site also plays an important role in support of the nation's nonproliferation policy by storing urgent relief foreign research reactor spent nuclear fuel.

Accomplishments through fiscal year 1997

Began operating the Defense Waste Processing Facility (DWPF) in March 1996 and to date, have produced over 100 canisters of vitrified waste.

Completed closure of first high-level waste tank at Savannah River. Initiated stabilization of spent nuclear fuel containing 7.3 metric tons of heavy metal.

Completed dissolving spent fuel targets containing 147 metric tons of heavy metal helping to place the Department's fuel in a safe configuration.

Began F and H Canyon retention basin groundwater treatment system operations to meet regulatory goals of groundwater cleanup to drinking water standards.

Completed construction of Low Level Radioactive Waste Disposal Facility (LLRWDF) closure cap at A and D Areas.

Installed 12 recirculation wells to remediate M Area southern sector to remove volatile organic compounds from the groundwater.

Completed soil capping at burial ground complex (76 acres) as an interim closure action to prevent the spread of hazardous constituents.

Completed early removal action at the R-Reactor seepage basin and the Ford Building waste unit for risk reduction of groundwater contamination.

Will reach a decision on utilization of the F and H Canyons.

Fiscal year 1998 major commitments

Produce 125–200 canisters of vitrified high level waste at DWPF.

Reduce the high level waste inventory through evaporation.

Stabilize 600 canisters of plutonium scrap that could pose a significant danger to workers.

Complete large-scale decontamination and decommissioning demonstrations started in fiscal year 1996, including the C-Reactor Interim Safety Storage demonstration.

Continue stabilizing plutonium residues in various forms; repackage plutonium for safe storage.

Receive and store foreign research reactor fuel in support of the Administration's non-proliferation initiatives.

Complete remediation of the D and F Area Pits.

Complete domestic water upgrades project to comply with South Carolina drinking water regulations.

Initiate remediation construction associated with the Old F Area Seepage Basin and F/H Retention Basins.

Complete remediation of sanitary landfill.

Privatization in fiscal year 1998

Spent Nuclear Fuel Transfer and Storage.—An open fixed-price competitive procurement will be used to select a contractor to prepare aluminum-clad spent nuclear fuel rods for interim dry storage in a "road-ready" form prior to shipping and disposal at a Nuclear Regulatory Commission licensed geologic repository. The contractor will also be responsible for the deactivation and clean-out of the required facilities.

Progress by 2006

Cleanup action for all high-risk environmental restoration sites will be completed, leaving only 20 medium risk waste sites to be remediated.

Approximately one-third of total high-level waste will be vitrified.

High-level waste from all 24 high-risk tanks will be removed and 75 percent of the highest risk waste tanks will be closed.

All of the nuclear materials stabilization and storage will be completed.

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

The Fernald Environmental Management Project (FEMP) site, located 17 miles northwest of Cincinnati, Ohio, covers approximately 1,050 acres. From 1953 to 1989, the site produced uranium metals and compounds for the nation's defense program. The FEMP was placed on the National Priorities List in November, 1989. In 1991, operations were halted permanently. The site's main mission is to remediate the site and any off-site contamination. All interim removal actions have been completed to address immediate site risks. Remediation of all the operable units will be initiated by the end of fiscal year 1997.

Accomplishments through fiscal year 1997

Initiate Advanced Waste Water Treatment Expansion to process water from the extraction wells, and initiate construction of the regeneration system that includes the ion exchange.

Process and dispose of 400,000 cubic feet of waste.

Initiate soil remediation in Areas I and II and manage soil stockpiles.

Use a new solvent extraction technology (Terra-Kleen™) to completely eliminate tri-mixed waste stream.

Fiscal year 1998 major commitments

Process and dispose of 190,000 cubic feet of low-level waste.

Begin work on Plant 9 and the Thorium package, and complete work on the Boiler Plant Complex for D&D.

Complete stabilization of remaining Thorium over packing material at Fernald.

Begin construction of the volatile organic compound treatment system; begin construction of pipeline and complete the Advanced Waste Water Treatment expansion; continue construction of the regeneration system, and initiate construction of the Sewer Treatment Plant in order to provide waste water treatment systems and well field activities in the South Field Area.

Privatization in fiscal year 1998

Waste Pits Remedial Action.—The Department will privatize the design and construction of a contractor-owned and operated facility for the excavation, processing, treatment, and load out for off-site shipment and disposal of approximately 700,000 tons of low-level radioactive waste from 8 waste pits.

Silo 3 Waste Treatment.—This initiative will fund a contractor to design, permit, finance, construct and operate treatment facilities. The contractor will process, package, ship and dispose of approximately 5,100 cubic yards of powdery, thorium-bearing residues from Silo 3.

Progress by 2006

Complete majority of cleanup actions.

Follow-on work will only require pump-and-treat of groundwater, and monitoring in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act.

WASTE ISOLATION PILOT PLANT

The Waste Isolation Pilot Plant (WIPP) is a geologic repository for transuranic wastes from nuclear weapons production activities. The site is located 26 miles from Carlsbad, New Mexico, and occupies 10,240 acres. Subject to receiving required regulatory authorization from the Environmental Protection Agency and the New Mexico Environment Department, disposal operations at WIPP will begin in fiscal year 1998. Opening of the WIPP is critical to the success of the EM Ten-Year Plan as well as to meeting the commitments of the Idaho Settlement Agreement (i.e., requirement to begin shipping transuranic waste from Idaho by April 1999, and remove all transuranic waste from Idaho by 2035). Shipments of transuranic waste to WIPP will start at a rate of two per week, ramping up to five shipments each week by the end of fiscal year 1998.

Accomplishments through fiscal year 1997

Submitted WIPP compliance certification application to EPA.

Continue actinide source term and gas generation tests and analysis for performance confirmation.

Issue final Environmental Impact Statement for the disposal stage.

Fiscal year 1998 major commitments

Seek EPA certification of WIPP's compliance with disposal standards.

Obtain RCRA permit to operate WIPP

Secretarial decision on whether to operate WIPP as a disposal facility.

Begin TRU waste disposal operations (two shipments per week to start ramping up to five shipments per week by the end of fiscal year 1998).

Fiscal year 1998 privatization

Contact-Handled TRU Waste Transportation.—The fixed-price contract will be for a private vendor to provide for transportation of TRU waste from DOE generator/storage sites across the country to WIPP in Nuclear Regulatory Commission-certified containers.

Progress by 2006

Continued active operation of WIPP.

OAK RIDGE RESERVATION

The Oak Ridge Reservation consists of several major sites in the state of Tennessee, and several off-site locations. The three main sites include the Y–12 site, which supports manufacturing and development engineering associated with the production and fabrication of nuclear weapons components; the Oak Ridge National Laboratory (ORNL), whose mission is to perform leading-edge nonweapon research and development; and the K–25 site, which was built to supply enriched uranium for nuclear weapons production. During its 50 years of operation, portions of the Oak Ridge Reservation have become contaminated with radioactive and hazardous materials. Remediation of the sites is now a key mission.

Accomplishments through fiscal year 1997

Treated 1,200 cubic meters of mixed low-level waste.

Perform a "hot" demonstration of a mobile, modular system for removal of cesium from the Melton Valley Storage Tank waste, which is also applicable to the high-level waste at the Savannah River Site, Hanford, and Idaho National Engineering and Environmental Laboratory.

Continue decommissioning Molten Salt Reactor Experiment to comply with Defense Nuclear Facilities Safety Boards recommendation 94–1 (requires stabilization of radioactive and hazardous materials as a first priority).

Use a new electro-osmosis process (LASAGNA™) to collect contaminants from the soil at the Paducah Gaseous Diffusion Plant in Kentucky.

Fiscal year 1998 major commitments

Treat approximately 1,000 cubic meters of mixed low-level waste at the TSCA incinerator.

Dispose of 678 cubic meters of low-level waste.

Complete construction of the on-site disposal cell at Weldon Springs and placement of waste.

Continue remediation activities at Clinch River, Poplar Creek and Watts Bar Reservoir.

Complete decommissioning of 35 facilities.

Complete removal of liquid and sludge from the Old Hydrofracture Facility Tanks.

Privatization for fiscal year 1998

TRU Waste Treatment.—DOE will transfer remote-handled TRU sludge from 13 tanks at ORNL to eight storage tanks that contain the majority of the sludge. A private company will be contracted to remove and treat transuranic sludge from the tanks, and the Oak Ridge solid TRU waste to meet WIPP waste acceptance criteria or Nevada Test Site waste acceptance criteria.

Environmental Management Waste Management Facility.—The Department will purchase waste disposal services from a private vendor for the site's low-level, hazardous, mixed and Toxic Substances Control Act wastes.

Progress by 2006

Lease all leasable K–25 facilities; decommission the unleasable facilities.

Complete off-site remedial action.

Complete gunite tanks remedial action.

Complete nuclear materials and facility stabilization project.

APPENDIX B

ANALYSIS OF THE OFFICE OF ENVIRONMENTAL MANAGEMENT BUDGET BY PROGRAM AREA

The Environmental Management program is organized into four major program offices: Waste Management, Environmental Restoration, Nuclear Material and Facility Stabilization, and Science and Technology Development, to carry out the core missions of the Environmental Management program, with assistance from other Departmental offices. Our fiscal year 1998 program commitments are provided in Appendix A.

The Department is requesting $7,246,635,000 in new budget authority for fiscal year 1998. This includes $5,052 billion in new budget authority under the Defense account. We are requesting $682 million in new budget authority under our Energy, Supply, Research and Development account; $1 billion for the privatization initiative; $643 million for the Defense Asset Acquisition Account; $2 million in the Energy Assets Acquisition account; and $249 million for the Uranium Enrichment D&D Fund.

This budget falls under six separate accounts: the Energy Supply Research and Development account (roughly 9 percent of the budget); the Defense Environment Restoration and Waste Management portion of the Atomic Energy Defense Activities account (roughly 66 percent of the budget); and the Uranium Enrichment Decontamination and Decommissioning (D&D) Fund account (roughly 3 percent of the budget). Beginning in fiscal year 1998, funding is being requested in three new appropriations accounts: the Privatization account (roughly 13 percent of the budget); the National Defense Assets Acquisition account (roughly 8 percent of the budget); the Energy Assets Acquisition account (roughly 1 percent of the budget).

WASTE MANAGEMENT

Budget Request: $2,068,798,000 (27 percent of the total Environmental Management budget)

In fiscal year 1998, the Waste Management Program will continue its efforts to manage safely and efficiently the storage, treatment, and disposal of the Department's wastes. Waste streams managed by the Waste Management Program include high-level, low-level, mixed low-level, transuranic, and hazardous wastes. With a focus on mission completion as defined by the Ten-Year Plan, the Waste Management Program will direct its efforts toward moving more waste out of storage and into treatment and disposal. Process improvements, including privatization and reengineering, will contribute significantly to achieving the program's Ten-Year Vision.

In fiscal year 1998 more high-level waste and mixed low-level waste will be treated than in fiscal year 1997, while the budget for both waste streams will be lowered. At the Savannah River Site, the production of canisters of vitrified high-level waste will increase as the Defense Waste Processing Facility approaches steady-state operations. At West Valley, the Phase I Vitrification campaign will be completed. The award of a privatization contract through the Oak Ridge Operations Office will enhance the Department's access to commercial treatment of mixed low-level waste.

The Consolidated Incineration Facility at the Savannah River Site will also commence operations, increasing the Department's capacity for the treatment of mixed low-level waste. More low-level waste will be disposed in 1998 than in 1997, and at a lower cost.

A key element of the program's success for fiscal year 1998 will be the start-up of disposal operations at the Waste Isolation Pilot Plant (WIPP) is required regulatory approval is obtained. In such case, WIPP will receive shipments of transuranic waste from the Idaho National Engineering and Environmental Laboratory, the Los Alamos National Laboratory in New Mexico, and the Rocky Flats Environmental Technology Site in Colorado. Shipments of transuranic waste to WIPP will start with two per week, increasing to five shipments each week by the end of fiscal year 1998. Three new privatization projects for the transportation and treatment of transuranic waste will yield life-cycle cost savings of more than $250 million.

Stabilization of the high-level waste in the Richland underground tanks will continue to be a high priority. More than two million gallons of liquid tank waste at Richland will be evaporated and five of the single-shell tanks will be stabilized. The calcining of non-sodium-bearing high-level liquid waste at Idaho will be completed.

A pilot program for the re-engineering of Waste Management's treatment, storage, and disposal system will be initiated in fiscal year 1998. Approximately $16 million will be transferred to other DOE programs that generate waste for the management of their newly generated waste. By returning managerial and financial responsibility to the mission program, waste generation and overall program cost will be reduced. The five pilot programs will include Fermi, Argonne National Laboratory-West, the Stanford Linear Accelerator Center, the Kansas City Plant, and tritium operations at the Savannah River Site.

ENVIRONMENTAL RESTORATION

Budget Request: $2,450,986,000 (32 percent of the total Environmental Management budget)

The Office of Environmental Restoration, with the largest percentage of the fiscal year 1998 budget request, is responsible for the assessment and remediation of facilities and land formerly used for nuclear weapons production, as well as other inactive sites. These sites include contaminated buildings, and abandoned or inactive waste disposal sites. Environmental Restoration (ER) is sometimes referred to as the Environmental Management "cleanup program".

The ER program has made considerable progress in continuing to increase the amount of funds that are spent on cleanup activities and by focusing these funds on achieving near term results. Cleanup progress has been realized by completing all ER cleanup responsibilities at various geographic sites across the nation and by continuing to make progress at individual release sites (discrete areas of contamination within a geographical site) and facilities (contaminated structures). By the end of fiscal year 1998, approximately 4,400 of 10,000 release sites and facilities will be completed (approximately 44 percent).

The Environmental Restoration program is contributing to the overall EM effort of moving toward completion and reducing the long-term mortgage costs in a number of ways. Besides the ongoing large-scale remediation work at our larger sites (e.g., Hanford or the Savannah River Site), Environmental Restoration has had marked success with our "Exit Strategy" for small sites that includes the Uranium Mill Tailings Remedial Act (UMTRA) program and Formerly Utilized Sites Remedial Action Programs (FUSRAP). By the end of fiscal year 1998, EM will complete cleanup of 45 small sites, leaving only fifty small sites. More specifically, out of the 46 total FUSRAP sites, 23 sites will have been "cleaned up" as of the end of fiscal year 1998. By fiscal year 2000, we expect to clean up 5 more sites. Our goal is to complete the FUSRAP cleanup by 2002. Accelerating the pace of cleanup at these sites and reducing the costs of maintaining them over time will free up dollars to be reinvested in the longer-term issues.

The cleanup program is on track to continue its efforts in the most efficient, safe, and effective manner. Performance measures are in place to accurately gauge our progress. We believe that our results orientation will ensure that our cleanup milestones are met in compliance with negotiated agreements and with the support of the public and stakeholders.

NUCLEAR MATERIAL AND FACILITY STABILIZATION

Budget Request: $1,374,615,000 (18 percent of the total Environmental Management budget)

The mission of the Nuclear Material and Facility Stabilization program is to reduce the high-risk conditions associated with unstable nuclear and chemical mate-

rials stored at former nuclear weapons production facilities and to reduce the surveillance and maintenance costs associated with surplus buildings waiting for decontamination or final disposition. Protection of workers and the environment from exposure and contamination, the stabilization of hazardous nuclear and chemical materials, deactivation of facilities to attain the lowest surveillance and maintenance costs, and transfer of facilities to the Office of Environmental Restoration for decontamination and decommissioning, are among the myriad activities. This program deals with some of the Department's highest risks: plutonium and spent nuclear fuel.

This program is working to address urgent risks to protect the health and safety of the Department's workers and the public, through implementation of the material stabilization and spent fuel management programs. The efforts to stabilize nuclear materials include the following activities in fiscal year 1998: dilution of 230,000 liters of highly enriched uranium solution for conversion to low enriched uranium oxide at Savannah River, stabilization of 240 containers of plutonium scrap and 380 containers of plutonium-containing sand, slag and crucible material at the Savannah River Site, and stabilization of 253 kilograms of plutonium solutions and 1,678 kilograms of plutonium in residues at Hanford. Although they are funded under the Environmental Restoration Program, this program is also responsible for managing stabilization activities at the Rocky Flats site which in fiscal year 1998 will include: draining and solidifying 3,000 liters of plutonium solution, and the commencement of full operation of the stabilization and packaging system to prepare plutonium metal and oxides at Rocky Flats for long-term storage.

The efforts to stabilize spent nuclear fuel include the following activities which the program expects to undertake in fiscal year 1998: removal of approximately 250 spent fuel assemblies and cans containing pieces of assemblies from Idaho's CPP–603 fuel storage facility to safe storage; and begin removal of spent nuclear fuel from the K-Basins near the Columbia River at Hanford and placement in Hanford's dry fuel canister Storage Facility. In fiscal year 1998, the Department will receive foreign research reactor spent nuclear fuel in support of the United States' nonproliferation initiatives. There currently are an estimated 22,000 spent nuclear fuel elements in 41 countries. Over a period of 13 years, more than one hundred shipments of this fuel will be received at the Savannah River Site and the Idaho National Engineering and Environmental Laboratory. In fiscal year 1998, approximately 30 casks (about 1,000 elements) of fuel will be received at the Savannah River Site and five casks will be received at Idaho.

Also, the Department has begun developing alternative technologies for the storage and the treatment of spent nuclear fuel to a form suitable for future geological disposal. This program, which is focused on methods to achieve direct disposal in a geologic repository with minimum pretreatment, will continue in fiscal year 1998. For example, at the Savannah River Site, this program will include experimental projects to establish the feasibility of these alternative approaches for aluminum-uranium alloy fuel, as well as development, in consultation with the Nuclear Regulatory Commission, of the requirements for ultimate disposition of this material in a geologic repository. Programs to prepare spent fuel for ultimate disposition are also underway for the spent fuel at the Hanford Site and the Idaho National Engineering and Environmental Laboratory.

The program also focuses on "reducing the mortgage" by completing deactivation projects and related activities. For example, in fiscal year 1998, deactivation activities at the B-Plant at Hanford will be completed three years ahead of schedule, reducing surveillance and maintenance requirements for the facility from approximately $20 million per year to an estimated $3 million per year. This will save nearly $100 million over the life of the facility. Further, construction will begin on the Actinide Packaging and Storage Facility at the Savannah River Site to consolidate nuclear materials currently contained in a number of buildings across the site. When completed, this facility will not only safely store and secure the stabilized materials, but also will facilitate the deactivation of numerous inactive buildings including the canyon processing facilities.

For the past three years, a major component of the deactivation program has been the Fast Flux Test Facility (FFTF) at Hanford. Recently, however, the Department has decided to place FFTF in a "hot standby" status pending a scheduled December 1998 determination on the possible role of this reactor as a new tritium supply source in support of the Nation's nuclear weapons stockpile. The Department will submit a fiscal year 1998 budget amendment to reflect this consideration of FFTF for a tritium supply mission.

In recent years, the utilization of the F- and H-processing canyons at the Savannah River Site has been under review. The Department conducted a study in 1995 to determine the most cost-effective utilization of these aging and costly facilities for

stabilization and potential material disposition and other future missions. The study recommended consolidation to the F-Canyon facilities, reserving H-Canyon for cold standby. This recommendation was not implemented because of concerns that a decision to consolidate was premature due to limited progress complex-wide on stabilization activities and the uncertainty of other mission needs for these facilities. Because a number of changes have occurred since this evaluation and significant progress has been made in stabilization activities and future mission decisions, the Department has embarked on a new evaluation of operational strategies for these facilities. The results of this evaluation will be used as the basis for the multi-year plan for these facilities required to be submitted to Congress by the fiscal year 1997 Defense Authorization Act.

SCIENCE AND TECHNOLOGY

Budget Request: $307,881,000 (4 percent of the total Environmental Management budget)

The Office of Science and Technology conducts an aggressive national program of basic and applied research, development, demonstration, testing, and evaluation for environmental cleanup, waste management and related missions. These activities are focused on EM's major environmental problem areas: mixed waste, radioactive tank waste, subsurface contamination, and decontamination and decommissioning. Our strategy is to invest in technology development to develop new or improved technologies in these areas to reduce risks to workers, the public, and the environment, reduce cleanup costs, and provide cleanup solutions that do not currently exist. Recognizing ongoing budgetary restraints, developing new, effective technologies presents the best opportunity to ensure a reduction of risks and costs. For instance, there are 3 million cubic meters of radioactive and hazardous buried waste in the DOE complex. The landfill caps have breached and pose a potential threat to people and the environment. In fiscal year 1998, we expect to complete full-scale demonstration of a set of advanced landfill capping methods and monitoring techniques to mitigate this problem. New technology is critical to achieving the goals of the Ten Year Plan—by accelerating cleanup schedule and thereby reducing cleanup costs, the savings from which can be applied to other cleanup projects. We have recently performed a study of the potential cost savings from 37 of our innovative technologies and called upon the Army Corps of Engineers to peer review our cost savings analyses. Their initial review of these 37 technologies indicates that there is sufficient documentation to support potential cost savings in the order of magnitude of $20 billion. We are continuing, with the help of the Corps' expertise, to conduct a more detailed and expanded cost analysis.

But these technologies must be deployed widespread to fully realize their cost savings potential. To facilitate the use of innovative technology, our fiscal year 1998 budget request includes $50 million for a new Technology Deployment Initiative that will serve as a catalyst for the DOE Operations Offices to use new technologies and innovative approaches to accelerate site cleanup. The initiative will completely fund the first application of a technology meeting a multi-site performance specification. This will allow the problem(s) to be eliminated ahead of schedule and provide user-validated performance data and regulatory acceptance for the technology. Cost savings will be realized through this initiative by accelerating the cleanup schedule, applying more efficient technologies, and reducing the programmatic risk of using alternative technologies at other sites through the DOE complex.

In 1996, the Department established a $50 million Environmental Management Science Program in partnership between EM's Office of Science and Technology and the Department's Office of Energy Research to bridge the gap between broad fundamental research that has wide-ranging applicability with applied technology development. The fiscal year 1998 budget request includes $42 million to continue the Environmental Management's Science Program, which is aimed at DOE's most intractable environmental problems. The research results are focused on science areas addressing high-level radioactive waste tanks, spent nuclear fuel, mixed radioactive and hazardous waste, waste disposal forms, and risk, quantitative methodological, human and environmental health analyses.

The Office of Environmental Management's risk activities are also conducted from the Office of Science and Technology. These activities support decision making by developing policy and guidance for implementing credible and dependable risk assessment, management and communication processes to assure that EM funds activities to address DOE's most threatening and widespread environmental problems.

PRIVATIZATION INITIATIVE

Budget Request: $1,006,000,000 (13 percent of the total Environmental Management budget)

Privatization is a critical component in the Environmental Management program's strategy to reduce costs and "mortgages." Under the traditional system, whenever the Department needed a product or service, the Management and Operating (M&O) contractor at a site would build or procure the needed item or service. In effect, the Department would pay for a level of effort plus fee. The Department has been increasingly using fixed-price contracts and other incentive-based contracting methods to assure the Department is obtaining the most effective contracts. Under privatization, contracts are competed with the private sector for the product or service, and the government pays for the product or service when it is delivered and determined to meet specifications. The competitive process alone should sharply reduce the costs of these products or services to the Department. This approach should also substantially reduce the Department's need to build and maintain its own facilities to produce the needed product or service thus reducing the Department's life cycle costs for the project as well as potentially reducing near-term outlays. The private sector instead provides the funding and assumes many of the risks that were formerly borne by the Department. Appropriations in the early years for privatization projects will primarily cover the costs of termination in case the government should choose to terminate the project. Actual government outlays would not generally occur until the product or service is delivered and is determined to meet the previously agreed-upon specifications.

Privatization initiatives currently underway

In Washington—Hanford Tank Waste Remediation

In Idaho—EM recently announced the award of a $1.1 billion contract to British Nuclear Fuels Limited to treat mixed waste at the Idaho National Engineering and Environmental Laboratory and treat waste from across the complex. The cost savings and cost avoidances anticipated from this privatization project will be several hundred million dollars over the cost-plus approach that was planned under the M&O contract.

Additional privatization initiatives scheduled for contract award in fiscal year 1997 include the Oak Ridge Broad Spectrum Low Level Mixed Waste project, and the Transuranic Waste.

Privatization initiatives to be begin in fiscal year 1998

In New Mexico—Privatization of contact-handled transuranic waste transportation for the Waste Isolation Pilot Plant. The contract will be for a private vendor to provide transportation of transuranic waste from generator sites to the Waste Isolation Pilot Plant disposal facility using contractor-financed, -owned and -operated tractor trailers and nuclear packaging equipment. Initially, waste will be shipped from just a few sites. However, eventually waste will be shipped from all 25 sites that currently have TRU waste. A standard fee will be paid based on quantity shipped and mileage. This is a recompetition of M&O subcontractor services.

In Idaho—Low activity waste treatment project for the Idaho National Engineering and Environmental Laboratory. A private contractor will be used to finance, design, construct and operate a facility to treat seven million gallons of low-level waste from the Idaho Chemical Processing Plant, the Advanced Test Reactor, and other sources. The contractor will be paid for treated waste meeting contract specifications on a dollars per unit cost.

In Idaho—Power Burst Facility deactivation for the Idaho National Engineering and Environmental Laboratory. The Department will hire a private contractor to plan, design, and execute the deactivation of the Power Burst Facility (a shut down reactor). Payment is projected at the completion of deactivation and acceptance by the federal government in fiscal year 2000.

In Idaho—Spent nuclear fuel dry storage at the Idaho National Engineering and Environmental Laboratory. The Department will privatize capital construction of a dry storage facility capable of transferring and storing spent fuel rods. The construction and operation service will be provided through an open fixed-price competition, with the price including contractor design, licensing and fabrication.

In Tennessee—Environmental management and waste management disposal at Oak Ridge. The Department will purchase waste disposal services from a private vendor for low-level, hazardous, Toxic Substance Control Act-defined, and mixed wastes generated at Oak Ridge. The contractor would be awarded a fixed unit price contract for waste disposal services including permitting, construction, and operation of the facility.

In Tennessee—Transuranic solid waste treatment at Oak Ridge. A private contractor will design, permit, finance, and construct a transuranic (TRU) solid waste treatment facility at Oak Ridge to treat contact-handled and remote-handled solid TRU waste for shipment to the Waste Isolation Pilot Plant in New Mexico. The project will be procured through an open fixed-price competitive bid. DOE will compensate the contractor on a per unit basis for waste treated to performance specifications.

In Ohio—Waste pits remedial action at the Fernald Site. The Department will privatize design and construction of a contractor owned and operated facility for the excavation, processing, treatment, and load-out of about 700,000 tons of waste for disposal at a permitted commercial disposal facility. The contractor will be paid on a unit rate for the quantity of processed waste during the operational phase.

In Ohio—Silo 3 residue waste treatment at the Fernald Site. This initiative will fund a contractor to design, permit, finance, construction and operation of necessary treatment facilities. The contractor will process, package, ship, and dispose of residues from Silo 3, Fernald Operable Unit #4 remediation. The contractor will be required to reprocess off-specification product at their own expense.

In Colorado—Decommissioning of Buildings 779 and 886 at Rocky Flats. The vendors will finance and provide systems for the complete decommissioning and dismantlement of the Buildings 779 and 886 clusters at Rocky Flats. Payment will be made upon the decommissioning and packaging of equipment, and upon complete dismantlement of the building clusters.

In South Carolina—Spent nuclear fuel transfer and storage at the Savannah River Site. This initiative is for an open fixed-price competitive procurement for the preparation and interim dry storage of aluminum-based spent nuclear fuel prior to shipment and disposal at a Nuclear Regulatory Commission-licensed geologic repository. Financing, design, permitting, construction and operation would be the responsibility of the contractor. After shipment of the spent fuel for disposal, the contractor would be responsible for the deactivation and clean-out of the facility. The contractor would be paid when spent fuel rods are prepared and stored in dry storage on a fixed-unit price determined at the time of contract award.

FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

Senator DOMENICI. Thank you very much, Mr. Alm. Your entire statement will be made a part of the record.

Senator Reid, would you like to proceed first.

Senator REID. Thank you, Mr. Chairman.

Mr. Alm, the President requested $107 million for the Formerly Utilized Sites Remedial Action Program; is that true?

Mr. ALM. The budget request, as I recall, is $182 million.

Senator REID. I have $107 million. Anyway, my direction is, there is some work that one of the members of the committee asked me to ask you some questions about—sites in New Jersey, including the Wayne interim storage site. Are you familiar with that?

Mr. ALM. Yes, sir; I am.

Senator REID. It is my understanding that the Department has committed to completing the cleanup program by the year 2002; is that true?

Mr. ALM. That would be our goal, to complete the entire FUSRAP Program by 2002.

Senator REID. But how can that be done if you have not completed a record of decision for that site yet?

Mr. ALM. Well, we are having discussions with the Environmental Protection Agency right now on whether a record of decision is necessary. What we are basically doing is removing the pile of material. We will be talking and continuing our discussions with EPA. It is possible we may do a record of decision.

Senator REID. But you are saying it may not be necessary?

Mr. ALM. That is correct.

Senator REID. OK. I have a number of other questions that I will submit to you in writing. If you would respond to me and to the subcommittee as soon you could, that would be appreciated.

Mr. ALM. I would be delighted to.

PRIVATIZATION OVERSIGHT

Senator REID. In my opening statement, you heard me mention that this work is being done in the private sector, what are we doing as far as carrying out our work site responsibilities to make sure it is being carried out properly?

Mr. ALM. The policies for oversight are under development right now. As you know, the two major projects, the tank waste remediation and the advanced mixed waste treatment system, are not in the stage of actual production, so we have a little bit of time.

Let me tell you what I think are the main elements of our responsibility. First of all, at the beginning of a project, we need to have all of the technical capabilities to draw up a firm technical description of what we are buying. Second of all, one of the most important parts—in fact, the most important part of any project—is the project manager. And we intend to pay a great deal of attention to the project manager as proposed by the contractors, and really to have some say in that decision.

In my experience in the private sector, good project managers almost always make good projects. And, unfortunately, vice-versa.

Senator REID. Well, what you are saying is, when these contracts are negotiated, you will have part of that contract being that the Department has some say in who the project manager will be?

Mr. ALM. Absolutely. And then the next step is to continually monitor the project. What we really need to do is to learn a system where we monitor but do not meddle. The reason I say do not meddle, if we get involved with all of the details, we can actually become liable for the costs. And one of the main advantages of privatization is that the private sector takes on that obligation.

I do think that we ought to have the right, if we feel a project is missing schedule or has any kind of other inherent problems, to work with the contractor in getting a new contract project manager who can perform the functions.

BEATTY, NV, GROUND WATER ISSUE

Senator REID. I am concerned about the speculation—and at this stage, that is all it is—of infiltration of tritium into the ground water around a town in Nevada called Beatty. My question is, Have we conducted sufficient ground water tests or have we conducted any? And what reports can we expect regarding the condition of the ground water in the region around the Nevada test site?

Mr. ALM. Well my understanding is that there is currently modeling being done of ground water contamination at the NTS. And that modeling, at least preliminarily, indicates that there may be levels of tritium in the ground water. I think we need to, first of all, calibrate the model, and then begin to think about what kind of a potential testing program we might want to undertake.

Senator REID. I guess the good news is tritium dissolves. It has a short life span. Is that not true?

Mr. ALM. Well, it has about 12 years. That is correct.

Senator REID. Well, compared to some of the stuff in the ground up there, that is real short.

Mr. ALM. I understand that.

TECHNOLOGY DEPLOYMENT INITIATIVE

Senator REID. Could you describe the goals of the technology deployment initiative and the impact on this budget?

Mr. ALM. The Technology Deployment Program is a $50 million program, where we would invite our field offices, working with vendors and with nongovernmental groups, et cetera, to come in with innovative technology proposals. And the $50 million would be used to overcome the normal barriers to the installation of new technology.

Senator, one of the most vexing problems has been the fact that there is so little innovative technology for use in the field, both in DOE and in the country in general. And this deployment fund is really designed for us to be able to harvest the large amount of good research and development that has been undertaken and get this technology deployed in the field. And the idea is not only to be deployed at one site, but we are looking for possibilities that could be deployed in many sites. And some of these technologies would actually provide an opportunity for U.S. exports.

So we are excited about this program. We will be getting proposals in pretty soon. And assuming that they are good proposals, we would continue the program. If not, it would have been an experiment. But I am fairly optimistic.

OFFICE OF ENVIRONMENTAL MANAGEMENT STAFF

Senator REID. Tell me about your staff. What kind of staff do you have to carry out your duties?

Mr. ALM. Well, I have about 600 headquarters staff. And then we have a field staff which is over a couple of thousand—not all devoted to the environmental management program. The type of staff—they are very heavily technical people—a lot of engineers, some nuclear engineers from the defense program base, but also other disciplines.

Senator REID. In your written responses to the questions that I have submitted, would you, in that response, outline the people you have on staff. I do not care about names, but numbers, and also where they are located—the field staff people, where they are located.

Mr. ALM. I would be glad to do that.

Senator REID. Thank you a lot, Mr. Chairman.

Senator DOMENICI. Thank you, Senator Reid.

Senator Allard.

Senator ALLARD. Thank you, Mr. Chairman.

Senator DOMENICI. Senator Craig, do you mind if Senator Allard proceeds?

Senator CRAIG. No, no, they were here first.

Senator ALLARD. Thank you, Mr. Chairman. And thank you, Senator Craig. Calling from Idaho, I appreciate your allowing me to be a part of this hearing today.

I am going to try in my questioning to make a point to the committee and everybody else that we can spend relatively few dollars

early on in the project, as far as Rocky Flats and Colorado is concerned, with a considerable amount of savings in the outyears, because of reduction in fixed costs, which you referred to in your statement. So I have a number of questions I will submit to the staff for them to give to you. If you would respond to those in a timely manner, I would appreciate that, as soon as possible.

[The information follows:]

TOTAL EMPLOYED EM STAFF

At the end of March 1997, there were 3,077 Federal Environmental Management employees. Almost 80 percent of these employees are located at the field offices. Here is the breakout of our workforce:

Washington, DC (Headquarters)	605
Albuquerque, NM	221
Chicago, IL	79
Idaho Falls, ID	255
Las Vegas, NV	60
Fernald, OH	230
Oakland, CA	71
Oak Ridge, TN	150
Richland, WA	528
Rocky Flats, CO	293
Savannah River, SC	536
Morgantown, WV	17
Pittsburgh, PA	32
Total	3,077

The employees in Pittsburgh are part of the 527 transfers from the Bureau of Mines to the Department of Energy. The majority of that workforce has been assigned to the Fossil Energy program, but Environmental Management is paying the salary and benefits of 29 former Bureau of Mines employees.

ROCKY FLATS 10-YEAR PLAN

Senator ALLARD. Now, to get to it, if you would raise that chart up there just a little bit.

We have got on the chart here three case scenarios as far as Rocky Flats and Colorado is concerned. And we have case one which shows fewer dollars spent up front, and then, closure and expenditures go clear out to 2028. We have case two, where we are on track now—I believe, on the case two—where it shows that we spend a little more up front, and then we get closure and considerable savings when we come down to 2015. And then, if we even put up early here about $165 million, we can come up with a total savings of $1.7 billion and actually have closure by 2010. That is what we are trying to show on the chart.

And so I have several questions I want to direct to you in regard to this chart. Does Rocky Flats meet all the criteria for accelerated closure projects set forth in section 3143 of the National Defense Authorization Act of Fiscal Year 1997.

Mr. ALM. Yes, sir; it does.

Senator ALLARD. Is the chart behind me—you see the three funding curves that we talked about—and you should have a copy of it in front of you, by the way—do you agree with me that the least costly scenario, which is case five, would cost DOE about $165 million more during the next 4 fiscal years than the original stable budget scenario that headquarters decided to use, which is case No. 2 on the chart?

Mr. ALM. I agree that that is what this chart indicates. I have a somewhat different understanding, but it makes the same point. On working on the 10-year plan for Rocky Flats, it was clear that the flat allocation would not achieve the completion and would not achieve our cost-effectiveness goal. And so we are actually proposing, in the draft 10-year plan that will come out, an increase of $50 million a year for 3 years for Rocky Flats, over the normal allocation of where they are now.

Senator ALLARD. So you are proposing $150 million over 3 years, where this scenario had a $165 million increase over 4 years?

Mr. ALM. Yes.

Senator ALLARD. OK.

Mr. ALM. We also have efficiencies that we are getting the site to commit to. And it is our hope that we can complete Rocky Flats by the year 2006.

Senator ALLARD. We are all for you on that, if we can probably get that to happen. And that is the point I want to make. You know, early expenditures here, early on, will save more than tenfold on costs over the life of the project. Then you do agree that case five would ultimately save about $1.7 billion in total project costs, going from $9 billion, down to $7.3 billion?

Mr. ALM. That is correct. That is what this chart shows.

Senator ALLARD. And that then allows completion much earlier?

Mr. ALM. Right.

Senator ALLARD. Now, would you explain how DOE prioritized its environmental management budget between sites?

Mr. ALM. We have to consider three factors. First is compliance, and we are firmly committed to compliance. Second is risk. We obviously have to finance the riskiest projects in early stages. And third is mortgage reduction.

Now, Rocky Flats strongly meets two of the three. The compliance agreements are a little more nebulous than some of our other sites. But Rocky Flats is very, very high in terms of priority for risk, since the site deals with plutonium materials, and is close to population centers, and the opportunities for mortgage reduction are really very, very substantial, as these charts—I have seen so many different charts from the contractor—illustrate the point.

If you can get into these buildings, decontaminate them, then you save a lot of money in terms of security and safety costs. And you can plow that money into the cleanup of other buildings. And so, in a sense, if you sequence projects correctly, you actually can create an investment fund to clean up more sites.

RISK CONCERNS AND THE 10-YEAR PLAN

Senator ALLARD. OK. I guess the next question I have is, you do—it replies to a risk, and obviously we are very concerned about the risk, because it is a high-population area and a major watershed, even downstream, out of Colorado.

Now, what does the Department of Energy intend to do? Can you give us some more specifics on your 10-year plan? In other words, you are trying to move this along as fast as possible? You are not going to really endorse even the case five. You would like to have it cleaned up by 2006. Can you give a little more specifics on how you are going to reach that goal?

Because what we have done here, we have really compressed these plateaus. If you look on the chart, there are two plateaus. We have really compressed those down. And those, I assume, are related to buildings. And then, once you clean up those buildings, then all your security—you destroy the buildings, all your maintenance operations dry up.

So to get this done in 2006, for example, give us a little more specifics on how you are going to do that.

Mr. ALM. Well, the Rocky Flats plan is really built around the various buildings. And what we are doing now is draining a lot of plutonium liquids, which are unstable. We are working in some of the major buildings. I think there are 79 buildings that we are working in. Those are just a bunch of numbers. But the idea really is to go through and stabilize first. Then, when you have stabilized everything, then you can come back later and do the decommissioning. Also, later on, you can do some of the environmental restoration projects.

Senator ALLARD. And you think, in consultation with the private contractor in this case, you both agree that this is a very doable goal by 2006?

Mr. ALM. I think it is doable but it is going to require that this contractor and all of our contractors become increasingly more productive. If you take a look at the total 10-year submissions from the field, they were not adequate to meet all of our compliance and completion goals.

Senator ALLARD. Yes.

Mr. ALM. And we thought about various alternatives. And, really, the one that makes the most sense is to push efficiency. And we have found in the past in this program, when we have had to become more efficient because of the lack of funds we have been able to do it. And so, by setting efficiency goals, we hope, year by year, to keep the pressure on for improving performance.

Senator ALLARD. Let me move along. I have two more questions, Mr. Chairman.

Which accounts do you anticipate funding the project from?

Mr. ALM. The Defense account.

Senator ALLARD. OK. And then you are very comfortable working with the contractor, with your goals now? Now, the contractor did get some—I think I read in the paper where he did get a few penalties, because he did not meet some of his goals. Is that correct?

Mr. ALM. That is correct.

Senator ALLARD. And so now you are even moving this up to 2006. And that is why I asked this question, between the contractor and yourself, have you set down and sort of feel that both of you feel that this is a reachable goal? We want to get it cleaned up as soon as possible, but I also want to make sure it is a realistic goal.

Mr. ALM. I have talked to both the field manager and the contractor. And it is clearly a reasonable goal. But it will take some stretch.

Senator ALLARD. OK.

Thank you, Mr. Chairman.

Senator DOMENICI. Well, I will tell you, if that is achieved by 2006 and you can lay claim for doing something to have put us in

that position, that will be a very significant achievement all by itself. It seems that this is among the kind of projects we have got that just never end, and we are very hopeful this new approach will succeed. I am not trying to hurry up things and violate any safety and health rules, but, clearly, some of these projects have to come to an end.

Senator, I have not inquired, but I would like you to. I am going to have to step out and talk to Senator Lott on the phone for 1 minute, and if you are inquiring, that would be fine.

WASTE ISOLATION PILOT PLANT

Senator CRAIG. Mr. Chairman, thank you.

And, Mr. Alm, thank you for being with us today. I think what the chairman has just said reflects a frustration of all of us—that our nuclear legacy in the area of defense is a very long term, costly cleanup, through the environmental management program that we are looking at today. All of us sense a degree of urgency that it be done in a timely fashion, because the costs are horrendous. There is no question about it.

I must say that improper management, inefficiencies that stretch this out, bluntly put, become gold mines for those who are doing the work, but become a mine shaft, if you will, for the taxpayers who are footing the bill. You are in the middle of that. Obviously, your ability to manage and to cause a sense of urgency and responsibility and timeliness is critical to all of this. I think that all of us who are looking at finite dollars and want to make sure that all of the proper funding goes forward, we have got to turn to our colleagues on the floor of the Senate and make justification for these very large sums of money that are involved here.

My colleague from Colorado is concerned about Rocky Flats, as am I, along with a lot of other locations. Of course, as you know, Al, this is directly tied, in some instances, to our ability to open the waste isolation pilot plant in Carlsbad. I guess I am growing increasingly frustrated. As I expressed to you the other day, the Department of Energy settlement agreement with our State, with our Governor, mandates that the INEEL begin shipping transuranic waste out of Idaho for disposal at the WIPP facility in Carlsbad by 1999.

It is so necessary, therefore, that this facility be open to accommodate not only our concerns in Idaho, but the concerns in Colorado and elsewhere around the country. The concerns in Idaho are tied to a Federal court-ordered agreement. The Governor of Idaho has substantial leverage on a failure-to-perform relationship with the Department of Energy, and that substantial concern and leverage is to shut Idaho's border.

To shut our border potentially drydocks a tremendous amount of the nuclear naval vessels at sea. It is one of those things that has extensions of responsibility well beyond just opening the doors down at Carlsbad. It has implications for your nuclear Navy, and we want to make sure WIPP opens in a timely fashion.

My question to you—and what I am doing for the record is, instead of giving an opening statement, Al, I am kind of combining comment with question, so that the record demonstrates the ur-

gency I think that many of us sense with a variety of projects and programs that you have under your supervision.

What are the Department's plans for dealing with the State of Idaho if the WIPP facility is delayed beyond the time line within the agreement?

Mr. ALM. Well, with respect to the transuranic shipments, I think we would continue with the program of the advanced mixed waste treatment facility. We would have to look at the material that is just currently being stored and not slated for treatment. But I say, Senator, that the frustration you have is certainly shared. It is shared by me and Secretary Peña. We want to get the WIPP open as soon as possible.

EPA'S REVIEW OF DOE'S COMPLIANCE DOCUMENTS

Senator CRAIG. Well, I am looking at long-term concerns based on current records of performance and the struggle we have had with this, because I have got to start thinking ahead. Already, EPA is pushing a time line that you are frustrated by, that I am frustrated by, and that the Secretary is frustrated by. What are the near-term actions that DOE plans to take as it relates to EPA's review of DOE compliance documents?

Mr. ALM. Senator, we meet weekly with EPA and go over all the details of their requirements. One thing we have done recently—and this gets very technical—but there is something called the performance assessment. And the EPA has indicated that because of disagreement with some parameters, they want it to run again. One thing we have been able to do is—for statistical purposes, they said we might have to do it three times—but rather than take a chance, we have bought some extra computers, and we will run it all simultaneously. That could save 60 days. And that is one of the actions. And it is the kind of thing we are trying to do to reduce the timeframe.

The Secretary has met with Carol Browner. And he has a commitment from her, and we have a commitment from the staff, to do everything we can to hurry this project and get the certification approved as quickly as possible. One dilemma is we want to make sure that, in moving ahead, we have a legally supportable record. Because nothing would be worse than to have this hung up in the courts for a long period of time.

Senator CRAIG. Well, I think we all agree with that. But one of the concerns that the chairman and I got involved in some years ago that brought EPA into this was to make sure that we did create an environment in which it was legally supportable, and that we had covered all of the bases. But, last year, we also expressed our desire to make sure that we dual-tracked here and got it done in a timely way, and not that EPA was allowed to recreate the process. I think that is our greater concern now, because of what most of us believe to be a very safe facility by all current indications. So, if you are able to duplicate in the fashion you have just expressed, I think that is going to be tremendously helpful.

Mr. ALM. Senator, let me assure you that I will do everything possible to keep our current schedule going. I will say that, certainly, the Office Director at EPA, who is working on this, has been very helpful. And she is committed to opening WIPP.

Senator CRAIG. Well, I am pleased to hear you say that. I am also pleased that the Secretary has been out there and is concerned, and obviously has made this, by all appearance of action, at least, a priority. It is a priority to all of us because, as you know, so much, not just in Idaho, but elsewhere, is tied to the ability to have a facility like that open and actually receiving transuranic waste.

Mr. ALM. Well, I certainly share that. Because the WIPP is integral to not only the Idaho situation, but Rocky Flats, Los Alamos, and other facilities.

Senator CRAIG. If nothing else, we need to prove to ourselves we can finally do something in the area of a final destination for this waste. I understand that we are pioneering in certain areas as it relates to geologic repositories compared to the rest of the world. But when we choose this route and the world chooses other routes, and they appear to be successful and responsible and environmentally sound and we just cannot get the job done, it is really a very dramatic and poor testimony to our ability as a country.

Senator ALLARD. Would the Senator from Idaho yield?

Senator CRAIG. I would be happy to.

OPENING OF THE WASTE ISOLATION PILOT PROJECT

Senator ALLARD. I would like to pile in on top of you here just a little bit on the importance of opening the WIPP site. Because I just finished a tour myself of Rocky Flats. And there are a lot of barrels that are packed and ready to go down there. And if we are going to stay on schedule with even the more modest schedule plans, we have got to get that out of there. So I thank the Senator from Idaho for yielding on that point.

Senator CRAIG. I appreciate the Senator from Colorado's concerns, because we have a mountain of barrels in Idaho that came from Colorado, and he also has a similar mountain of barrels, all of them slated to go to Carlsbad.

Al, let me commend your efforts and those of your staff in preparing 10-year plans for the Department of Energy sites. Your stated goal in this process is to complete cleanup at most sites within a decade. That is an ambitious plan but, again, a plan that I think all of us want to work with you on. You go on to state that a longer delay will simply cost more. And I think, whether it is the expression of the chairman or the Senator from Colorado, that is all very clearly demonstrated.

You start running these plans out there and, as you have mentioned, the term mortgage reduction is clearly a reality. The reality is that we no longer will have to baby sit sites, by your expression, if we can deal with this. My question is, would you agree that true mortgage reduction for the DOE complex requires opening disposal sites both at the WIPP in New Mexico and at Yucca Mountain in Nevada, otherwise you have nowhere to send the waste or the spent fuel?

Mr. ALM. Well, we have a waste program, which, in Savannah River, we are now vitrifying high-level waste; likewise, we are vitrifying high-level waste in West Valley. And we have the Hanford privatization project. That means that we will be vitrifying these wastes and then storing them on site. So, until Yucca Mountain is

open, we are simply storing them. And that is obviously true, from our discussion before, on WIPP. WIPP is finished. It is costing us a lot of money to operate the facility and we should really begin moving waste into it.

PIT 9 CLEANUP PROBLEMS

Senator CRAIG. Well, I appreciate that. I think you have already expressed the second part of my question, which was going to deal with what you are doing as it relates to reducing this mortgage profile by getting disposal sites open. Of course, we understand the frustration with Yucca Mountain and the time line on that facility. But Yucca Mountain is also extremely key to Idaho and to the rest of the country as it relates to resolving disposal of high-level waste and spent fuel.

Congressional concerns about Pit 9 continue as it relates to the cost and the discussion of overall DOE privatization efforts. To what factor do you attribute the problems at Pit 9 in Idaho?

Mr. ALM. Well, there are a number of characteristics at the Pit 9 project that you do not normally see on a project like this. One, during the course of this project, you had two companies merging creating uncertain management and chains of command for periods of time. We have had four project managers. And so there are unusual situations.

I think that Pit 9 really indicates the importance of stability and having project managers who have conducted projects of similar magnitude, who you have real confidence can do the work. I am not suggesting that the project managers could not do the work, but clearly when you find project managers of high caliber, who have got the requisite experience, you have a very good chance of the project succeeding.

Senator CRAIG. Well, what do you think the impact of the Pit 9 experience will be on privatization projects such as the advanced mixed waste treatment project that DOE is currently planning?

Mr. ALM. Well, Senator, my personal opinion is that Pit 9 and the situation surrounding it will actually make the probability of another problem of that kind less likely. I think that contractors undertaking privatization projects with DOE will, first of all, go through internal procedures in their company to fully understand the risks and the contingencies. I think that the companies will select project managers who they feel can succeed, since they are going to be putting a lot of their own money in.

From DOE's point of view, I think we have learned some things about how we need to pay attention to project managers, to develop a system of monitoring without meddling, and understanding the dimensions of these kind of projects at the very beginning. I mentioned earlier that it is very important that you clearly specify and understand what the product is and have some sense of how it will be achieved.

Senator CRAIG. Well, I hope, out of this, maybe it will get called the Pit 9 approach or the Pit 9 doctrine. We had better be learning some lessons from this. They are expensive. They are expensive to the private participants. What will the cost to the Government be—or, I should say, will the cost to the Government be driven up as a result of Pit 9?

Mr. ALM. Well, the situation right now with Pit 9 is that Lockheed-Martin LeMays, which is the subcontractor, entered into a fixed-price contract. At this point in time, the Government has no further obligations. We are evaluating a request for equitable adjustments. And once we make a determination, then there may be some payment, and there may not be. But those discussions are underway right now.

Senator CRAIG. What about long-term costs ultimately, based on time lines and successes on a project like Pit 9, to succeed in being able to exhume waste and do the kinds of things we want to do with old waste stored underground; that has got to have some cost factor to it, has it not?

Mr. ALM. Oh, no doubt it will. And certainly a delay factor. I mean the project is already substantially delayed. So, if it goes forward, it will be considerably behind schedule.

TECHNOLOGY DEPLOYMENT INITIATIVE

Senator CRAIG. The Department's fiscal year 1998 budget requests $50 million for the technology deployment initiative. What is the importance of this funding request, and how much of the funding might be allocated to the INEEL programs?

Mr. ALM. The $50 million deployment fund was designed to create incentives to bring on innovative technology. We have spent billions of dollars in our technology development programs over the years. And, unfortunately, you do not see anywhere near as much actual deployment of the technologies, despite the fact that many have successfully gone through the demonstration phase.

The idea of the $50 million is to create funds that will help overcome some of the obstacles of applying an innovative technology. Those are regulatory obstacles and inertial obstacles. If this experiment is successful, we may be able to bring on a lot of technologies that currently are merely sitting at the demonstration scale. And I would be more than happy, once we get proposals, to brief you and any other member on what kind of response we are getting and whether or not this really will be a way to jump start the use of innovative technology.

Senator CRAIG. Well, I think all of us who have these marvelous laboratories in our States are extremely concerned about the ability to diversify them and for the labs, in part, to stand on their own, with their talent and their technology. This technology deployment becomes an important part of that.

Mr. ALM. Well, I am certain that the INEEL will be interested and will come up with some good proposals.

ADVANCED MIXED WASTE TREATMENT FACILITY

Senator CRAIG. Al, the consent order settlement agreement between DOE and the State of Idaho requires the Department to commence as soon as practical the procurement of a waste treatment facility at the INEEL for transuranic and low-level waste. Facility construction is to be completed no later than December 21, 2002. I do not think I need to remind you that this settlement is legally enforceable.

I mean I know this Governor and any future Governor is going to insist that that agreement be met to the letter of the agreement.

I suspect, given the time lines on it, that any Federal judge reviewing it at that time—failure to meet it, would suggest that DOE had adequate time to respond.

I think all of us take the terms of the agreement very seriously. I certainly do. This agreement could be a bellwether for DOE's new culture. Does DOE take the commitment seriously?

Mr. ALM. Yes; we do, Senator. As you are probably aware, the advanced mixed waste treatment facility is a privatization proposal. Congress made $70 million available last year. There is no need for budget authority this year, but there will be in the future.

Senator CRAIG. How is the work proceeding on that initiative?

Mr. ALM. My understanding is that right now the business at hand is getting a permit and a conceptual design. And I forget when next year, but next year they will actually make a proposal for moving ahead on the cleanup. That is an interesting project, because we had originally had an M&O estimate that it would cost $2.5 billion. The winning bid under the privatization was $1.1 billion. So we have had tremendous savings by going the privatization route in this case.

IDAHO AGREEMENT

Senator CRAIG. Mr. Chairman, one last question. And I appreciate your leniency here.

The consent order settlement agreement between DOE and the State of Idaho requires that by December 31, 1999, DOE shall commence negotiating a schedule with the State of Idaho for the transfer of all spent fuel at the INEEL out of wet storage facilities into dry storage. Three Mile Island spent fuel is required to be transferred to dry storage by June 1 of the year 2001.

Could you describe what dry storage initiatives are funded at the INEEL in the fiscal year 1998 budget request?

Mr. ALM. Yes, sir.

Senator CRAIG. Are you satisfied that your current plans will put you on course to achieve the 2001 milestone?

Mr. ALM. Yes, sir, Senator. We have a proposal for $108 million, under the privatization program, to build a spent nuclear fuel dry storage facility. And I think that is a very, very important initiative. I think that some of the riskier activities we have in DOE are these pools of fuel and the like—that is, the fuel rods. Many of the pools are leaking. So the faster you can get into dry storage, the better. And this proposal is aimed at achieving that.

Senator CRAIG. Well, Al, thank you very much. I appreciate your forthrightness and your direct approach toward these issues and the way you answer them.

Mr. Chairman, thank you.

TECHNOLOGY DEPLOYMENT AND REGULATORY STRUCTURE

Senator DOMENICI. Thank you very much, Senator.

Mr. Alm, let me first make sure that we understand, while this committee has not been opposed to, and has actually funded rather adequately, the new technology efforts, I think we should know that it has been rather abysmal in its record thus far. My understanding is that we funded 1,370 different technology projects—and this is not your fault; I mean you have not been around here long

enough for this mess—1,370 different technology projects; 50 of them have been deployed or used, another 12 have been selected, and perhaps 100 more may be deployed.

The total amount of savings that can be traced to this program is $309 million from a multi, multi, multi-billion-dollar investment. The total expenditure in this program is $2 billion. That is a pretty healthy effort.

You know, I suspect, that our industrial sector and our inventors and the genius of entrepreneurs is better than that. I think there is something about the way we have structured these projects, the way we have layered them, that is making it very difficult for inventors and people with new ideas and new technologies to see any daylight. I do not think this kind of failure is directly a product of it being too hard to find solutions. I think it is a failure because it is too hard to find solutions the way we have structured the program and the way we have regulated it, sometime terribly inconsistent, and the way we have failed to define an end product in many cases.

We do not know whether we want to clean it up so you could sit out there and drink clean water off the ground or whether we want to do something else. We have not even made those kind of decisions yet. So I think how you put enterprising people to find new ways to do it—I imagine many of these are just little changes in the way we are currently doing things, which is really a big project of moving waste around from one pile to another, and moving it someplace, which is a big earth-moving project, most of this cleanup.

I also want to state for the record that this Environmental Management Program, even though projected in the outyears to cost much, much more, is already becoming an enormously big component of the defense spending in the whole nuclear weapons/nuclear cleanup area. My recollection is—and, staff, you tell me if I am wrong—but the new nuclear program science-based stewardship program to maintain our entire weapon systems in a reputable, safe and trustworthy manner is about $4.1 billion. Just imagine that. That is for the entire arsenal. And this budget has $7.4 billion for the environmental management program, and going up. I do not know where we are going to get the money for either of the two at this rate.

I want to proceed to ask a general question. And if you do not feel like answering it, I understand. You have looked at this now, and you have tried desperately to find ways to get on with this work. We understand it is tough work. It is hazardous. Do you believe that we might serve the Nation well if we were to actually take a look at the entire regulatory structure for cleanup and see if we could not modify it, to streamline it, and yet provide for health and safety?

Mr. ALM. Well, Mr. Chairman, a few years ago, I think that the number of regulatory obstacles were such that I might have answered affirmatively. But in the last couple of years, the regulators, I think, have worked very closely with us in virtually all cases. I can give you one personal example. When the funds were obviously going to be reduced, and Hanford would not have enough money to move ahead with some major regulatory commitments, a

meeting was held in St. Louis with the contractor, the DOE field office, and the regulators. And the regulators left the room at one point in time, came back with a series of proposals—a single regulator for projects and ways of streamlining activities.

I would think, in general, our regulatory relationships with the sites are pretty good. They get testy now and then.

Senator DOMENICI. But maybe there has to be testing, I understand.

Mr. ALM. Yes.

COMPLIANCE AND ROLLING MILESTONES

Senator DOMENICI. Now, let me ask you this. There is another set of relationships that are intriguing. And I guess if you are in the Hanford area and in that State, you look at it maybe differently than I do. And I understand that. But, obviously, it is pretty hard for that region to think of this program being reduced dramatically and ultimately to have no dollars assigned to that area.

It is a very, very big employer of people. While they want to clean up, they have a very big interest in making sure that all this money continues to flow. I hope nobody takes offense to that. It is just a reality. It is a very, very large number of people employed and money going into the area.

We entered into some early on agreements between the Federal and local government as to what we would do and what they would let us do. Are they in need of some modification that would enhance the work we could do in your efforts to get this done more expeditiously?

Mr. ALM. Well, Mr. Chairman, in most situations, we are now in the position of having rolling milestones, so they are renegotiated. For example, we were talking about Colorado. Colorado completely changed its compliance agreement over the last year or so. And I had the pleasure, last summer, of signing the compliance agreement, which is consistent with the 10-year plan. So some of them are negotiated. I should indicate that the agreement with Idaho was not negotiable, but that was made under unusual circumstances. But, in many of our sites, we do have rolling milestones.

Senator DOMENICI. Would it be difficult for you to go through with your staff and give us a summary of these, and tell us how the milestones have affected your ability to get things done more expeditiously? And, I think, equally or more important, we would like to know whether there are some milestones that are stuck in the mud, that we cannot get them changed and they ought to be changed. Can you do that?

Mr. ALM. Yes, sir; I would be more than happy to.

[The information follows:]

ENFORCEABLE MILESTONES

The attached list summarizes EM's milestones; the milestones are categorized by site, operations office, and provide cost and enforceable dates. The Department believes that legally enforceable commitments can serve the useful purpose of encouraging real progress towards completion of clean-up tasks, provided the milestones are set with appropriate attention to budget constraints, "on the ground" work and risk. Over the past few years, the Department has worked closely with its regulators to improve its environmental cleanup and compliance agreements to ensure that enforceable milestones are set with these considerations in mind. For example, the Department recently concluded negotiations on a new cleanup agreement for the Rocky

Flats Environmental Technology Site that contains many improvements over its previous agreement. As we have been doing at Hanford, Rocky Flats will now use a "single regulator, single process" approach to cleanups in order to reduce duplicative paperwork requirements and the potential for inconsistent direction from regulatory agencies. An accompanying Memorandum of Understanding among the States, Environmental Protection Agency, Defense Nuclear Facilities Safety Board, and DOE also will help to improve coordination and minimize conflict among the agencies responsible for overseeing activities at the site, including deactivation and decommissioning activities. The new agreement also focuses more on accomplishing "on the ground" work than on paperwork milestones, and includes a process for prioritizing work across the site to ensure that higher risk activities and safety concerns are addressed first.

Another significant improvement in the new Rocky Flats agreement is the incorporation of a "rolling milestone" framework, which coordinates the establishment of milestones with the federal budget process and better recognizes the uncertainties of federal funding availability. Under this approach, near-term activities within the Department's three-year budget execution and planning window are designated as enforceable milestones subject to penalties if the Department fails to meet these milestones. Out year activities beyond the budget planning window are generally designated as non-enforceable deadlines, recognizing the greater technical and funding uncertainties associated with these dates. Each year, the existing milestones are reevaluated in concert with the budget process to determine if changes are warranted based on funding availability, new priorities, or other factors. While regulators are not bound to keep milestones within appropriated funding levels, they have agreed to consider these levels in good faith in establishing and reviewing milestones. The agreement also contains a limited number of out year enforceable milestones designed to provide accountability for key cleanup commitments and ensure adequate progress at the site. Just as at Hanford, DOE will be working with the Rocky Flats regulators to continue to identify opportunities for cost savings and productivity improvements at the site.

The Department is requesting that regulators agree to use the "rolling milestone" approach in all new cleanup and compliance agreements that contain long-term milestones with significant funding commitments. In the past few years, the Department negotiated twenty-nine (29) new mixed waste treatment orders under the requirements of the Federal Facility Compliance Act. It is encouraging to note that in most of these orders, regulators agreed to use a "rolling milestone" approach and demonstrated a willingness to try to work with DOE to address funding concerns. DOE intends to work collaboratively with regulators and other stakeholders to determine appropriate priorities and, as necessary, propose modifications to certain compliance activities to reflect those priorities and reflect funding levels. Successful implementation of this collaborative approach should prevent milestones from being "stuck in the mud."

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	HE BURN PIT CLOSURE PLAN	SF -1481-03	12/1/1995	8/30/1997		CAT1	0
Enforceable Agreement	PREFINAL COMPREHENSIVE REMEDIAL DESIGN SENT BY DOE-ID TO EPA/IDHW	ID -4002	1/8/1996	1/31/1997		CAT3	0
Enforceable Agreement	REMEDIAL DESIGN IMPLEMENTATION PLAN FOR 8834 COMPLEX	SF -1481-03	2/15/1996	12/15/1999		CAT3	0
Enforceable Agreement	DRAFT RA WORKPLAN SENT BY DOE-ID TO EPA/IDHW	ID -4002	2/22/1996	1/28/1997		CAT3	0
Enforceable Agreement	SUBMIT Q2 ASMT FINAL QUADWIDE RFI REPORT TO AGENCIES	OR -6300-U	9/5/1996		10/16/1996		0
Enforceable Agreement	SUBMIT PRELIMINARY NRTS DESIGN TO EPA	OHFN-4003	9/30/1996	1/29/1998		CAT2	0
Enforceable Agreement	TA08: &09 SOIL SAM AA DRAFT REPRT COMPLT RFI REP	ALLA-2005	10/1/1996		10/1/1996	CAT3	0
Enforceable Agreement	TA54: MDA L(DRILL)START RFI REPORT RFI PH1	ALLA-2005	10/1/1996		10/1/1996	CAT3	0
Enforceable Agreement	EPA RECEIVES SHORT-TERM INJECTION TEST RPT (CA)	OHFN-4002	10/1/1996		10/1/1996	CAT3	0
Enforceable Agreement	EPA RECEIVES DRAFT BASELINE REMEDIAL STRATEGY REPORT	OHFN-4002	10/1/1996		10/1/1996	CAT3	0
Enforceable Agreement	EPA RECEIVES SHORT-TERM INJECTION TEST RPT (CA)	OHFN-50-B2	10/1/1996		10/1/1996	CAT3	0
Enforceable Agreement	PA RECEIVES DRAFT BSLN REMEDL STRATEGY RP (CA)	OHFN-50-B2	10/1/1996		10/1/1996	CAT3	0
Enforceable Agreement	EPA RECEIVES DRAFT BASELINE REMEDIAL STRATEGY REPORT	OHFN-50-B2	10/1/1996		10/1/1996	CAT3	0
Enforceable Agreement	EST SEC GW REM - SUBMIT CORRECTIVE ACTION PLAN STATUS REPORT #2	SR -516-AA	10/5/1996		10/2/1996	CAT3	0
Enforceable Agreement	SOUTH SEC GW-SUBMIT (METLAB) CORRECT ACTION PLAN STATUS REPORT #2	SR -516-AA	10/5/1996		10/2/1996	CAT3	0
Enforceable Agreement	SUBMIT DRAFT PHASE II RAWP TO EPA	OHFN-4003	10/7/1996	1/15/2001		CAT2	0
Enforceable Agreement	DF TITLE I/II: ISSUE FINAL DESIGN TO EPA	OHFN-4002	10/14/1996		10/14/1996	CAT3	0
Enforceable Agreement	DF TITLE I/II: ISSUE FINAL DESIGN TO EPA	OHFN-47-B2	10/14/1996		10/14/1996	CAT3	0
Enforceable Agreement	L AREA O/C A/C BASIN (904-83G-77G)SUBMITTAL REV.0 PP TO REGULATOR	SR -504-AA	10/14/1996		10/11/1996	CAT3	0
Enforceable Agreement	SUBMIT DRAFT FINAL TO USEPA-AREA 1 PHASE I, RAWP/DESIGN PKG (CA)	OHFN-4002	10/17/1996		10/9/1996	CAT3	0
Enforceable Agreement	SUBMIT FINAL TO USEPA-AREA 1A RA WP (CA	OHFN-50-B2	10/17/1996		10/9/1996	CAT3	0
Enforceable Agreement	BIPR Submitted - 4th Quarter	ALLA-2107	10/18/1996		10/25/1996	CAT1	0
Enforceable Agreement	Quarterly Installation Progress Rpt (QIPR)	ALLA-2107	10/18/1996		10/25/1996	CAT1	0
Enforceable Agreement	SUBMIT OU1 DRAFT RA WORK PLAN TO EPA	OHFN-4002	10/22/1996		10/18/1996	CAT3	0
Enforceable Agreement	TRANSMIT TO WDOE A REPORT FROM INDEPENDENT CONTRACTOR THAT.....	RL -1230-0	10/24/1996		10/24/1996	CAT3	0
Enforceable Agreement	BORAX V D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	10/27/1996	6/19/1997		CAT3	0
Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	10/28/1996		10/28/1996	CAT1	0
Enforceable Agreement	SUBMIT DRAFT FINAL CONTINGENCY PLAN TO THE REGULATORY AGENCIES	SF -1481-01	10/29/1996		10/22/1996	CAT3	0
Enforceable Agreement	QUARTERLY REPORT - FOURTH QUARTER FY 1996	OR -3206	10/31/1996		10/31/1996	CAT3	0
Enforceable Agreement	SUBMIT TWAP ANNUALLY TO ECOLOGY AND EPA FOR APPROVAL.	RL -1130-0	10/31/1996		10/31/1996	CAT3	0
Enforceable Agreement	ISSUE CY96 3RD QUARTER NESHAP STATUS TO RL FOR EPA	RL -7340-0	10/31/1996		10/10/1996	CAT3	0
Enforceable Agreement	MISC. CHEMICAL BASIN/METAL BURN PIT-SUBMIT REV.0 RFI/RI TO REGULA	SR -504-AA	10/31/1996		10/28/1996	CAT3	0
Enforceable Agreement	EPA RECEIVES DRAFT RA WORK PLAN	OHFN-4002	11/1/1996		10/31/1996	CAT3	0
Enforceable Agreement	AWARD S/S FABRICATION (EPA MS 11/13/96)	OHFN-4003	11/13/1996	2/3/1998		CAT2	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	WAG 27, RI/FS WP	OR -5300-U	11/14/1996		11/15/1996		0
Enforceable Agreement	WAGS 1&7, D3 PROPOSED PLAN	OR -5300-U	11/14/1996		11/15/1996		0
Enforceable Agreement	OLD F-AREA SEEPAGE BASIN(904-49B)SUBMIT REV.0 ROD TO REGULATORS	SR -506-AA	11/14/1996		11/13/1996	CAT1	-115
Enforceable Agreement	-AREA BRP - SUBMIT REV. 0 ROD TO REGULATORS	SR -508-AA	11/14/1996		11/13/1996	CAT3	0
Enforceable Agreement	D-AREA BURN RUBBLE PIT - SUBMIT REV. 0 ROD T REGULATORS	SR -508-AA	11/14/1996	11/14/1996	11/13/1996	CAT3	0
Enforceable Agreement	SILVERTON ROAD WASTE SITE - SUBMIT REV. 0 ROD TO REGULATORS	SR -509-AA	11/14/1996	11/14/1996	11/13/1996	CAT3	0
Enforceable Agreement	GUNSITE 720 - SUBMIT ROD TO EPA/SCDHEC	SR -513-AA	11/14/1996		11/13/1996	CAT3	0
Enforceable Agreement	GRACE ROAD WASTE SITE - SUBMIT REV. 0 ROD TO REGULATORS	SR -513-AA	11/14/1996	11/14/1996	11/13/1996	CAT3	0
Enforceable Agreement	GUNSITE 113 ACCESS ROAD (631-24G)-SUBMIT REV. 0 ROD TO EPA/SCDHEC	SR -513-AA	11/14/1996		11/13/1996	CAT3	0
Enforceable Agreement	ANNUAL STP UPDATE	ID -4302-01	11/15/1996	11/15/1996	11/15/1996		0
Enforceable Agreement	DRAFT PUBLIC MEETING DATE FOR HEPA	SF -1481-03	11/15/1996			CAT3	0
Enforceable Agreement	EV. 0 APP E, LONG-TERM PROJ FOR FY 98 & FY 99 & PROJ ROD ISSUANC	SR -801-AA	11/15/1996		11/15/1996	CAT3	0
Enforceable Agreement	OU 1-07B INITIATE HYDRAULIC CONTAINMENT	ID -28-EG	11/18/1996	11/18/1996	11/15/1996	CAT3	0
Enforceable Agreement	Issue Final IWP Update	ALLA-2107	11/19/1996		12/20/1996	CAT1	0
Enforceable Agreement	RA SURVEILLANCE & MAINTENANCE, ISSUE 3001 CANAL DRAFT ACTION MEMO	OR -3300-W	11/22/1996		11/18/1996		0
Enforceable Agreement	WAG 6, TSPP	OR -5300-U	11/26/1996		11/26/1996		0
Enforceable Agreement	BEGIN OPERATION OF TFE-EAST PTU	SF -1481-01	11/27/1996		11/28/1996	CAT3	0
Enforceable Agreement	WELL SAMPLING & ANALYSIS-SUBMIT SLF 3Q96 GW COMPLIANCE REPORT	SR -701-AA	11/27/1996		11/25/1996	CAT3	0
Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	11/28/1996		11/28/1996	CAT1	0
Enforceable Agreement	ISSUE CONTINGENCY PLAN	SF -1481-01	11/28/1996		11/15/1996	CAT3	0
Enforceable Agreement	ANNUAL IAG SCHEDULE UPDATE TO EPA/DEC - 2300 - BNL	CH -2300	11/29/1996		11/29/1996	CAT3	0
Enforceable Agreement	ONCURRENCE OF ADDITIONAL TANK ACQUISITIO	RL -1100-0	11/30/1996		11/21/1996	CAT3	0
Enforceable Agreement	UBMIT 100-NR-1 AND 100-NR-2 CMS TO ECOL/EP	RL -3125-0	11/30/1996		11/22/1996	CAT3	0
Enforceable Agreement	DRAFT FINAL RECORD OF DECISION FOR GSA	SF -1481-03	12/1/1996		12/1/1996	CAT3	0
Enforceable Agreement	COMPLETE EASTERN AND CENTRAL GSA REMOVAL ACTION	SF -1481-03	12/1/1996			CAT3	0
Enforceable Agreement	FFA PROGRESS REPORT FOR THE FY 96 SUBMITTAL	SR -801-AA	12/1/1996		11/27/1996	CAT3	0
Enforceable Agreement	K-AREA COAL PILE RUNOFF BASIN (189-K) - REV. 0 CMS/FS SUBMITTAL	SR -502-AA	12/2/1996		11/27/1996	CAT3	0
Enforceable Agreement	K-25 SITE-WIDE ROD - ISSUE RI WORK PLAN TO REG'S FOR REVIEW	OR -4300-U	12/4/1996	6/12/1997		CAT1	0
Enforceable Agreement	CMP 080-17G,-17.1G,-18G,-19G,-18.1G,-18.2G,-18.3G)R CMS/FS	SR -509-AA	12/4/1996		11/27/1996	CAT3	0
Enforceable Agreement	SUBMIT DRAFT ACTION MEMO TO EPA/DEC FOR PHASE III	CH -2303	12/9/1996		3/13/1997	CAT1	0
Enforceable Agreement	WAG 17, D1 RI REPORT	OR -5300-U	12/9/1996		11/9/1996		0
Enforceable Agreement	SUBMIT X-749/120 DRAFT FINAL CMS REPORT TO AGENCIES	OR -6300-U	12/10/1996		3/19/1997		0
Enforceable Agreement	DRAFT FS/PRAP REPORT TO EPA/DEC - 2303 - BNL	CH -2303	12/11/1996		12/11/1996	CAT3	0
Enforceable Agreement	OU III REMOVAL ACTION PRE-DESIGN REPORT TO EPA/DEC	CH -2305	12/13/1996		12/13/1996	CAT3	0

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Enforceable Agreement	EFPC WATERSHED ROD, RIWP ADDENDUM ISSUE TO REG FOR REVIEW	OR -2300-W	12/15/1996		12/13/1996		0
Enforceable Agreement	1-07B PHASE B DFT FINAL BENCH SCALE WP SENT TO DOE-ID/EPA/IDHW	ID -28-EG	12/16/1996	12/16/1996	12/16/1996	CAT3	0
Enforceable Agreement	SRE SUBMIT TCRA RMAR REPORT TO EPA/TDEC - D1	OR -3700-X	12/16/1996	8/1/1997		CAT1	0
Enforceable Agreement	OU III RA ACTION MEMORDAUM TO EPA/DEC	CH -2305	12/17/1996		12/17/1996	CAT3	0
Enforceable Agreement	ORNL MAIN PLANT SURFACE IMPOUNDMENTS, SUBMIT DRAFT ROD TO EPA/TDC	OR -3300-W	12/18/1996	8/1/1997		CAT1	0
Enforceable Agreement	TA54: MDA G SURF SOIL AA DRFT RFI REP COMPLT PH1	ALLA-2005	12/19/1996	5/14/1997		CAT1	0
Enforceable Agreement	SUBMIT PK LANDFILL FINAL CMI WORK PLAN TO AGENCIES	OR -6300-U	12/20/1996	7/4/1997		CAT1	0
Enforceable Agreement	-AREA REAC SEEP BASN (804-65G)-REV. 0 RFI/RI & BRA REPORTS SUBMI	SR -505-AA	12/20/1996		12/18/1996	CAT3	0
Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	12/28/1996		12/28/1996	CAT1	0
Enforceable Agreement	SUBMIT MILLSITE RESTORATION CONCEPTUAL DESIGN TO EPA/STATE	ALGJ-1001	12/31/1996		12/18/1996	CAT3	0
Enforceable Agreement	4th Quarter Report Submitted	ALLA-2107	12/31/1996		11/19/1996	CAT3	0
Enforceable Agreement	SWSA 4 SEEP CONTROL, SUBMIT DRAFT RMAR TO EPA/TDEC FOR COMMENT, D	OR -3300-W	12/31/1996		12/13/1996		0
Enforceable Agreement	ISSUE DRAFT RI/BRA FOR QUARRY RESIDUALS TO EPA/MDNR	OR -7308	12/31/1996		12/9/1996		0
Enforceable Agreement	COMP.SAMPLING/ANALYSIS OF BACKLOG SOILS LDR/MTCA	RL -2200-0	12/31/1996		12/23/1996	CAT3	0
Enforceable Agreement	INITIATE REMEDIAL ACTION IN THE 100-DR-1 OPERABLE UNIT	RL -3100-0	12/31/1996		11/25/1996	CAT3	0
Enforceable Agreement	SUBMIT PLANNING DOCUMENTATION NECESSARY TO COMPLETE THE RI/FS	RL -3100-0	12/31/1996		12/26/1996	CAT3	0
Enforceable Agreement	INSTALL ONE ADDITIONAL RCRA WELL FOR A-37-1 CRIB	RL -3210-0	12/31/1996		11/14/1996	CAT3	0
Enforceable Agreement	SUBMIT PFP PART B PERMIT OR CLOSURE PLAN FOR 241-Z	RL -6624-0	12/31/1996		12/26/1996	CAT3	0
Enforceable Agreement	INSTALL RCRA GROUNDWTR MONITOR WELLS AT RATE OF UP TO 50 IN CY 96	RL -7340-1	12/31/1996		11/14/1996	CAT3	0
Enforceable Agreement	SIX SITE EVALUATION REPORTS SUBMITTAL	SR -701-AA	12/31/1996		12/9/1996	CAT3	0
Enforceable Agreement	REMEDIAL DESIGN/REMEDIAL ACTION B834	SF -1481-03	1/1/1997			CAT3	0
Enforceable Agreement	REMOVAL ACTIONS PERFORMED IN FY 95 REPORT SUBMITTAL	SR -801-AA	1/1/1997		12/6/1996	CAT3	0
Enforceable Agreement	OU II DESIGN COMPLETE	ALGJ-1001	1/3/1997			CAT3	0
Enforceable Agreement	PLANT 9 IMPLEMENTATION PLAN TO EPA	OHFN-4001	1/6/1997		1/2/1997	CAT3	0
Enforceable Agreement	WAG 28, RI/FS SCOPING DOCUMENT	OR -5300-U	1/6/1997		12/20/1996		0
Enforceable Agreement	X-749A GROUNDWATER DATA REPORT	OR -6800-U	1/6/1997		1/6/1997		0
Enforceable Agreement	SUBMIT FINAL TO USEPA-AREA 1A RA WP (CA)	OHFN-4002	1/9/1997	9/12/1997		CAT1	0
Enforceable Agreement	REMOVAL ACTION QUARTERLY REPORTS B834	SF -1481-03	1/15/1997		1/15/1997	CAT3	0
Enforceable Agreement	TARGET PUBLIC WORKSHOP DATE FOR PIT 6	SF -1481-03	1/15/1997		1/15/1997	CAT3	0
Enforceable Agreement	WELL SAMP & ANA-SUBMIT INTERM SLF(NEXP) JUL-DEC/96 GW COMP REPORT	SR -701-AA	1/15/1997		1/13/1997	CAT3	0
Enforceable Agreement	BASELINE INSTALLATION PROGRESS RPT (BIPR)	ALLA-2107	1/20/1997		1/23/1997	CAT1	0
Enforceable Agreement	SUBMIT FINAL OU1 RA WORK PLAN TO EPA	OHFN-4002	1/22/1997		1/3/1997	CAT3	0
Enforceable Agreement	DELIVER RD/RA DRAFT WORKPLAN TO USEPA	OHFN-4001	1/27/1997		11/20/1996	CAT3	0
Enforceable Agreement	SUBMIT FS PRAP TO EPA/DEC	CH -2307	1/28/1997	7/15/1997		CAT3	0

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Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	1/28/1997		1/28/1997	CAT1	0
Enforceable Agreement	OU 4-13 DRAFT RI/FS WORK PLAN TO EPA/IDHW FOR REVIEW & COMMENT	ID -34-EG	1/31/1997	1/31/1997	11/27/1996	CAT3	0
Enforceable Agreement	QUARTERLY REPORT - FIRST QUARTER FY 1997	OR -3206	1/31/1997		1/31/1997	CAT3	0
Enforceable Agreement	START DEFINITIVE DESIGN FOR PROJECT W-314	RL -1100-1	1/31/1997		1/31/1997	CAT3	0
Enforceable Agreement	COMPLETE VAPOR SPACE MONITOR. FOR FLAMMABLE GAS GENERATING TANKS	RL -1110-0	1/31/1997		1/23/1997	CAT3	0
Enforceable Agreement	SUBMIT THE 100HR-3 AND 100KR-4 PERFORMANCE MONITORING PLAN, DRAFT	RL -3100-0	1/31/1997		1/16/1997	CAT3	0
Enforceable Agreement	COMPLETE DEACTIVATION OF THE B PLANT 211-B AREA	RL -6626-0	1/31/1997		12/23/1996	CAT3	0
Enforceable Agreement	BEGIN OPERATION OF TFC-SOUTHEAST PTU	SF -1481-01	1/31/1997		1/21/1997	CAT3	0
Enforceable Agreement	MONTHLY GROUND WATER ANALYTICAL DATA REPORTS B834	SF -1481-03	1/31/1997			CAT3	0
Enforceable Agreement	EPA RECEIVS SO PLUME OP PRE-FNL DESIGN PKG	OHFN-4002	2/4/1997		2/4/1997	CAT3	0
Enforceable Agreement	EPA RECEIVS INJECTN DEMO PRE-FNL DESIGN PKG	OHFN-4002	2/4/1997		2/4/1997	CAT3	0
Enforceable Agreement	WEST SECTOR GW REM - SUBMIT (MET LAB) CORRECTIVE ACTION PLAN	SR -516-AA	2/5/1997		2/4/1997	CAT3	0
Enforceable Agreement	TA-53: START FIELD ACTIVITIES	ALLA-2006	2/6/1997	5/19/1997		CAT1	0
Enforceable Agreement	CS BRP (631-6G) - REV. 0 ROD SUBMITTAL	SR -508-AA	2/6/1997		2/5/1997	CAT3	0
Enforceable Agreement	CLINCH RIVER/POPLAR CREEK RECORD OF DECISION (D1)	OR -9300-W	2/12/1997		4/4/1997		0
Enforceable Agreement	X-735 NORTH GAS VENT MONITORING REPORT	OR -6800-U	2/15/1997		1/14/1997		0
Enforceable Agreement	REMEDIAL ACTION IMPLEMENTATION PLAN FOR PIT 6	SF -1481-03	2/15/1997			CAT3	0
Enforceable Agreement	TARGET PUBLIC MEETING DATE FOR B850/PITS 3&5	SF -1481-03	2/20/1997			CAT3	0
Enforceable Agreement	SUBMIT FINAL RFI REPORT	SF -1482-11	2/20/1997		2/20/1997	CAT3	0
Enforceable Agreement	SUBMIT RI/RA TO EPA/DEC	CH -2305	2/21/1997		2/21/1997	CAT3	0
Enforceable Agreement	SUBMIT REMEDIAL DESIGN REPORT NO. 4 STATUS REPORT TO REG AGENCIES	SF -1481-01	2/25/1997		2/24/1997	CAT3	0
Enforceable Agreement	S BRP (631-5G) - REV. 0 RFI/RI ASCAD WORK PLA ADDENDUM SUBMITTA	SR -508-AA	2/25/1997		2/24/1997	CAT3	0
Enforceable Agreement	D-AREA BRP - SUBMIT SIGNED ROD TO REGULATORS	SR -508-AA	2/27/1997		2/25/1997	CAT3	0
Enforceable Agreement	F-AREA BRP - SUBMIT SIGNED ROD TO REGULATORS	SR -508-AA	2/27/1997	2/27/1997	2/27/1997	CAT3	0
Enforceable Agreement	SILVERTON ROAD WASTE SITE - FINAL ROD (1)	SR -509-AA	2/27/1997		2/25/1997	CAT3	0
Enforceable Agreement	GRACE ROAD SITE (631-22G) ROD	SR -513-AA	2/27/1997		2/27/1997	CAT3	0
Enforceable Agreement	GUNSITE 113 ACCESS ROAD (631-24G) ROD	SR -513-AA	2/27/1997		2/27/1997	CAT3	0
Enforceable Agreement	GUNSITE 720 RUBBLE PILE (631-16G) ROD	SR -513-AA	2/27/1997		2/27/1997	CAT3	0
Enforceable Agreement	WELL SAMP & ANALYSIS-SUBMIT SLF 4Q96/ANNUAL GW COMPLIANCE REPORT	SR -701-AA	2/27/1997		2/25/1997	CAT3	0
Enforceable Agreement	SUBMIT FINAL DESIGN TO RECORD	CH -2306	2/28/1997	3/28/1997	3/28/1997	CAT3	0
Enforceable Agreement	SUBMIT OU VI RESPONSIVENESS SUMMARY TO EPA/DEC	CH -2310	2/28/1997		2/28/1997	CAT3	0
Enforceable Agreement	OU 5-12 DRAFT RI/FS WORK PLAN TO EPA/IDHW FOR REVIEW & COMMENT	ID -36-EG	2/28/1997	2/28/1997	1/31/1997	CAT3	0
Enforceable Agreement	MSRE SUBMIT FSR FS TO EPA/TDEC - D1	OR -3700-X	2/28/1997		2/28/1997		0
Enforceable Agreement	WAG 22 (2&3) PCSR	OR -5300-U	2/28/1997		2/19/1997		0

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Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	2/28/1997		2/28/1997	CAT1	0
Enforceable Agreement	1996 ANNUAL REPORT	ALKC-1044	3/1/1997		2/28/1997		0
Enforceable Agreement	RCRA ANNUAL REPORT, GROUNDWATER MONITORING DATA	OHFN-4002	3/1/1997		3/1/1997	CAT3	0
Enforceable Agreement	COMPLETE ANNUAL GW RCRA REPORTING	RF -0113	3/1/1997	9/1/1997		CAT1	0
Enforceable Agreement	BPOP (643-2G, -3G, -4G, -8G, -9G, -10G) - RI FIELD START	SR -509-AA	3/3/1997		3/3/1997	CAT3	0
Enforceable Agreement	REV. 1 APP.E, COMMITMENTS FO RFY 98-99 & PROJ ROD ISSUANCE DATES	SR -801-AA	3/3/1997		1/31/1997	CAT3	0
Enforceable Agreement	GUNITE AND ASSOCIATED TANKS, SUBMIT DRAFT GROUP 2 TANKS ROD TO EP	OR -3300-W	3/4/1997	6/6/1997		CAT1	0
Enforceable Agreement	SOUTHERN SECTOR GW REM - SUBMIT PHASE I CORRECTIVE ACTION PLAN #2	SR -516-AA	3/5/1997		3/5/1997	CAT3	0
Enforceable Agreement	K-1070 PLUME - ISSUE EE/CA TO EPA/TDEC FOR REVIEW	OR -4300-U	3/6/1997		3/6/1997		0
Enforceable Agreement	MITCHELL BRANCH - ISSUE EE/CA TO EPA/TDEC FOR REVIEW	OR -4300-U	3/6/1997		3/6/1997		0
Enforceable Agreement	SUBMIT RA WORK PLAN TO EPA/DEC	CH -2306	3/7/1997		3/7/1997	CAT3	0
Enforceable Agreement	UBMIT TO DHEC ANNUAL REPORT ON STATUS OF TANKS REMOVED FROM SRV	SR -31-AA	3/9/1997		3/5/1997	CAT3	0
Enforceable Agreement	K-AREA BPOP (643-1G) REV. 0 PROPOSED PLAN SUBMITTAL	SR -509-AA	3/10/1997		3/10/1997	CAT3	0
Enforceable Agreement	ORD BLDG SEEP BASN-REV. 0 RFI/RI ASCAD WORK PLAN ADDENDUM TO REG	SR -504-AA	3/17/1997		3/13/1997	CAT3	0
Enforceable Agreement	TA-14 Q-SITE AGGRGT FINAL REPORT COMPLETED	ALLA-2002	3/20/1997		10/31/1996	CAT3	0
Enforceable Agreement	TA-12 L-SITE AGGRGT FINAL REPORT COMPLETED	ALLA-2002	3/25/1997		10/31/1996	CAT3	0
Enforceable Agreement	SUBMIT RFI REPORT TO EPA	ALKC-1054	3/26/1997		3/24/1997		0
Enforceable Agreement	UEFPC, IROD ISSUED TO REG FOR REVIEW	OR -2300-W	3/26/1997		1/31/1997		0
Enforceable Agreement	NE PLUME IRA #1, POST-CONSTRUCTION REPORT	OR -5300-U	3/26/1997		1/29/1997		0
Enforceable Agreement	WELL SAMP & ANA-SUBMIT MWMF 4Q96/ANNUAL GW COMPLIANCE REPORT	SR -701-AA	3/27/1997		3/25/1997	CAT3	0
Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	3/28/1997		3/28/1997	CAT1	0
Enforceable Agreement	FFA REGULATORY SCHEDULE SUBMITTAL	OHMB-8001	3/30/1997	3/30/1997		CAT3	0
Enforceable Agreement	WAG 3, RI/FS SCOPING DOCUMENT	OR -5300-U	3/30/1997		3/28/1997		0
Enforceable Agreement	1st Quarter Report Submitted	ALLA-2107	3/31/1997		2/14/1997	CAT3	0
Enforceable Agreement	COMMENCE NWCF CALCINER OPERATIONS	ID -1001-01	3/31/1997	5/19/1997		CAT3	0
Enforceable Agreement	P6 SUBMIT SCHEDULE INCINERATION	ID -4310-01	3/31/1997	3/31/1997	3/12/1997	CAT3	0
Enforceable Agreement	P4 COMMENCE SYSTEMS TESTING REPACKAGING BOOTH	ID -4310-01	3/31/1997	3/31/1997	3/4/1997	CAT3	0
Enforceable Agreement	P6 SUBMIT SCHEDULE INCINERATION	ID -4310-EG	3/31/1997	3/31/1997		CAT3	0
Enforceable Agreement	P4 COMMENCE SYSTEMS TESTING REPACKAGING BOOTH	ID -4310-EG	3/31/1997	3/31/1997		CAT3	0
Enforceable Agreement	ORR IWQP - ORNL ER (CERCLA) MONITORING AND ASSESSMENT REPORT	OR -4300-U	3/31/1997		2/28/1997		0
Enforceable Agreement	PROV WA ST DPT OF ECOL & DPT OF HEALTH SST VENTIL. UPGRADE NEEDS	RL -1100-0	3/31/1997		3/28/1997	CAT3	0
Enforceable Agreement	COMPLETE WRAP MODULE I CONSTRUCTION AND INITIATE OPERATIONS	RL -2220-1	3/31/1997		3/12/1997	CAT3	0
Enforceable Agreement	SUBMIT 1301/1325N CRIB CLOSURE PLAN / CMS	RL -3125-0	3/31/1997		3/5/1997	CAT3	0
Enforceable Agreement	OLD F-AREA SEEPAGE BASIN (904-49G) -ROD TO REGULATORS	SR -506-AA	3/31/1997		3/28/1997	CAT3	0

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Enforceable Agreement	-AREA RETENTION BASIN (281-3F) - REV. 0 COMB. ASCAD DOC. SUB	SR -506-AA	3/31/1997		3/29/1997	CAT3	0
Enforceable Agreement	A-AREA RUBBLE PIT (731-2A) REV. 0 COMBINED ASCAD DOCUMENT SUBMITL	SR -509-AA	3/31/1997		3/31/1997	CAT3	0
Enforceable Agreement	SIX SITE EVALUATION REPORTS SUBMITTAL	SR -701-AA	3/31/1997		3/25/1997	CAT3	0
Enforceable Agreement	WELL SAMP & ANA-SUBMIT F&H AREAS 3Q AND 4Q96 GW COMPLIANCE REPORT	SR -701-AA	3/31/1997		3/26/1997	CAT3	0
Enforceable Agreement	WELL SAMP & ANA-SUBMIT M-AREA 3Q&4Q96/ANNUAL GW COMPLIANCE REPORT	SR -701-AA	3/31/1997		3/25/1997	CAT3	0
Enforceable Agreement	WELL SAMP & ANA-SUBMIT METLAB 3Q&4Q96/ANNUAL GW COMPLIANCE REPORT	SR -701-AA	3/31/1997		3/31/1997	CAT3	0
Enforceable Agreement	L-AREA BRP (131-L) - SUBMIT REV. 0 WORK PLAN TO REGULATORS	SR -508-AA	4/1/1997		3/20/1997	CAT3	0
Enforceable Agreement	L-AREA BRP (131-L) - REV. 0 ASCAD RFI/RI WORK PLAN ADDENDUM SUBMI	SR -508-AA	4/1/1997		3/20/1997	CAT3	0
Enforceable Agreement	L-AREA RUB PIT (131-3L) REV. 0 ASCAD RFI/RI WORKPLAN ADDENDUM SUB	SR -509-AA	4/1/1997		3/20/1997	CAT3	0
Enforceable Agreement	L-AREA RUBBLE PILE (131-3L)-REV.0 ASCADTM RFI/RI WP ADDENDUM SUBM	SR -509-AA	4/1/1997		3/20/1997	CAT3	0
Enforceable Agreement	H RETENTION BASIN (281-3H)REV 0 ASCAD WP SUBMITTAL	SR -506-AA	4/3/1997		4/3/1997	CAT3	0
Enforceable Agreement	WAG 17, D1 PP	OR -5300-U	4/4/1997		4/30/1997		0
Enforceable Agreement	WESTERN SECTOR GW REM - SUBMIT PHASE I CORRECTIVE ACTION PLAN	SR -516-AA	4/5/1997		4/4/1997	CAT3	0
Enforceable Agreement	PA RECEIVES DFT FNL BSLN RMDL STRATEGY RPT (CA)	OHFN-4002	4/7/1997		4/14/1997	CAT1	0
Enforceable Agreement	EPA RECEIVES DFT FNL BSLN RMDL STREATEGY RPT (CA)	OHFN-4002	4/7/1997	4/14/1997		CAT3	0
Enforceable Agreement	K-1070-A B.G. - ISSUE RI/FS RPT TO REG'S FOR REVIEW	OR -4300-U	4/7/1997		4/7/1997		0
Enforceable Agreement	WAGS 1&7, D1 ROD	OR -5300-U	4/8/1997		4/8/1997		0
Enforceable Agreement	BEGIN O&M FOR OU I GROUNDATER REMOVAL ACTION	CH -2310	4/9/1997		12/24/1996	CAT3	0
Enforceable Agreement	DRAFT FINAL INTERIM PROPOSED PLAN - PRIMARY DOCUMENT	ALGJ-1002	4/10/1997			CAT3	0
Enforceable Agreement	-AREA BRP (731-A, -6A)REV. 0 COMBINED ASCAD DOCUMENT SUBMITTAL	SR -508-AA	4/10/1997		4/9/1997	CAT3	0
Enforceable Agreement	CS BRP (631-1G, -3G) - REV. 0 ASCAD WORK PLAN ADDENDUM SUBMITTAL	SR -508-AA	4/10/1997		2/24/1997	CAT3	0
Enforceable Agreement	A-AREA RBBLE PILE (731-6A)-SUBMIT REV. 0 (ASCAD) WORK PLAN TO REG	SR -509-AA	4/10/1997		4/9/1997	CAT3	0
Enforceable Agreement	LASAGNA, D1 PROPOSED PLAN	OR -5300-U	4/18/1997	10/16/1997		CAT1	0
Enforceable Agreement	TA-15 OU# 1086 (AA) DRAFT COMPLETE	ALLA-2002	4/21/1997	8/18/1997		CAT1	0
Enforceable Agreement	SUBMIT CMI PLAN	ALKC-1052	4/22/1997	10/20/1997		CAT3	0
Enforceable Agreement	BCV WATERSHED ROD, FS ISSUED TO REG FOR REVIEW	OR -2300-W	4/22/1997		4/28/1997		0
Enforceable Agreement	DELIVER RD/RA FINAL WORKPLAN TO USEPA	OHFN-4001	4/24/1997		3/7/1997	CAT3	0
Enforceable Agreement	BEGIN OPERATION OF TFD-WEST PTU	SF -1481-01	4/25/1997		4/22/1997	CAT3	0
Enforceable Agreement	SUBMIT CMI DESIGN TO EPA	ALKC-1046	4/28/1997	6/30/1997		CAT3	0
Enforceable Agreement	TA54: MDA G SRF WTR AA DRFT REPRT COMPLT RFI PH1	ALLA-2005	4/28/1997	8/29/1997		CAT1	0
Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	4/28/1997		4/28/1997	CAT1	0
Enforceable Agreement	RECEIVE REGULATORY COMMENTS ON RD4 STATUS REPORT	SF -1481-01	4/28/1997		4/28/1997	CAT3	0
Enforceable Agreement	START OF OSDF CONSTRUCTION	OHFN-4002	4/30/1997		1/29/1997	CAT2	0
Enforceable Agreement	QUARTERLY REPORT - SECOND QUARTER FY 1997	OR -3206	4/30/1997		4/18/1997	CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	NOTIFY TDEC & IDENTIFY SUPPORT FACILITIES	OR -3212	4/30/1997		4/25/1997	CAT3	0
Enforceable Agreement	COMPLETE CONCEPTUAL DESIGN FOR THE INITIAL SST RETRIEVAL SYSTEMS	RL -1210-0	4/30/1997		2/19/1997	CAT3	0
Enforceable Agreement	OBTAIN ECOLOGY DECISION TRTMT OF 183H SOLID.LIQ.	RL -2200-0	4/30/1997		4/30/1997	CAT3	0
Enforceable Agreement	PROVIDE LIST OF COMPREHENSIVE WORK SCOPE TASKS	RL -3110-0	4/30/1997		4/29/1997	CAT3	0
Enforceable Agreement	SUBMIT DRAFT INTERIM REPORT FOR COL RIVER COMPREH IMPACT ASSESSME	RL -3110-0	4/30/1997		4/29/1997	CAT3	0
Enforceable Agreement	SUBMIT DRAFT 100-N AREA ANCILLARY FAC DECOMM ENG EVAL &CA TO ECOL	RL -3600-0	4/30/1997		4/29/1997	CAT3	0
Enforceable Agreement	COMPLETE DEACTIVATION OF THE PUREX PLANT U-CELL/FRACTIONATOR	RL -6622-0	4/30/1997		12/9/1996	CAT3	0
Enforceable Agreement	SUBMIT AN ANNUAL HANFORD LAND DISPOSAL RESTRICTIONS REPORT	RL -7330-0	4/30/1997		4/28/1997	CAT3	0
Enforceable Agreement	WAGS 1&7 DOE ROD SIGNATURE	OR -5300-U	5/1/1997	5/28/1997		CAT2	0
Enforceable Agreement	TA21: AA Draft of Work Plan Complete	ALLA-2001	5/8/1997			CAT3	0
Enforceable Agreement	H-AREA TANK FARM GW OPERABLE UNIT-REV. 0 FOCUSED CMS/FS SUBMITTAL	SR -515-AA	5/9/1997		4/30/1997	CAT3	0
Enforceable Agreement	TA49: AREA 2/COLD CORING AA DRAFT REPT CMPLT PH1	ALLA-2005	5/15/1997	11/12/1997		CAT2	0
Enforceable Agreement	WAG 28, RI/FS WP	OR -5300-U	5/15/1997			CAT3	0
Enforceable Agreement	TA50: MDA C AA DRAFT REPRT CMPLT STAGE 1 RFI PH1	ALLA-2005	5/16/1997			CAT3	0
Enforceable Agreement	CENTRAL SHOPS BURNING/RUBBLE PIT (631-6G) -FINAL ROD	SR -508-AA	5/23/1997			CAT3	0
Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	5/28/1997			CAT1	0
Enforceable Agreement	NEW TNX SEEP BASIN (904-076G, -102G)-REV. 0 RFI/RI & BRA REPORTS	SR -501-AA	5/28/1997			CAT3	0
Enforceable Agreement	OLD TNX SEEP BASIN (904-076G)-REV. 0 RFI/RI & BRA REPORTS SUBMITT	SR -501-AA	5/28/1997			CAT3	0
Enforceable Agreement	TNX BURYING GROUND (643-5G) REV.0 RFI/RI & BRA REPORTS SUBMITTAL	SR -510-AA	5/28/1997			CAT3	0
Enforceable Agreement	TNX GROUNDWATER (082-G) - REV. 0 RFI/RI AND BRA REPORTS SUBMITTAL	SR -517-AA	5/28/1997			CAT3	0
Enforceable Agreement	TA06: -22 SOIL SAM(PART 2)AA DRFT REP CMPLT RFI	ALLA-2005	5/29/1997			CAT3	0
Enforceable Agreement	TA54: MDA G AIR SAM AA DRFT REPRT COMPLT RFI PH1	ALLA-2005	5/29/1997			CAT3	0
Enforceable Agreement	SUBMIT DRAFT FINAL CORRECTIVE MEASURES STUDY FOR REGULATORY REV.	ALPX-1200-AR	5/30/1997	3/31/1998		CAT3	0
Enforceable Agreement	DRAFT-FINAL INTERIM RECORD OF DECISION FOR SEDIMENT	ALGJ-1002	5/31/1997			CAT3	0
Enforceable Agreement	TART INTERIM STABILIZATION OF 2 SINGLE SHELL TANKS	RL -1100-0	5/31/1997			CAT3	0
Enforceable Agreement	SUBMIT A DRAFT COPY OF THE TWRS TANK WASTE ANALYSIS PLAN'S (TWAP)	RL -1130-0	5/31/1997			CAT3	0
Enforceable Agreement	D-AREA OIL SEEPAGE BASIN (631-G) - REV. 0 ROD SUBMITTAL	SR -504-AA	5/31/1997			CAT3	0
Enforceable Agreement	REMEDIAL ACTION IMPLEMENTATION PLAN FOR GSA	SF -1481-03	6/1/1997			CAT3	0
Enforceable Agreement	MISC CHEM BASN/METAL BURN PIT (731-4A, -5A)-REV. 0 CMS/FS SUBMIT	SR -504-AA	6/2/1997			CAT3	0
Enforceable Agreement	D-AREA OIL SEEPAGE BASIN (631-G) REV. 0 COMBINED DOCUMENT SUBMITL	SR -504-AA	6/2/1997			CAT3	0
Enforceable Agreement	MISC CHEM BASN/METAL BURN PIT (731-4A, 05A)-REV. 0 CMS/FS SUBMITL	SR -504-AA	6/2/1997			CAT3	0
Enforceable Agreement	WEST SEC GW REM-SUBMIT (MET LAB) CORRECT ACTION PER	SR -516-AA	6/4/1997			CAT3	0
Enforceable Agreement	SUBMIT X-749/120 FINAL CMS REPORT TO AGENCIES	OR -6300-U	6/6/1997	9/30/1997		CAT2	0
Enforceable Agreement	K-AREA COAL PILE RUNOFF BASIN (189-K) - REV. 0 PROPOSED PLAN SUBM	SR -502-AA	6/9/1997			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	-AREA OIL/CHEMICAL ACID/CAUSTIC BASIN - REV. 0 ROD SUBMITTAL	SR -504-AA	6/9/1997			CAT3	0
Enforceable Agreement	CMP PITS - SUBMITTAL OF PROPOSED PLAN TO REGULATORS	SR -509-AA	6/9/1997			CAT3	0
Enforceable Agreement	SUBMIT FS/PRAP TO EPA/DEC	CH -2305	6/13/1997			CAT3	0
Enforceable Agreement	SUBMIT DRAFT FINAL SEP TO USEPA (CA)	OHFN-4002	6/13/1997	10/15/1997		CAT3	0
Enforceable Agreement	TA21 14.7 Submit AA Ph1 RFI Rpt Draft	ALLA-2001	6/16/1997			CAT3	0
Enforceable Agreement	DRAFT FEASIBILITY STUDY REPORT - PRIMARY DOCUMENT	ALGJ-1002	6/19/1997	7/23/1997		CAT3	0
Enforceable Agreement	DRAFT REMEDIAL INVESTIGATION REPORT - PRIMARY DOCUMENT	ALGJ-1002	6/19/1997	6/19/1997		CAT3	0
Enforceable Agreement	SUBMIT DRAFT FINAL RD4 TO REG. AGENCIES	SF -1481-01	6/27/1997			CAT3	0
Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	6/28/1997			CAT1	0
Enforceable Agreement	2nd Quarter Report Submitted	ALLA-2107	6/30/1997			CAT3	0
Enforceable Agreement	FINALIZE RFIR	ALPX-1216-AR	6/30/1997			CAT3	0
Enforceable Agreement	SUBMIT WERF RCRA PART B PERMIT	ID -4310-01	6/30/1997			CAT3	0
Enforceable Agreement	P5 START REPACKAGING BOOTH OPERATIONS	ID -4310-01	6/30/1997			CAT3	0
Enforceable Agreement	P5 COMMENCE OPS OF LEAD DECONTAMINATION	ID -4310-01	6/30/1997	6/30/1997		CAT2	0
Enforceable Agreement	P3 INITIATE CONSTRUCTION - MACROENCAPSULATION	ID -4310-01	6/30/1997			CAT3	0
Enforceable Agreement	SUBMIT WERF RCRA PART B PERMIT	ID -4310-EG	6/30/1997			CAT3	0
Enforceable Agreement	P5 START REPACKAGING BOOTH OPERATIONS	ID -4310-EG	6/30/1997			CAT3	0
Enforceable Agreement	P5 COMMENCE OPS OF LEAD DECONTAMINATION	ID -4310-EG	6/30/1997	6/30/1997		CAT2	0
Enforceable Agreement	P3 INITIATE CONSTRUCTION - MACROENCAPSULATION	ID -4310-EG	6/30/1997			CAT3	0
Enforceable Agreement	OMPLETE TSCA INCINERATOR NEGOTIATIONS FOR SALT BATH BRICK	OHRM-7200	6/30/1997	6/30/1997		CAT3	0
Enforceable Agreement	COMPLETE TSCA INCINERATOR NEGOTIATIONS - SLOID DIE HEAD RESIDUE	OHRM-7200	6/30/1997	6/30/1997		CAT3	0
Enforceable Agreement	COMPLETE TSCA INCINERATOR NEGOTIATIONS - SALT BATH PADS & GLOVES	OHRM-7200	6/30/1997	6/30/1997		CAT3	0
Enforceable Agreement	COMPLETE TSCA INCINERATOR NEGOTIATIONS - SALT BATH FLOOR SWEEPING	OHRM-7200	6/30/1997	6/30/1997		CAT3	0
Enforceable Agreement	COMPLT TSCA INCIN. NEGOTIAT'N: SOLID PUMP STATION ACCUMULATOR OIL	OHRM-7200	6/30/1997	6/30/1997		CAT3	0
Enforceable Agreement	COMPLT TSCA INCINERATR NEGOTIATIONS-FLOOR STRIPPER CHLOR. SOLVENT	OHRM-7200	6/30/1997	6/30/1997		CAT3	0
Enforceable Agreement	COMPLT TSCA INCINERTR NEGOTIATIONS: SOLID LATHE OIL COOLANT WASTE	OHRM-7200	6/30/1997	6/30/1997		CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF ORGANIC SLUDGES	OR -7305	6/30/1997			CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF REACTIVES/OXIDIZERS	OR -7305	6/30/1997			CAT3	0
Enforceable Agreement	SUBMIT RESULTS OF RAD CONTAMINATION EVALUATION FOR LAB PACKS	OR -8205	6/30/1997			CAT3	0
Enforceable Agreement	SUBMIT RESULTS OF RAD CONTAMINATION EVALUATION OF LIGHT BALLASTS	OR -8205	6/30/1997			CAT3	0
Enforceable Agreement	SUBMIT TO TDEC DRAFT FY 98 TSCAI BURN PLAN AND RESIDUALS MGMT PLN	OR -8205	6/30/1997			CAT3	0
Enforceable Agreement	SUBMIT TO TDEC DRAFT FY 98 TSCAI BURN PLAN AND RESIDUALS MGMT PLN	OR -8205	6/30/1997			CAT3	0
Enforceable Agreement	INITIATE OPERATIONS AT CWC STORAGE FACILITY (W-112)	RL -2200-0	6/30/1997			CAT3	0
Enforceable Agreement	SUBMIT B PLANT SURVEILLANCE & MAINTENANCE (S&M) PLAN	RL -6626-0	6/30/1997			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	COMPLETE REMOVAL OF ORGANIC SOLVENT WASTE FROM THE B PLANT CANYON	RL -6626-0	6/30/1997		3/7/1997	CAT3	0
Enforceable Agreement	FORD BUILDING WASTE SITE (643-11G) - RFI/RI FIELD START	SR -510-AA	6/30/1997			CAT3	0
Enforceable Agreement	SIX SITE EVALUATION REPORTS SUBMITTAL	SR -701-AA	6/30/1997			CAT3	0
Enforceable Agreement	CONSTRUCTION COMPLETE - OU B	ALGJ-1003	7/1/1997	6/9/1998		CAT3	0
Enforceable Agreement	CONSTRUCTION COMPLETE - OU C	ALGJ-1003	7/1/1997	1/1/1998		CAT3	0
Enforceable Agreement	SUBMIT DRAFT TO USEPA-O&M-RAWP (CA)	OHFN-4002	7/1/1997			CAT3	0
Enforceable Agreement	BEGIN SYSTEM OPERATIONS AT THE 100HR-3 OPERATING UNIT	RL -3110-0	7/1/1997			CAT3	0
Enforceable Agreement	SUBMIT TO DHEC THE ANNUAL TANK INSPECTION REPORT	SR -31-AA	7/1/1997			CAT3	0
Enforceable Agreement	OU II CONSTRUCTION START	ALGJ-1001	7/7/1997	5/1/1997		CAT3	0
Enforceable Agreement	K-AREA BRP (131-K) - REV. 0 RFI/RI AND BRA REPORTS SUBMITTAL	SR -508-AA	7/9/1997			CAT3	0
Enforceable Agreement	K-AREA RUBBLE PILE (631-20G) REV. 0 RFI/RI BRA REPORTS SUBMITTAL	SR -509-AA	7/9/1997			CAT3	0
Enforceable Agreement	K-1070 PLUME - ISSUE ACTION MEMORANDUM TO EPA/TDEC FOR REVIEW	OR -4300-U	7/11/1997			CAT3	0
Enforceable Agreement	MITCHELL BRANCH - ISSUE ACTION MEMORNDUM TO EPA/TDEC FOR REVIEW	OR -4300-U	7/11/1997			CAT3	0
Enforceable Agreement	SUBMIT DRAFT TO USEPA-SOIL IMPLEMENT RAWP (CA)	OHFN-4002	7/14/1997			CAT3	0
Enforceable Agreement	WU TITLE I/II: SUBMIT PREFNL DSGN PKG TO EPA (CA)	OHFN-4002	7/14/1997			CAT3	0
Enforceable Agreement	WU: SUBMIT DRAFT RA FINAL WORK PLAN PACKAGE TO EPA	OHFN-4002	7/14/1997			CAT2	0
Enforceable Agreement	WAG 22 (7&30) D1 RI REPORT	OR -5300-U	7/19/1997	7/28/1997		CAT2	0
Enforceable Agreement	DRAFT ROD TO EPA/DEC - 2303 - BNL	CH -2303	7/21/1997			CAT3	0
Enforceable Agreement	NEW RADON TREATMENT SYSTEM AWARD/CONSTRUCITON	OHFN-4003	7/21/1997	10/4/1998		CAT3	0
Enforceable Agreement	TA-3: AA Draft of Work Plan Complete	ALLA-2001	7/24/1997			CAT3	0
Enforceable Agreement	&H GW RE-REQUEST FOR OPERATING PERMIT FOR PHASE 1 CORRECT ACTION	SR -515-AA	7/26/1997			CAT3	0
Enforceable Agreement	F-AREA RETENTION BASIN (281-3F) - ASCAD REV. 1 PROP PLAN SUB	SR -506-AA	7/27/1997			CAT3	0
Enforceable Agreement	WHITE OAK CREEK RECORD OF DECISION, SUBMIT DRAFT FS TO EPA/TDEC F	OR -3300-W	7/28/1997	7/10/1997		CAT3	0
Enforceable Agreement	ISSUE D1 FEASIBILITY STUDY TO EPA/TDEC FOR REVIEW/COMMENT	OR -8350-U	7/28/1997	8/30/1997		CAT2	0
Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	7/28/1997			CAT1	0
Enforceable Agreement	ISSUE RD4	SF -1481-01	7/28/1997			CAT3	0
Enforceable Agreement	K-AREA BINGHAM PUMPS OUTAGE PIT (643-1G) REV. 0 ROD SUBMITTAL	SR -509-AA	7/28/1997			CAT3	0
Enforceable Agreement	H-TANK FARM GROUNDWATER-SUBMIT REV. 0 PROPOSED PLAN TO REGULATORS	SR -515-AA	7/28/1997			CAT3	0
Enforceable Agreement	TA49: AREA 1,3-6,10-12 AA DRAFT REPRT COMPLT PH1	ALLA-2005	7/29/1997			CAT3	0
Enforceable Agreement	L-AREA OIL/CHEMICAL ACID/CAUSTIC BASIN -FINAL ROD (E33) (904-83G)	SR -504-AA	7/30/1997			CAT3	0
Enforceable Agreement	FEAS STUDY FOR TREATMENT OF CALCINED WASTE	ID -1003-01	7/31/1997	7/31/1997		CAT3	0
Enforceable Agreement	QUARTERLY REPORT - THIRD QUARTER FY 1997	OR -3206	7/31/1997			CAT3	0
Enforceable Agreement	RA SURVEILLANCE & MAINTENANCE, ISSUE 3001 CANAL REMOVAL ACTION C	OR -3300-W	7/31/1997	5/19/1997		CAT3	0
Enforceable Agreement	PROVIDE RECOMMENDATION FOR FOLLOW ON WORK TO COL. RIVER IMPACT	RL -3110-0	7/31/1997			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	RESTART THE 200-ZP-2 VAPOR EXTRACTION SYSTEM.	RL -3210-0	7/31/1997			CAT3	0
Enforceable Agreement	-AREA BRP (731-A, -1A)-ASCAD REV. 1 PROPOSED PLAN SUBMITTAL	SR -508-AA	7/31/1997			CAT3	0
Enforceable Agreement	A-AREA RUBBLE PIT (731-2A)-ASCAD REV. 1 PROPOSED PLAN SUBMITTAL	SR -509-AA	7/31/1997			CAT3	0
Enforceable Agreement	WEST SEC GW REM-SUBMIT PHASE I CORRECTIVE ACTION PLAN PER	SR -516-AA	8/4/1997			CAT3	0
Enforceable Agreement	FIVE YEAR REVIEW	SF -1481-01	8/5/1997			CAT3	0
Enforceable Agreement	WU: SUBMIT FINAL RA WORK PLAN PACKAGE TO EPA	OHFN-4002	8/11/1997	11/17/1997		CAT2	0
Enforceable Agreement	WASTE UNITS TITLE I/II: ISSUE FINAL DESIGN PACKAGE TO EPA	OHFN-4002	8/11/1997	11/17/1997		CAT3	0
Enforceable Agreement	COREHOLE 8 PLUME SOURCE, ISSUE FINAL EE/CA TO DOE FOR APPROVAL, D	OR -3300-W	8/13/1997	2/11/1998		CAT2	0
Enforceable Agreement	MSRE SUBMIT FSR PROPOSED PLAN TO EPA/TDEC - D1	OR -3700-X	8/14/1997	8/14/1997		CAT3	0
Enforceable Agreement	ORNL MAIN PLANT INACTIVE TANKS, SUBMIT TANK WC-14 ACTION MEMORAND	OR -3300-W	8/15/1997	9/15/1997		CAT2	0
Enforceable Agreement	WAG 17, D1 ROD	OR -5300-U	8/15/1997	9/10/1997		CAT2	0
Enforceable Agreement	RAIP FOR B850/PITS 3&5	SF -1481-03	8/15/1997			CAT3	0
Enforceable Agreement	K-AREA REAC SEEP BASIN (904-65G) - REV. 0 COMBINED ASCAD DOC. SUB	SR -505-AA	8/18/1997			CAT3	0
Enforceable Agreement	K-1070 PLUME - ISSUE REMOVAL ACTION WP TO REG'S FOR REVIEW	OR -4300-U	8/19/1997			CAT3	0
Enforceable Agreement	MITCHELL BRANCH - ISSUE REMOVAL ACTION WP TO REG'S FOR REVIEW	OR -4300-U	8/19/1997			CAT3	0
Enforceable Agreement	P-AREA BRP (131-P) - REV. 0 RFI/RI ASCAD WORK PLAN ADDENDUM SUBMT	SR -508-AA	8/20/1997			CAT3	0
Enforceable Agreement	WAG 22 (2&3), D1 FS REPORT	OR -5300-U	8/28/1997	11/29/1997		CAT2	0
Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	8/28/1997			CAT1	0
Enforceable Agreement	GUNITE AND ASSOCIATED TANKS, SUBMIT DRAFT GROUP 2 TANKS RD/RAWP	OR -3300-W	8/29/1997	6/17/1997		CAT3	0
Enforceable Agreement	SUBMIT AN ANNUAL UPDATE OF MISCELLANEOUS STREAM INVENTORY	RL -2300-0	8/30/1997			CAT3	0
Enforceable Agreement	COMPLETE WAC-216 PERMIT APPLICATION FOR CAT 3 MISC. STREAMS	RL -2300-0	8/30/1997			CAT3	0
Enforceable Agreement	OU 1-10 DRAFT RI/FS REPORT TO EPA/IDHW FOR REVIEW & COMMENT	ID -28-EG	8/31/1997	8/31/1997		CAT3	0
Enforceable Agreement	COMPLETE CONSTRUCTION FOR W-058	RL -1120-4	8/31/1997			CAT3	0
Enforceable Agreement	SUBMIT TWAP ANNUALLY TO ECOLOGY AND EPA FOR APPROVAL.	RL -1130-0	8/31/1997			CAT3	0
Enforceable Agreement	UBMIT TO EPA & ECOL EVAL OF DEVELOP STATU OF TRITIUM TREAT TECH	RL -2300-0	8/31/1997	7/31/1997		CAT3	0
Enforceable Agreement	COMPLETE THE 300-500 GPM SYSTEM UPGRADE (PHASE III) FOR 200-ZP-1	RL -3210-0	8/31/1997			CAT3	0
Enforceable Agreement	INITIATE REMEDIAL ACTION, 330-FF-1 OPERABLE UNIT	RL -3300-0	8/31/1997			CAT3	0
Enforceable Agreement	VIRTIFICATION PLANT, TITLE II DESIGN, PRE-FINAL	OHFN-4003	9/1/1997	6/10/2002		CAT3	0
Enforceable Agreement	LASAGNA, D1 ROD	OR -5300-U	9/5/1997	3/4/1998		CAT2	0
Enforceable Agreement	C-AREA BURNING/RUBBLE PIT (131-C)-ASCAD REV.1 PROP PLAN SUBMITTAL	SR -508-AA	9/11/1997			CAT3	0
Enforceable Agreement	D-AREA OIL SEEPAGE BASIN (631-G) - ROD	SR -504-AA	9/13/1997			CAT3	0
Enforceable Agreement	C-AREA CPRB (189-C) - REV. 0 PROPOSED PLAN SUBMITTAL	SR -502-AA	9/17/1997			CAT3	0
Enforceable Agreement	COMPLETE REMEDIATION	ALKC-1052	9/18/1997			CAT3	0
Enforceable Agreement	COMPLETE INTEGRITY TESTING ON 199/589 SITE STG TKS NPDES-FFCA	RF -0113	9/19/1997			CAT1	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	WAG 17, DOE ROD SIGNATURE	OR -5300-U	9/22/1997	9/21/1997		CAT3	0
Enforceable Agreement	TA16: A.A PRI RFI REPORT COMPLETE SG 1-8	ALLA-2003	9/26/1997			CAT3	0
Enforceable Agreement	TA33: SG 3/4 A.A RPT CMPLT RFI RPT	ALLA-2003	9/26/1997			CAT3	0
Enforceable Agreement	DOCUMENT SITE'S CWA/NPDES PERMIT COMPLIANCE	RF -0113	9/28/1997			CAT1	0
Enforceable Agreement	DESIGN COMPLETE - OU D	ALGJ-1003	9/30/1997	6/9/1998		CAT3	0
Enforceable Agreement	TA1: AA Draft Complete Agg. N&P RFI Report	ALLA-2001	9/30/1997			CAT3	0
Enforceable Agreement	TA0: Drf Inactive WWTP RFI Rpt to AA Grp 0-2	ALLA-2001	9/30/1997			CAT3	0
Enforceable Agreement	TA0: Sub AA Drft RFI Rpt DP Rd Stg Ar (Ag 0-F)	ALLA-2001	9/30/1997			CAT3	0
Enforceable Agreement	TA21 Submit AA RFI Rpt Drft 21-026(a-c),-013(a)	ALLA-2001	9/30/1997			CAT3	0
Enforceable Agreement	TA-39 (AA) DRAFT REPORT COMPLETE PRS 39-001A-B	ALLA-2002	9/30/1997		3/6/1997	CAT3	0
Enforceable Agreement	3rd Quarter Report Submitted	ALLA-2107	9/30/1997			CAT3	0
Enforceable Agreement	SUBMIT FINAL RFIR TO REGULATORS	ALPX-1230-AR	9/30/1997	7/31/1997		CAT3	0
Enforceable Agreement	SUBMIT SCHEDULE FOR NWCF TREATMENT OF BACKLOG TANK FARM WASTE	ID -1001-01	9/30/1997	9/30/1997		CAT3	0
Enforceable Agreement	OU 3-13 DRAFT RI/FS REPORT TO EPA/IDHW FOR REVIEW AND COMMENT	ID -1204-WN	9/30/1997	9/30/1997		CAT3	0
Enforceable Agreement	OU 7-13 DRAFT RI/FS REPORT TO EPA/IDHW FOR REVIEW & COMMENT	ID -4001	9/30/1997	9/30/1997		CAT3	0
Enforceable Agreement	P6 SUBMIT SCHEDULE FOR LEAD DECON BACKLOG	ID -4310-01	9/30/1997	9/30/1997		CAT2	0
Enforceable Agreement	P3 INITIATE CONSTRUCTION - SIZE/OPEN/SEGREGATION	ID -4310-01	9/30/1997			CAT3	0
Enforceable Agreement	P6 SUBMIT SCHEDULE FOR LEAD DECON BACKLOG	ID -4310-EG	9/30/1997	9/30/1997		CAT2	0
Enforceable Agreement	P3 INITIATE CONSTRUCTION - SIZE/OPEN/SEGREGATION	ID -4310-EG	9/30/1997			CAT3	0
Enforceable Agreement	COMPLETE CHARACTERIZATION OF SALT BATH BRICK	OHRM-7200	9/30/1997	9/30/1997		CAT3	0
Enforceable Agreement	COMPLETE CHARACTERIZATION OF SOLID DIE HEAD RESIDUE	OHRM-7200	9/30/1997	9/30/1997		CAT3	0
Enforceable Agreement	COMPLETE CHARACTERIZATION OF SALT BATH FLOOR SWEEPINGS	OHRM-7200	9/30/1997	9/30/1997		CAT3	0
Enforceable Agreement	COMPLETE CHARACTERIZATION OF SALT BATH PADS AND GLOVES	OHRM-7200	9/30/1997	9/30/1997		CAT3	0
Enforceable Agreement	COMPLETE CHARACTERIZATION OF SOLID LATHE OIL COOLANT WASTE	OHRM-7200	9/30/1997	9/30/1997		CAT3	0
Enforceable Agreement	COMPLETE CHARACTERIZATION OF FLOOR STRIPPER CHLORINATED SOLVENT	OHRM-7200	9/30/1997	9/30/1997		CAT3	0
Enforceable Agreement	COMPLETE CHARACTERIZATION OF SOLID PUMP STATION ACCUMULATOR OIL	OHRM-7200	9/30/1997	9/30/1997		CAT3	0
Enforceable Agreement	RISK CHARACTERIZATION	OR -3206	9/30/1997	4/30/1997		CAT3	0
Enforceable Agreement	WASTE CHARACTERIZATION	OR -3206	9/30/1997	4/30/1997		CAT3	0
Enforceable Agreement	FY 1997 IMPLEMENTATION PLAN	OR -3206	9/30/1997			CAT3	0
Enforceable Agreement	WASTE CHARACTERIZATION WC-19	OR -3206	9/30/1997			CAT2	0
Enforceable Agreement	RISK CHARACTERIZATION FOR WC-19	OR -3206	9/30/1997			CAT2	0
Enforceable Agreement	STRUCTURAL INTEGRITY ASSESSMENT	OR -3206	9/30/1997			CAT3	0
Enforceable Agreement	ANNUAL STATUS REPORT FOR LLLW TANK COMPLIANCE PROGRAM	OR -3206	9/30/1997			CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF 1/2 TANK OF WETF SLUDGE	OR -8205	9/30/1997			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	COMPLETE IMPLEMENTATION OF FY97 TSCAI BURN PLAN	OR -8205	9/30/1997			CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF 130,000 KG OF ORR AQUEOUS MIXED WASTE	OR -8205	9/30/1997			CAT3	0
Enforceable Agreement	TREAT 80,000 KG OF WASTES TO DEMONSTRATE TREATABILITY APPLICATION	OR -8205	9/30/1997			CAT3	0
Enforceable Agreement	DOUBLE-SHELL TANK SPACE EVALUATION	RL -1100-0	9/30/1997			CAT3	0
Enforceable Agreement	TART INTERIM STABILIZATION OF 6 SINGLE SHELL TANKS	RL -1100-0	9/30/1997	12/26/1997		CAT4	0
Enforceable Agreement	ISSUE 40 TCRs IN ACCORDANCE WITH THE APPROVED TCPs.	RL -1130-0	9/30/1997	9/30/1998		CAT5	0
Enforceable Agreement	UBMIT ANNUAL UPDATE SST RETRIEVAL SEQ DOC FOR ECOLOGY APPROVAL	RL -1210-0	9/30/1997			CAT3	0
Enforceable Agreement	SUBMIT ANNUAL PROGRESS RPT ON WT LEAK MONITOR/DETECT & MITIGATION	RL -1210-0	9/30/1997			CAT3	0
Enforceable Agreement	COMPLETE N REACTOR/100N AREA DEACTIVATION	RL -3600-0	9/30/1997	11/3/1997		CAT5	0
Enforceable Agreement	COMPLETE 219-S TANK INTERIM STATUS ACTIONS	RL -7100-2	9/30/1997	4/30/1999		CAT4	0
Enforceable Agreement	CENTRAL SHOPS BURNING/RUBBLE PIT (631-5G) - RFI/RI FIELD START	SR -508-AA	9/30/1997			CAT3	0
Enforceable Agreement	F&H GROUNDWATER ASSESSMENT-SUBMIT SEMI-ANNUAL GW REPORT TO SCDHEC	SR -515-AA	9/30/1997			CAT3	0
Enforceable Agreement	F&H GW REMED-COMPLETE INDUSTRIAL WASTEWATER OPERATING PERMIT APPL	SR -515-AA	9/30/1997			CAT3	0
Enforceable Agreement	SIX SITE EVALUATION REPORTS SUBMITTAL	SR -701-AA	9/30/1997			CAT3	0
Enforceable Agreement	F&H GW ASSESS - SUBMIT SEMI-ANNUAL GROUNDWATER REPORT TO SCDHEC	SR -701-AA	9/30/1997			CAT3	0
Enforceable Agreement	BEGIN SYSTEM OPERATIONS AT THE 100-KR-4 OPERABLE UNIT.	RL -3110-0	10/1/1997			CAT3	0
Enforceable Agreement	REV. 0 APPENDIX C, RCRA/CERCLA UNITS LIST FOR FY 98 SUBMITTAL	SR -801-AA	10/1/1997			CAT3	0
Enforceable Agreement	DRAFT CLOSEOUT REPORT TO EPA/DEC, PHASE III	CH -2303	10/2/1997	10/2/1997		CAT4	0
Enforceable Agreement	BEGIN OPERATION OF BLDG 518 GROUND WATER PTU	SF -1481-01	10/3/1997			CAT3	0
Enforceable Agreement	SOUTH SEC GW REM - SUBMIT PHASE 1 CORRECT ACTION PLAN PER	SR -516-AA	10/5/1997			CAT3	0
Enforceable Agreement	TA73: LA Airport Submit AA RFI Report Draft	ALLA-2001	10/9/1997	12/9/1997		CAT2	0
Enforceable Agreement	(AA) ISSUE IST ADDENDUM PRS 18-003(D)	ALLA-2002	10/10/1997	12/18/1997		CAT2	0
Enforceable Agreement	BIPR Submitted - 4th Quarter	ALLA-2107	10/20/1997			CAT3	0
Enforceable Agreement	FORD BUILDING SEEPAGE BASIN (904-91G) - ASCAD RFI/RI FIELD START	SR -504-AA	10/20/1997			CAT3	0
Enforceable Agreement	COREHOLE 8 PLUME SOURCE; ISSUE FINAL ACTION MEMO TO DOE FOR APPO	OR -3300-W	10/21/1997	4/27/1998		CAT1	0
Enforceable Agreement	F-AREA RETENTION BASIN (281-3F) - ASCAD REV. 1 ROD SUBMITTAL	SR -506-AA	10/23/1997			CAT3	0
Enforceable Agreement	A-AREA BRP (731-A, -1A) - ASCAD REV. 1 ROD SUBMITTAL	SR -508-AA	10/27/1997			CAT3	0
Enforceable Agreement	A-AREA RUBBLE PIT (731-2A)-ASCAD REV. 1 ROD SUBMITTAL	SR -509-AA	10/27/1997			CAT3	0
Enforceable Agreement	ARA II D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	10/30/1997	10/30/1997		CAT3	0
Enforceable Agreement	QUARTERLY REPORT - FOURTH QUARTER FY 1997	OR -3206	10/31/1997			CAT3	0
Enforceable Agreement	BEGIN OPERATION FOR W-030	RL -1120-2	10/31/1997			CAT3	0
Enforceable Agreement	COMPLETE PROJECT W-030 TANK FARM VENTILATION UPGRADES	RL -1120-2	10/31/1997	2/28/1998		CAT5	0
Enforceable Agreement	INITIATE SLUICING RETRIEVAL OF C-106	RL -1210-0	10/31/1997			CAT3	0
Enforceable Agreement	COMPLETE IMPLEMENTATION OF BAT/AKART FOR ALL PHASE II STREAMS	RL -2300-1	10/31/1997			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	COMPLETE IMPLEMENTATION OF BAT/AKART FOR ALL PHASE II LE STREAMS	RL -6626-0	10/31/1997			CAT3	0
Enforceable Agreement	CLOSURE OF HE BURN PITS	SF -1481-03	11/1/1997	9/30/1999		CAT1	0
Enforceable Agreement	TARGET PUBLIC MEETING DATE FOR B832	SF -1481-03	11/1/1997			CAT3	0
Enforceable Agreement	SOUTH SEC GW REM-SUBMIT EVALUATION OF GW FROM BACKGROUND WELLS*	SR -516-AA	11/2/1997			CAT3	0
Enforceable Agreement	L-AREA BRP (731-L) - RFI/RI FIELD START	SR -508-AA	11/3/1997			CAT3	0
Enforceable Agreement	L-AREA RUBBLE PIT (131-3L) RFI/RI FIELD START	SR -509-AA	11/3/1997			CAT3	0
Enforceable Agreement	CS BRP (631-1G, -3G) ASCAD RFI/RI FIELD START	SR -508-AA	11/10/1997			CAT3	0
Enforceable Agreement	A-AREA MISC RUBBLE PILE (731-6A) ASCAD RFI/RI FIELD START	SR -509-AA	11/10/1997			CAT3	0
Enforceable Agreement	TA-35 FINISH RFI REPORT	ALLA-2004	11/12/1997	3/18/1998		CAT2	0
Enforceable Agreement	WAG 3, D1 RI/FS WP	OR -5300-U	11/15/1997	10/26/1997		CAT3	0
Enforceable Agreement	REMEDIA DESIGN/REMEDIAL ACTION FOR PIT 6	SF -1481-03	11/15/1997			CAT3	0
Enforceable Agreement	EV. 0 APP E, COMMITMENT FOR FY 99-00 & PROJ ROD ISSUANCE DATES	SR -801-AA	11/15/1997			CAT3	0
Enforceable Agreement	F-AREA BRP (231-F, -1F, -2F) - REMEDIAL ACTION START	SR -508-AA	11/16/1997			CAT3	0
Enforceable Agreement	Issue Final IWP Update	ALLA-2107	11/19/1997			CAT3	0
Enforceable Agreement	K-AREA COAL PILE RUNOFF BASIN (189-K) - REV. 0 ROD SUBMITTAL	SR -502-AA	11/19/1997			CAT3	0
Enforceable Agreement	C-AREA REAC SEEP BASN(904-066G,-067G,-068G)REV.0 RI ASCAD WP ADD	SR -505-AA	11/19/1997			CAT3	0
Enforceable Agreement	CMP PITS - SUBMITTAL OF ROD	SR -509-AA	11/19/1997			CAT3	0
Enforceable Agreement	AREA 1-II RAWP: SUBMIT DRAFT PKG TO EPA (CA)	OHFN-4002	11/21/1997			CAT3	0
Enforceable Agreement	TITLE I/II: SUBMIT PREFNL DSGN PKG TO EPA (CA)	OHFN-4002	11/21/1997			CAT3	0
Enforceable Agreement	F-AREA RETENTION BASIN (281-3F) - ASCAD ROD	SR -506-AA	11/21/1997			CAT3	0
Enforceable Agreement	COREHOLE 8 PLUME SOURCE, ISSUE DRAFT RmAWP TO EPA/TDEC FOR CMT, D	OR -3300-W	11/24/1997	2/26/1999		CAT1	0
Enforceable Agreement	F&H GW REM - PHASE I CORRECTIVE ACTION SYSTEM START-UP	SR -515-AA	11/25/1997			CAT3	0
Enforceable Agreement	CPP-631/709/734 D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	11/28/1997	11/28/1997		CAT3	0
Enforceable Agreement	A-AREA BRP (731-A, -1A) - ASCAD ROD	SR -508-AA	11/28/1997			CAT3	0
Enforceable Agreement	A-AREA RUBBLE PIT (731-2A) - ASCAD ROD	SR -509-AA	11/28/1997			CAT3	0
Enforceable Agreement	SUBMIT Q3 ASMT FINAL QUADWIDE RFI REPORT TO AGENCIES	OR -6300-U	11/29/1997		12/13/1996		0
Enforceable Agreement	STPI/DRM COMPLETE SHIPMENT OF SODIUM FOR DEACTIVATION	OR -6200-U	11/30/1997	6/1/1998		CAT2	0
Enforceable Agreement	COMPLETE LONG-RANGE UTILIZATION PLAN FOR TVS TO TREAT ORR WASTE	OR -8205	11/30/1997			CAT3	0
Enforceable Agreement	ONCURRENCE OF ADDITIONAL TANK ACQUISITIO	RL -1100-0	11/30/1997			CAT3	0
Enforceable Agreement	FFA PROGRESS REPORT FOR THE FY 97 SUBMITTAL	SR -801-AA	12/2/1997			CAT3	0
Enforceable Agreement	OLD HYDROFRACTURE FACILITY TANKS, ISSUE FINAL RmA WORK PLAN TO DO	OR -3300-W	12/5/1997	11/17/1997		CAT3	0
Enforceable Agreement	C-AREA BURNING/RUBBLE PIT (131-C) - ASCAD REV. 1 ROD SUBMITTAL	SR -508-AA	12/8/1997			CAT3	0
Enforceable Agreement	D-AREA BRP (431-D, -1D) - REMEDIAL ACTION START	SR -508-AA	12/11/1997			CAT3	0
Enforceable Agreement	URIAL GROUND COMPLEX - REV. 0 RFI/RI AND BR REPORT SUBMITTAL	SR -510-AA	12/14/1997			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	REMEDIAL DESIGN/REMEDIAL ACTION FOR GSA	SF -1481-03	12/15/1997			CAT3	0
Enforceable Agreement	K-AREA REACTOR SEEPAGE BASIN (904-65G)-ASCAD REV. 1 PROP PLAN SUB	SR -505-AA	12/16/1997			CAT3	0
Enforceable Agreement	TA54: MDA H&J(CORING) AA DRFT REP COMPLT RFI PH1	ALLA-2005	12/17/1997			CAT3	0
Enforceable Agreement	STPI/X-705MF COMMENCE OPERATIONS ON MICROFILTRATION SYSTEM	OR -6200-U	12/30/1997	12/1/1997		CAT3	0
Enforceable Agreement	REMOVAL ACTION QUARTERLY REPORTS FOR GSA	SF -1481-03	12/30/1997			CAT3	0
Enforceable Agreement	SRL SEP BSIN(904-51G1,904-53G2,904-54G,904-55G)REMED ACTION START	SR -501-AA	12/30/1997			CAT3	0
Enforceable Agreement	4th Quarter Report Submitted	ALLA-2107	12/31/1997			CAT3	0
Enforceable Agreement	REDUCE TANK FARM VOLUME BY 330,000 GALLONS	ID -1001-01	12/31/1997	3/30/1997	1/27/1997	CAT3	0
Enforceable Agreement	P4 COMMENCE SYSTEM TEST MACROENCAPSULATION	ID -4310-01	12/31/1997			CAT3	0
Enforceable Agreement	P2 PROCURE DESIGN/CONSTRUCTION CONTRACT HG RETORT	ID -4310-01	12/31/1997			CAT3	0
Enforceable Agreement	P4 COMMENCE SYSTEM TEST MACROENCAPSULATION	ID -4310-EG	12/31/1997			CAT3	0
Enforceable Agreement	P2 PROCURE DESIGN/CONSTRUCTION CONTRACT HG RETORT	ID -4310-EG	12/31/1997			CAT3	0
Enforceable Agreement	STPI/MERCURY INITIATE SHIPMENT OF MERCURY FOR PROCESSING	OR -6200-U	12/31/1997	12/1/2003		CAT2	0
Enforceable Agreement	SUBMIT Q4 ASMT FINAL QUADWIDE RFI REPORT TO AGENCIES	OR -6300-U	12/31/1997		12/30/1996		0
Enforceable Agreement	SUBMIT RESULTS OF RAD CONTAMINATION EVALUATION OF BATTERIES	OR -8205	12/31/1997			CAT3	0
Enforceable Agreement	SUBMIT RESULTS OF RAD CONTAMINATION EVALUATION OF BERYLLIUM	OR -8205	12/31/1997			CAT3	0
Enforceable Agreement	SUBMIT RESULTS OR RAD CONTAMINATION EVALUATION FOR ELEMENTAL HAZ	OR -8205	12/31/1997			CAT3	0
Enforceable Agreement	SUBMIT RESULT OF RAD CONTAMINATION EVALUATION OF ELEMENTAL MERCUR	OR -8205	12/31/1997			CAT3	0
Enforceable Agreement	SUBMIT RESULTS OF RAD CONTAMINATION EVALUATION OF REACTIVE METALS	OR -8205	12/31/1997			CAT3	0
Enforceable Agreement	INTERIM STORAGE & DISPOSAL ILAW & INTERIM STORAGE IHLW PMP'S	RL -1250-0	12/31/1997			CAT3	0
Enforceable Agreement	INSTALL RCRA GROUNDWTR MONITOR WELLS AT RATE OF UP TO 50 IN CY 97	RL -7340-1	12/31/1997	12/31/2001		CAT5	0
Enforceable Agreement	D-AREA ASH BASIN (489-D) - REV. 0 RFI/RI WORK PLAN SUBMITTAL	SR -502-AA	12/31/1997			CAT3	0
Enforceable Agreement	D-AREA COAL PILE RUNOFF BASIN (489-D)-REV. 0 RFI/RI WORK PLAN SUB	SR -502-AA	12/31/1997			CAT3	0
Enforceable Agreement	SIX SITE EVALUATION REPORTS SUBMITTAL	SR -701-AA	12/31/1997			CAT3	0
Enforceable Agreement	REMOVAL ACTIONS PERFORMED IN FY 97 REPORT SUBMITTAL	SR -801-AA	1/1/1998			CAT3	0
Enforceable Agreement	C-AREA BURNING/RUBBLE PIT (131-C) - ASCAD RO	SR -508-AA	1/7/1998			CAT3	0
Enforceable Agreement	H-TANK FARM GROUNDWATER - SUBMIT REV. 0 ROD TO REGULATORS	SR -515-AA	1/7/1998			CAT3	0
Enforceable Agreement	TA21 16.3 Submit AA Draft Ph1 RFI RPT	ALLA-2001	1/8/1998			CAT3	0
Enforceable Agreement	BIPR Submitted - 1st Quarter	ALLA-2107	1/20/1998			CAT3	0
Enforceable Agreement	MSRE FUEL SALT ROD - D1	OR -3700-X	1/22/1998	1/22/1998		CAT3	0
Enforceable Agreement	RCRA 3016 REPORT	RL -7330-0	1/23/1998			CAT3	0
Enforceable Agreement	WAG 22 (2&3), D1 PP	OR -5300-U	1/24/1998	5/28/1998		CAT1	0
Enforceable Agreement	OLD TNX SEEP BASIN (904-076G) - REV. 0 CMS/FS SUBMITTAL	SR -501-AA	1/26/1998			CAT3	0
Enforceable Agreement	NEW TNX SEEP BASIN (904-076G, -102G) - REV. 0 CMS/FS SUBMITTAL	SR -501-AA	1/26/1998			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	TNX BURYING GROUND (643-5G) - REV. 0 CMS/FS SUBMITTAL	SR -510-AA	1/26/1998			CAT3	0
Enforceable Agreement	TNX GROUNDWATER (082-G) - REV. 0 CMS/FS SUBMITTAL	SR -517-AA	1/26/1998			CAT3	0
Enforceable Agreement	WHITE OAK CREEK RECORD OF DECISION, SUBMIT DRAFT PROPOSED RA PLAN	OR -3300-W	1/27/1998	12/11/1997		CAT3	0
Enforceable Agreement	TA08: 9,40 SOIL SAM AA DRAFT REPRT CMPLT RFI REP	ALLA-2005	1/30/1998			CAT3	0
Enforceable Agreement	QUARTERLY REPORT - FIRST QUARTER FY 1998	OR -3206	1/31/1998			CAT3	0
Enforceable Agreement	MONTHLY GROUND WATER ANALYTICAL DATA REPORTS FOR GSA	SF -1481-03	1/31/1998			CAT3	0
Enforceable Agreement	PRS C-15-010 (AA) REPORT COMPLETE	ALLA-2002	2/9/1998			CAT3	0
Enforceable Agreement	SUBMIT FINAL DRAFT RI TO REGULATORS - 1702 - ANLW	CH -1702	2/11/1998			CAT3	0
Enforceable Agreement	1-07B PHASE B DFT PILOT SCALE WP SENT TO DOE-ID/EPA/IDHW	ID -28-EG	2/11/1998	2/11/1998		CAT3	0
Enforceable Agreement	MISC CHEM BASN/METAL BURN PIT (731-4A, -5A)-REV. 0 ROD SUBMITTAL	SR -504-AA	2/18/1998			CAT3	0
Enforceable Agreement	(AA) REPORT COMPLETE PRS 15-010A	ALLA-2002	2/24/1998			CAT3	0
Enforceable Agreement	C-AREA COAL PILE RUNOFF BASIN (189-C) - REV. 0 ROD SUBMITTAL	SR -502-AA	2/27/1998			CAT3	0
Enforceable Agreement	CROSS SITE TRANSFER SYSTEM OPERATIONAL.	RL -1120-4	2/28/1998			CAT3	0
Enforceable Agreement	COMPLETE PROJECT W-058 REPLACEMENT OF CROSS-SITE TRANSFER SYSTEM.	RL -1120-4	2/28/1998			CAT3	0
Enforceable Agreement	1997 ANNUAL REPORT	ALKC-0002	3/1/1998			CAT3	0
Enforceable Agreement	1997 ANNUAL REPORT	ALKC-1044	3/1/1998			CAT3	0
Enforceable Agreement	STPI/X-705MF COMPLETE PROCESSING OF WASTE BY MICROFILTRATION SYS	OR -6200-U	3/1/1998	3/1/1998		CAT3	0
Enforceable Agreement	SILVERTON ROAD WASTE SITE (731-2A) REMEDIAL ACTION START	SR -509-AA	3/1/1998			CAT3	0
Enforceable Agreement	GRACE ROAD SITE (631-22G) REMEDIAL ACTION START	SR -513-AA	3/2/1998			CAT3	0
Enforceable Agreement	F&H GROUNDWATER ASSESSMENT - SUBMIT ANNUAL GW REPORT TO SCDHEC	SR -515-AA	3/2/1998			CAT3	0
Enforceable Agreement	F&H GW ASSESS - SUBMIT ANNUAL GROUNDWATER REPORT TO SCDHEC	SR -701-AA	3/2/1998			CAT3	0
Enforceable Agreement	U 10-03 DRAFT IA ROD TO EPA/IDHW FOR REVIE AND COMMENT	ID -41-EG	3/3/1998	3/3/1998		CAT3	0
Enforceable Agreement	K-AREA COAL PILE RUNOFF BASIN (189-K) - ROD	SR -502-AA	3/4/1998			CAT3	0
Enforceable Agreement	CMP PITS - FINAL ROD	SR -509-AA	3/4/1998			CAT3	0
Enforceable Agreement	SOUTH SEC GW REM - SUBMIT PHASE I CORRECT ACTION ENG REPORT*	SR -516-AA	3/4/1998			CAT3	0
Enforceable Agreement	ANK FARM DRAFT IMPLEMENTATION PLAN TO EP	OHFN-4001	3/5/1998			CAT3	0
Enforceable Agreement	K-AREA BRP (131-K) - REV. 0 COMBINED ASCAD DOCUMENT SUBMITTAL	SR -508-AA	3/6/1998			CAT3	0
Enforceable Agreement	K-AREA RUBBLE PILE (631-20G)-REV. 0 COMBINED ASCAD DOC SUBMITTAL	SR -509-AA	3/6/1998			CAT3	0
Enforceable Agreement	SUBMIT OF ASSESSMENT FOR NEW REPLACE SYSTEM	SR -31-AA	3/9/1998			CAT3	0
Enforceable Agreement	ANNUAL REPORT ON STATUS OF TANKS BEING REMOVED FROM SERVICE	SR -31-AA	3/9/1998			CAT3	0
Enforceable Agreement	NEW OR REPLACEMENT WASTE TANK SYSTEM COMPONENTS ANNUAL REPORT SUB	SR -801-AA	3/9/1998			CAT3	0
Enforceable Agreement	REMEDIAL ACTION IMPLEMENTATION PLAN FOR HEPA	SF -1481-03	3/14/1998			CAT3	0
Enforceable Agreement	K-AREA REACTOR SEEPAGE BASIN (904-65G)-ASCAD REV. 1 ROD SUBMITTAL	SR -505-AA	3/14/1998			CAT3	0
Enforceable Agreement	TA54: MDA G(DRILL) AA DRFT RFI REP CMPLT RFI PH1	ALLA-2005	3/16/1998			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	(AA) REPORT COMPLETE PRS 36-005	ALLA-2002	3/26/1998			CAT3	0
Enforceable Agreement	BEGIN OPERATION OF TFE NORTH PTU	SF -1481-01	3/27/1998			CAT3	0
Enforceable Agreement	SUBMIT DRAFT FINAL CMS REPORT FOR REGULATORY REVIEW	ALPX-1230-AR	3/30/1998			CAT3	0
Enforceable Agreement	F-AREA CPRB (289-F) - REV. 0 RFI/RI WORK PLAN SUBMITTAL	SR -502-AA	3/30/1998			CAT3	0
Enforceable Agreement	P-AREA BRP (131-P) - ASCAD RFI/RI FIELD START	SR -508-AA	3/30/1998			CAT3	0
Enforceable Agreement	1st Quarter Report Submitted	ALLA-2107	3/31/1998			CAT3	0
Enforceable Agreement	PROCURE CONTRACTS FOR DEBRIS TREATMENT PROCESS	ID -1003-01	3/31/1998	3/31/1998		CAT3	0
Enforceable Agreement	INITIATE CONSTRUCTION OF DEBRIS TREATMENT PROCESS	ID -1003-01	3/31/1998	3/31/1998		CAT3	0
Enforceable Agreement	P6 SUBMIT SCHEDULE FOR STABILIZATION	ID -4310-01	3/31/1998			CAT3	0
Enforceable Agreement	P6-1 TREAT 25% OF CASKS BACKLOG (28.7 M3)	ID -4310-01	3/31/1998			CAT3	0
Enforceable Agreement	P6 SUBMIT SCHEDULE FOR REPACKAGING BOOTH BACKLOG	ID -4310-01	3/31/1998			CAT3	0
Enforceable Agreement	P4 COMMENCE SYSTEM TESTING FOR SIZE/OPEN/SEGREGATION	ID -4310-01	3/31/1998			CAT3	0
Enforceable Agreement	P6 SUBMIT SCHEDULE FOR STABILIZATION	ID -4310-EG	3/31/1998			CAT3	0
Enforceable Agreement	P6-1 TREAT 25% OF CASKS BACKLOG (28.7 M3)	ID -4310-EG	3/31/1998			CAT3	0
Enforceable Agreement	P6 SUBMIT SCHEDULE FOR REPACKAGING BOOTH BACKLOG	ID -4310-EG	3/31/1998			CAT3	0
Enforceable Agreement	P4 COMMENCE SYSTEM TESTING FOR SIZE/OPEN/SEGREGATION	ID -4310-EG	3/31/1998			CAT3	0
Enforceable Agreement	NE PLUME IRA #1, ANNUAL REPORT	OR -5300-U	3/31/1998			CAT3	0
Enforceable Agreement	TART INTERIM STABILIZATION OF 8 SINGLE SHELL TANKS	RL -1100-0	3/31/1998			CAT3	0
Enforceable Agreement	CMPLT EVAL OF ENHANCED SLUDGE WASHING,DETERMINE PROCESS REQUIRE.	RL -1240-0	3/31/1998	3/31/2003		CAT5	0
Enforceable Agreement	CONDUCT BIENNIAL ASSESS. OF INFOR.,DATA ACCESS W/EPA & ECOLOGY	RL -7330-0	3/31/1998			CAT3	0
Enforceable Agreement	SIX SITE EVALUATION REPORTS SUBMITTAL	SR -701-AA	3/31/1998			CAT3	0
Enforceable Agreement	REMEDIAL DESIGN/REMEDIAL ACTION FOR B850/PITS 3&5	SF -1481-03	4/1/1998			CAT3	0
Enforceable Agreement	MAINTENANCE COMPLEX DRAFT IMPLEMENTATION PLAN TO EPA	OHFN-4001	4/2/1998			CAT3	0
Enforceable Agreement	WAGS 1&7, D1 POSTCONSTRUCTION RPT	OR -5300-U	4/3/1998			CAT3	0
Enforceable Agreement	TA40: FIRE.SITE SOIL SAM AA DRAFT COMPLT RFI PH1	ALLA-2005	4/7/1998			CAT3	0
Enforceable Agreement	SLF CLOSURE COMPLETE	SR -511-AA	4/7/1998			CAT3	0
Enforceable Agreement	BEGIN OPERATIONS PHASE III STP UPGRADES	RF -3827	4/11/1998	1/30/1998		CAT3	0
Enforceable Agreement	K-AREA REACTOR SEEPAGE BASIN (904-65G) - ASCAD ROD	SR -505-AA	4/13/1998			CAT3	0
Enforceable Agreement	BIPR Submitted - 2nd Quarter	ALLA-2107	4/20/1998			CAT3	0
Enforceable Agreement	H-TANK FARM GW - SUBMIT SIGNED REV. 1 ROD TO REGULATORS	SR -515-AA	4/22/1998	3/23/1998		CAT3	0
Enforceable Agreement	SUBMIT IM DESIGN TO EPA	ALKC-1048	4/30/1998			CAT3	0
Enforceable Agreement	QUARTERLY REPORT - SECOND QUARTER FY 1998	OR -3206	4/30/1998			CAT3	0
Enforceable Agreement	SUBMIT THE 100HR-3/100KR-4 PERFORMANCE EVALUATION REPORT TO EPA/E	RL -3115-0	4/30/1998			CAT3	0
Enforceable Agreement	SUBMIT AN ANNUAL HANFORD LAND DISPOSAL RESTRICTIONS REPORT	RL -7330-0	4/30/1998			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	TA0: Drf WSP RFI Rpt to AA (0-003,0-012)	ALLA-2001	5/4/1998			CAT3	0
Enforceable Agreement	TA21: Bldg 3&4 Submit AA Draft	ALLA-2001	5/8/1998			CAT3	0
Enforceable Agreement	(AA) REPORT COMPLETE PRS	ALLA-2002	5/8/1998			CAT3	0
Enforceable Agreement	(AA) REPORT COMPLETE PRS	ALLA-2002	5/11/1998			CAT3	0
Enforceable Agreement	GUNSITE 720 RUBBLE PIT (631-16G) REMEDIAL ACTION START	SR -513-AA	5/12/1998			CAT3	0
Enforceable Agreement	GUNSITE 113 ACCESS ROAD (631-24G) REMEDIAL ACTION START	SR -513-AA	5/12/1998			CAT3	0
Enforceable Agreement	C-AREA BURNING/RUBBLE PIT (131-C)-REV. 0 COMB. ASCAD DOC SUBMITTA	SR -508-AA	5/22/1998			CAT3	0
Enforceable Agreement	DRAFT-FINAL PROPOSED PLAN FOR SURFACE AND GROUNDWATER	ALGJ-1002	5/23/1998	6/18/1997		CAT3	0
Enforceable Agreement	TA21 16.5 Submit AA Draft Ph1 RFI Report	ALLA-2001	5/26/1998			CAT3	0
Enforceable Agreement	SUBMIT A DRAFT COPY OF THE TWRS TANK WASTE ANALYSIS PLAN'S (TWAP)	RL -1130-0	5/31/1998			CAT3	0
Enforceable Agreement	COMPLETE DEACTIVATION OF THE B PLANT AQUEOUS MAKE-UP AREA	RL -6626-0	5/31/1998			CAT3	0
Enforceable Agreement	COMPLETE DEACTIVATION OF THE B PLANT LIQUID EFFLUENTS AREA	RL -6626-0	5/31/1998			CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF BULKED SCINTILLATION FLUIDS	OR -8205	6/1/1998			CAT3	0
Enforceable Agreement	PRS 15-007A (AA) REPORT COMPLETE PRS	ALLA-2002	6/3/1998			CAT3	0
Enforceable Agreement	MISC CHEMICAL BASIN/METAL BURN PIT (731-4A, -5A) - ROD	SR -504-AA	6/3/1998			CAT3	0
Enforceable Agreement	(AA) FINAL REPORT COMPLETE PRS 36-004	ALLA-2002	6/9/1998			CAT3	0
Enforceable Agreement	PRS 53-006A,B,C,D,E,F (AA) REPORT COMPLETE	ALLA-2002	6/9/1998			CAT3	0
Enforceable Agreement	TA21: 16.4 Submit AA RFI Report Draft Ph 2	ALLA-2001	6/10/1998			CAT3	0
Enforceable Agreement	SUBMIT DRAFT RI/FS TO REGULATORS - 1702 - ANLW	CH -1702	6/10/1998			CAT3	0
Enforceable Agreement	C-AREA COAL PILE RUNOFF BASIN (189-C) - ROD	SR -502-AA	6/12/1998			CAT3	0
Enforceable Agreement	2nd Quarter Report Submitted	ALLA-2107	6/30/1998			CAT3	0
Enforceable Agreement	SUBMIT DRAFT FINAL CMIPP FOR DOE/TNRCC REVIEW	ALPX-1230-AR	6/30/1998			CAT3	0
Enforceable Agreement	CALCINE REMAINING NON-SODIUM HLLW	ID -1001-01	6/30/1998	5/31/1998		CAT3	0
Enforceable Agreement	CALCINE SODIUM-BEARING DURING NWCF RUN H-4	ID -1001-01	6/30/1998	5/31/1998		CAT3	0
Enforceable Agreement	OU 1-10 DRAFT RI/FS ROD TO EPA/IDHW FOR REVIEW & COMMENT	ID -28-EG	6/30/1998	6/30/1998		CAT3	0
Enforceable Agreement	OU 10-04 DRAFT RI/FS SOW TO EPA/IDHW FOR REVIEW & COMMENT	ID -41-EG	6/30/1998	6/30/1998	11/13/1996	CAT3	0
Enforceable Agreement	P1-SUBMIT PART B PERMIT FOR HG RETORT	ID -4310-01	6/30/1998			CAT3	0
Enforceable Agreement	P5 START MACROENCAPSULATION OPERATIONS	ID -4310-01	6/30/1998			CAT3	0
Enforceable Agreement	P1-SUBMIT PART B PERMIT FOR HG RETORT	ID -4310-EG	6/30/1998			CAT3	0
Enforceable Agreement	P5 START MACROENCAPSULATION OPERATIONS	ID -4310-EG	6/30/1998			CAT3	0
Enforceable Agreement	COMPLETE PACKAGING FOR SHIPMENT OF SALT BATH BRICK	OHRM-7200	6/30/1998	6/30/1998		CAT3	0
Enforceable Agreement	COMPLETE PACKAGING FOR SHIPMENT OF SOLID DIE HEAD RESIDUE	OHRM-7200	6/30/1998	6/30/1998		CAT3	0
Enforceable Agreement	COMPLETE PACKAGING FOR SHIPMENT OF SALT BATH FLOOR SWEEPINGS	OHRM-7200	6/30/1998	6/30/1998		CAT3	0
Enforceable Agreement	COMPLETE PACKAGING FOR SHIPMENT OF SALT BATH PADS AND GLOVES	OHRM-7200	6/30/1998	6/30/1998		CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	COMPLETE PACKAGING FOR SHIPMENT OF SOLID LATHE OIL COOLANT WASTE	OHRM-7200	6/30/1998	6/30/1998		CAT3	0
Enforceable Agreement	COMPLT PCKGING FOR SHIPMET: CHLORINATED/STODDARD SOLVENT (SOLID)	OHRM-7200	6/30/1998	6/30/1998		CAT3	0
Enforceable Agreement	COMPLETE PACKAGE: SHIPMENT OF FLOOR STRIPPER CHLORINATED SOLVENTS	OHRM-7200	6/30/1998	6/30/1998		CAT3	0
Enforceable Agreement	COMPLETE PACKAGING-SHIPMENT OF SOLID PUMP STATION ACCUMULATOR OIL	OHRM-7200	6/30/1998	6/30/1998		CAT3	0
Enforceable Agreement	FY 1998 IMPLEMENTATION PLAN	OR -3206	6/30/1998			CAT3	0
Enforceable Agreement	AWARD CONTRACT FOR PRODUCTION INCREMENT OF RH-TRU SLUDGE	OR -3212	6/30/1998	9/30/1997		CAT5	0
Enforceable Agreement	BETHEL VALLEY WATERSHED RECORD OF DECISION, SUBMIT DRAFT RI/FS RE	OR -3300-W	6/30/1998	5/29/1998		CAT3	0
Enforceable Agreement	SUBMIT DRAFT FY99 TSCAI BURN PLAN AND RESIDUALS MGMT PLAN	OR -8205	6/30/1998			CAT3	0
Enforceable Agreement	SUBMIT DRAFT FY 99 TSCAI BURN PLAN AND RESIDUALS MGMT PLAN	OR -8205	6/30/1998			CAT3	0
Enforceable Agreement	SUBMIT 200-PO-2 WORK PLAN	RL -3200-0	6/30/1998	3/31/2003		CAT5	0
Enforceable Agreement	SUBMIT 216-A-10 CRIB AND 216-A-36B CRIB CLOSURE/POST CLOSURE PLAN	RL -3200-0	6/30/1998	3/31/2003		CAT5	0
Enforceable Agreement	DOCMENT HAZARDOUS SUBST./DANGEROUS WASTES REMAINING IN B PLANT	RL -6626-0	6/30/1998			CAT3	0
Enforceable Agreement	H-AREA CPRB (289-H) - REV. 0 RFI/RI WORK PLAN SUBMITTAL	SR -502-AA	6/30/1998			CAT3	0
Enforceable Agreement	C-AREA REACTOR SEEP BASINS (904-066G,-067G,-068G)-RI FIELD START	SR -505-AA	6/30/1998			CAT3	0
Enforceable Agreement	SIX SITE EVALUATION REPORTS SUBMITTAL	SR -701-AA	6/30/1998			CAT3	0
Enforceable Agreement	ANNUAL TANK INSPECTION REPORT	SR -31-AA	7/1/1998			CAT3	0
Enforceable Agreement	1-07B PHASE B DFT RA RPT SENT TO DOE-ID/DOE-HQ/EPA/IDHW	ID -28-EG	7/2/1998	7/2/1998		CAT3	0
Enforceable Agreement	TITLE I/II: SUBMIT PREFINAL DESIGN PKG TO EPA	OHFN-4002	7/2/1998			CAT3	0
Enforceable Agreement	SUBMIT DRAFT FINAL TO USEPA - AREA 3 RAWP/DESIGN PKG (CA)	OHFN-4002	7/2/1998			CAT3	0
Enforceable Agreement	WEST SEC GW REM-SUBMIT (METLAB) CORRECT ACTION ENG REPORT*	SR -516-AA	7/4/1998			CAT3	0
Enforceable Agreement	K-AREA BRP (131-K) - ASCAD REV. 1 PROPOSED PLAN SUBMITTAL	SR -508-AA	7/6/1998			CAT3	0
Enforceable Agreement	K-AREA RUBBLE PILE (631-20G) ASCAD REV. 1 PROPOSED PLAN SUBMITTAL	SR -509-AA	7/6/1998			CAT3	0
Enforceable Agreement	BURIAL GROUND COMPLEX (643-5G) - REV. 0 CMS/FS SUBMITTAL	SR -510-AA	7/13/1998			CAT3	0
Enforceable Agreement	TA16:: A.A APPROVED CMS PLAN CMS PL	ALLA-2003	7/17/1998	9/17/1998		CAT2	0
Enforceable Agreement	PLANT 5 DRAFT IMPLEMENTATION PLAN TO EPA	OHFN-4001	7/18/1998			CAT3	0
Enforceable Agreement	UEFPC WATERSHED ROD, RI REPORT	OR -2300-W	7/23/1998	10/1/1997		CAT3	0
Enforceable Agreement	WAG 27, ISSUE DRAFT RI REPORT TO EPA/KDEP (D1)	OR -5300-U	7/24/1998	11/22/1998		CAT1	0
Enforceable Agreement	(AA) FINAL REPORT COMPLETE PRS	ALLA-2002	7/27/1998			CAT3	0
Enforceable Agreement	OU 3-13 DRAFT RI/FS ROD TO EPA/IDHW FOR REVIEW & COMMENT	ID -1204-WN	7/31/1998	7/31/1998		CAT3	0
Enforceable Agreement	OU 7-13 DRAFT ROD TO EPA/IDHW FOR REVIEW & COMMENT	ID -4001	7/31/1998	7/31/1998		CAT3	0
Enforceable Agreement	QUARTERLY REPORT - THIRD QUARTER FY 1998	OR -3206	7/31/1998			CAT3	0
Enforceable Agreement	WAG 22 SWMUS 2&3, D1 ROD	OR -5300-U	7/31/1998	11/25/1998		CAT1	0
Enforceable Agreement	SELECT 2 COCO CONTRACTORS & AUTH TO PROCCED WITH PART B WORKS....	RL -1230-0	7/31/1998			CAT3	0
Enforceable Agreement	COMPLETE PUREX/UO3 FACILITY TRANSITION PHASE & INITIATE S&M PHASE	RL -6622-0	7/31/1998			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	DOCUMENT HAZARDOUS UBSTANCES/DANGEROUS WASTES REMAINING IN PUREX	RL -6622-0	7/31/1998			CAT3	0
Enforceable Agreement	COMPLETE SODIUM STORAGE FACILITY STARTUP	RL -6640-0	7/31/1998			CAT3	0
Enforceable Agreement	OLD TNX SEEPAGE BASIN (904-076G)-REV. 0 PROPOSED PLAN SUBMITTAL	SR -501-AA	7/31/1998			CAT3	0
Enforceable Agreement	NEW TNX SEEP BASIN (904-076G, -102G)-REV. 0 PROPOSED PLAN SUBMIT	SR -501-AA	7/31/1998			CAT3	0
Enforceable Agreement	TNX BURYING GROUND (643-5G) REV. 0 PROPOSED PLAN SUBMITTAL	SR -510-AA	7/31/1998			CAT3	0
Enforceable Agreement	TNX GROUNDWATER (082-G) - REV. 0 PROPOSED PLAN SUBMITTAL	SR -517-AA	7/31/1998			CAT3	0
Enforceable Agreement	ARA 1 D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	8/6/1998	8/6/1998		CAT3	0
Enforceable Agreement	CENTRAL SHOPS BURNING/RUBBLE PIT (631-6G) - REMEDIAL ACTION START	SR -508-AA	8/8/1998			CAT3	0
Enforceable Agreement	TAO: Submit Drft Wst Ln RFI Rpt to AA PRS 0-017	ALLA-2001	8/10/1998			CAT3	0
Enforceable Agreement	R-REAC SB(904-57G,-58G,-59G,-60G,-103G,-104G)-REV. 0 RFI/RI/BRA	SR -505-AA	8/12/1998			CAT3	0
Enforceable Agreement	108-4R OVERFLOW BASIN (108-4R) - REV. 0 RFI/RI & BRA REPORT SUBMI	SR -505-AA	8/12/1998			CAT3	0
Enforceable Agreement	-07B PHASE B DFT PILOT SCALE REPORT SENT TO DOE-ID/EPA/IDHW	ID -28-EG	8/19/1998	8/19/1998		CAT3	0
Enforceable Agreement	SUBMIT IM DESIGN TO EPA	ALKC-0002	8/25/1998			CAT3	0
Enforceable Agreement	TA54: MDA H TRIT AIR SAM AA DRF REP CMPL RFI PH1	ALLA-2005	8/28/1998			CAT3	0
Enforceable Agreement	A-AREA CPRB (788-3A) - REV. 0 RFI/RI WORK PLAN SUBMITTAL	SR -502-AA	8/30/1998			CAT3	0
Enforceable Agreement	SIX SITE EVALUATION REPORTS SUBMITTAL	SR -701-AA	8/30/1998			CAT3	0
Enforceable Agreement	OU 7-14 DRAFT RI/FS TO EPA/IDHW FOR REVIEW & COMMENT	ID -4001	8/31/1998	8/31/1998		CAT3	0
Enforceable Agreement	COMPLETE SHIPPING SOLID LATHE OIL COOLANT WASTE	OHRM-7200	8/31/1998	8/31/1998		CAT3	0
Enforceable Agreement	COMPLETE SHIPPING SALT BATH BRICK TO TSCA INCINERATOR	OHRM-7200	8/31/1998	8/31/1998		CAT3	0
Enforceable Agreement	COMPLETE SHIPPING SOLID DIE HEAD RESIDUE TO TSCA INCINERATOR	OHRM-7200	8/31/1998	8/31/1998		CAT3	0
Enforceable Agreement	COMPLETE SHIPPING SALT BATH FLOOR SWEEPINGS TO TSCA INCINERATOR	OHRM-7200	8/31/1998	8/31/1998		CAT3	0
Enforceable Agreement	COMPLETE SHOPPING SALT BATH PADS AND GLOVES TO TSCA INCINERATOR	OHRM-7200	8/31/1998	8/31/1998		CAT3	0
Enforceable Agreement	COMPLETE SHIPPING SOLID PUMP ACCUMULATOR OIL TO TSCA INCINERATOR	OHRM-7200	8/31/1998	8/31/1998		CAT3	0
Enforceable Agreement	COMPLT SHIPPING CHLORINATED/STODDARD SOLVENT(SOLID) TO TSCA INCIN	OHRM-7200	8/31/1998	8/31/1998		CAT3	0
Enforceable Agreement	COMPLT SHIPPING FLOOR STRIPPER CHLOR. SOLVENT TO TSCA INCINERATOR	OHRM-7200	8/31/1998	8/31/1998		CAT3	0
Enforceable Agreement	SUBMIT TWAP ANNUALLY TO ECOLOGY AND EPA FOR APPROVAL.	RL -1130-0	8/31/1998			CAT3	0
Enforceable Agreement	SUBMIT TO EPA & ECOLOGY 618-4 BURIAL GROUND EXC. RPT AS FINAL	RL -3300-0	8/31/1998			CAT3	0
Enforceable Agreement	SUBMIT DATA TO THE NATIONAL IDB	RL -7330-0	8/31/1998			CAT3	0
Enforceable Agreement	Submit FY99 Replan to DOE	ALLA-2107	9/1/1998			CAT3	0
Enforceable Agreement	WESTERN SEC GW REM - SUBMIT PHASE I CA ENG REPORT*	SR -516-AA	9/6/1998			CAT3	0
Enforceable Agreement	A2 AIR STRIPPER - SUBMIT PHASE 3 CORRECTIVE ACTION PLAN	SR -516-AA	9/6/1998			CAT3	0
Enforceable Agreement	TA21: Bldg 2 Submit AA Draft RFI Rpt	ALLA-2001	9/10/1998			CAT3	0
Enforceable Agreement	REMEDIAL ACTION IMPLEMENTATION PLAN FOR THE B832 CANYON	SF -1481-03	9/15/1998			CAT3	0
Enforceable Agreement	WAG 22 SWMU 2&3, DOE ROD SIGNATURE	OR -5300-U	9/17/1998	2/23/1999		CAT1	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	TA73:AA Draft of LA Airport CMS Plan Complete	ALLA-2001	9/18/1998			CAT3	0
Enforceable Agreement	L,P,R-AREA BPOP(643-2G,-3G,-4G,-8G,-9G,-10G)REV. 0 COMB ASCAD DOC	SR -509-AA	9/18/1998			CAT3	0
Enforceable Agreement	WHITE OAK CREEK WATERSHED RECORD OF DECISION, SUBMIT DRAFT ROD TO	OR -3300-W	9/24/1998	6/19/1998		CAT3	0
Enforceable Agreement	REVISE/ISSUE QPP 424	ID -4301-01	9/29/1998	9/29/1998		CAT3	0
Enforceable Agreement	CONSTRUCTION COMPLETE - OU D	ALGJ-1003	9/30/1998	6/9/1998		CAT3	0
Enforceable Agreement	OU 4-13 DRAFT RI/FS REPORT TO EPA/IDHW FOR REVIEW & COMMENT	ID -34-EG	9/30/1998	9/30/1998		CAT3	0
Enforceable Agreement	P5 COMMENCE OPERATIONS FOR MLLW SIZE/OPEN/SEGREGATION	ID -4310-01	9/30/1998			CAT3	0
Enforceable Agreement	P5 COMMENCE OPERATIONS FOR MLLW SIZE/OPEN/SEGREGATION	ID -4310-EG	9/30/1998			CAT3	0
Enforceable Agreement	RISK CHARACTERIZATION	OR -3206	9/30/1998			CAT3	0
Enforceable Agreement	WASTE CHARACTERIZATION	OR -3206	9/30/1998			CAT3	0
Enforceable Agreement	STRUCTURAL INTEGRITY ASSESSMENT	OR -3206	9/30/1998			CAT3	0
Enforceable Agreement	ANNUAL STATUS REPORT FOR LLLW TANK COMPLIANCE PROGRAM	OR -3206	9/30/1998			CAT3	0
Enforceable Agreement	STPI/TSCA SHIP LIQUID WASTE TO K-25 INCINERATOR PER BURN PLAN	OR -6200-U	9/30/1998	9/1/1998		CAT3	0
Enforceable Agreement	WMD/RCRA SHIP BALANCE OF X-701B SLUDGE RCRA/RAD TO ENVIROCARE	OR -6200-U	9/30/1998	9/1/1998		CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF 400,000 KG CNF SLUDGE	OR -8205	9/30/1998			CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF 1/2 TANK OF WETF SLUDGE	OR -8205	9/30/1998			CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF INCINERABLE MIXED WASTE	OR -8205	9/30/1998			CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF 160,000 KG OF ORR AQUEOUS MIXED WASTE	OR -8205	9/30/1998			CAT3	0
Enforceable Agreement	COMPLETE AND SUBMIT STATE OF WORK FOR PRIVATE SECTOR TREATMENT MW	OR -8205	9/30/1998			CAT3	0
Enforceable Agreement	DOUBLE-SHELL TANK SPACE EVALUATION	RL -1100-0	9/30/1998			CAT3	0
Enforceable Agreement	TART INTERIM STABILIZATION OF 9 SINGLE SHELL TANKS	RL -1100-0	9/30/1998			CAT3	0
Enforceable Agreement	PROVIDE W-314 PROJECT CONSTRUCTION SCHEDULE TO ECOLOGY	RL -1100-1	9/30/1998			CAT3	0
Enforceable Agreement	CLOSE ALL UNREVIEWED SAFETY QUESTIONS (USQ) FOR DST'S AND SST'S	RL -1110-0	9/30/1998			CAT3	0
Enforceable Agreement	ISSUE 30 TCRs IN ACCORDANCE WITH THE APPROVED TCPs.	RL -1130-0	9/30/1998	12/31/2003		CAT5	0
Enforceable Agreement	UBMIT ANNUAL UPDATE SST RETRIEVAL SEQ DOC FOR ECOLOGY APPROVAL	RL -1210-0	9/30/1998			CAT3	0
Enforceable Agreement	SUBMIT ANNUAL PROGRESS RPT ON WT LEAK MONITOR/DETECT & MITIGATION	RL -1210-0	9/30/1998			CAT3	0
Enforceable Agreement	COMPLETE MELTER TESTS AND SELECT REFERENC MELTER	RL -1240-0	9/30/1998	9/30/1999		CAT4	0
Enforceable Agreement	SUBMIT AN ANNUAL UPDATE OF MISCELLANEOUS STREAM INVENTORY	RL -2300-0	9/30/1998			CAT3	0
Enforceable Agreement	COMPLETE WAC-216 PERMIT APPLICATION FOR CAT 4 MISC STREAMS	RL -2300-0	9/30/1998			CAT3	0
Enforceable Agreement	INITIATE REMEDIAL ACTION IN THE 100-HR-1 OPERABLE UNIT	RL -3100-0	9/30/1998			CAT3	0
Enforceable Agreement	COMPLETE DISPOSITION ORGANIC SOLVENT WASTE	RL -6626-0	9/30/1998			CAT3	0
Enforceable Agreement	BEGIN OPERATION OF T5475 - GROUND WATER TREATMENT FACILITY	SF -1481-01	9/30/1998			CAT3	0
Enforceable Agreement	D-AREA ASH BASIN (488-D) - RFI/RI FIELD START	SR -502-AA	9/30/1998			CAT3	0
Enforceable Agreement	D-AREA COAL PILE RUNOFF BASIN (489-D) - RFI/RI FIELD START	SR -502-AA	9/30/1998			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	P-AREA COAL PILE RUNOFF BASIN (189-P)-REV. 0 RFI/RI WORK PLAN SUB	SR -502-AA	9/30/1998			CAT3	0
Enforceable Agreement	ROAD A CHEMICAL BASIN (904-111G)-REV. 0 RFI/RI WORK PLAN SUBMITTL	SR -504-AA	9/30/1998			CAT3	0
Enforceable Agreement	F&H GW ASSESS - SUBMIT SEMI-ANNUAL GROUNDWATER REPORT TO SCDHEC	SR -701-AA	9/30/1998			CAT3	0
Enforceable Agreement	SUBMIT FINAL TO USEPA - AREA 3 RA WP (CA)	OHFN-4002	10/2/1998	11/25/1998		CAT3	0
Enforceable Agreement	RI/FS APPROVED - 1702 - ANLW	CH -1702	10/5/1998			CAT3	0
Enforceable Agreement	TA21 AA Draft of CMS Plan Complete	ALLA-2001	10/8/1998			CAT3	0
Enforceable Agreement	OLD HYDROFRACTURE FACILITY POND. ISSUE FINAL EE/CA TO DOE FOR APP	OR -3300-W	10/14/1998	10/14/1998		CAT3	0
Enforceable Agreement	CORRECTIVE MEASURES STUDY	ALKC-1054	10/22/1998			CAT3	0
Enforceable Agreement	WAG 6, FS REPORT	OR -5300-U	10/22/1998			CAT3	0
Enforceable Agreement	SUBMIT PRE-FINAL INSP. RPT. FOR DOE/TNRCC REVIEW	ALPX-1230-AR	10/30/1998			CAT3	0
Enforceable Agreement	OU 5-12 DRAFT RI/FS REPORT TO EPA/IDHW FOR REVIEW & COMMENT	ID -36-EG	10/30/1998	10/30/1998		CAT3	0
Enforceable Agreement	QUARTERLY REPORT - FOURTH QUARTER FY 1998	OR -3206	10/31/1998			CAT3	0
Enforceable Agreement	SUBMIT 200-PO-4 RFI/CMS WORK PLAN	RL -3200-0	10/31/1998	3/31/2004		CAT5	0
Enforceable Agreement	SUBMIT 216-A-37-1 CRIB CLOSURE/POST CLOSURE PLAN TO EPA/ECOLOGY	RL -3200-0	10/31/1998	3/31/2004		CAT5	0
Enforceable Agreement	COMPLETE ACQUISITION OF FACILITIES FOR HANFORD SITE SODIUM	RL -6640-0	10/31/1998			CAT3	0
Enforceable Agreement	SUBMIT HANFORD SITE SODIUM PROJECT MANAGEMENT PLAN TO ECOLOGY	RL -6641-0	10/31/1998			CAT3	0
Enforceable Agreement	WAG 27, D1 FS REPORT	OR -5300-U	11/8/1998	7/21/1999		CAT1	0
Enforceable Agreement	LASAGNA, D1 RD RPT	OR -5300-U	11/22/1998			CAT3	0
Enforceable Agreement	CONSTRUCTION COMPLETE - OU E	ALGJ-1003	11/30/1998	4/7/1998		CAT3	0
Enforceable Agreement	OU 10-04 DRAFT RI/FS WORK PLAN TO EPA/IDHW FOR REVIEW & COMMENT	ID -41-EG	11/30/1998	11/30/1998		CAT3	0
Enforceable Agreement	ONCURRENCE OF ADDITIONAL TANK ACQUISITIO	RL -1100-0	11/30/1998			CAT3	0
Enforceable Agreement	PLANT 3 DRAFT IMPLEMENTATION PLAN TO EPA	OHFN-4001	12/2/1998			CAT3	0
Enforceable Agreement	REMEDIAL DESIGN/REMEDIAL ACTION FOR HEPA	SF -1481-03	12/15/1998			CAT3	0
Enforceable Agreement	WAG 22 (7&30), D1 ROD	OR -5300-U	12/25/1998			CAT3	0
Enforceable Agreement	RENEW CNS 1-13CII CERTIFICATE OF COMP.	ID -4301-01	12/30/1998	12/30/1998		CAT3	0
Enforceable Agreement	1-07B PHASE B DFT RD/RAWP SENT TO DOE-ID/DOEHQ/EPA/IDHW	ID -28-EG	12/31/1998	12/31/1998		CAT3	0
Enforceable Agreement	P3 INITIATE CONSTRUCTION HG RETORT	ID -4310-01	12/31/1998			CAT3	0
Enforceable Agreement	P6 -SUBMIT SCHEDULE FOR MACROENCAPSULATION	ID -4310-01	12/31/1998			CAT3	0
Enforceable Agreement	P3 INITIATE CONSTRUCTION HG RETORT	ID -4310-EG	12/31/1998			CAT3	0
Enforceable Agreement	P6 -SUBMIT SCHEDULE FOR MACROENCAPSULATION	ID -4310-EG	12/31/1998			CAT3	0
Enforceable Agreement	STPI/MERCURY COMPLETE SHIPMENT OF MERCURY FOR PROCESSING	OR -6200-U	12/31/1998	12/31/2004		CAT2	0
Enforceable Agreement	INITIATE PROCESSING OF CH-TRU/TRUM AT WRAP1	RL -2220-1	12/31/1998			CAT3	0
Enforceable Agreement	SUBMIT 200-BP-2 RFI/CMS WORK PLAN	RL -3200-0	12/31/1998	12/31/2006		CAT5	0
Enforceable Agreement	COMPLETE IDENTIFIED INTERIM ACTIONS	RL -6624-0	12/31/1998			CAT3	0

Apr / 1997

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	COMPLETE DECOUPLING OF WESF FROM B PLANT	RL -6626-0	12/31/1998			CAT3	0
Enforceable Agreement	SUBMIT FFTF END POINT CRITERIA DOCUMENT	RL -6640-0	12/31/1998			CAT3	0
Enforceable Agreement	INSTALL RCRA GROUNDWTR MONITOR WELLS AT RATE OF UP TO 50 IN CY 98	RL -7340-1	12/31/1998	12/31/2001		CAT5	0
Enforceable Agreement	WAG 28, RI REPORT	OR -5300-U	1/5/1999			CAT3	0
Enforceable Agreement	DRAFT-FINAL ROD FOR SURFACE WATER AND GROUND WATER	ALGJ-1002	1/11/1999	3/23/1999		CAT3	0
Enforceable Agreement	SUBMIT DRAFT CMIR FOR DOE/TNRCC REVIEW	ALPX-1230-AR	1/31/1999			CAT3	0
Enforceable Agreement	COMPLETE REMEDIATION AND BACKFILL OF 15 WASTE SITES (100-BC-1)	RL -3100-0	1/31/1999			CAT3	0
Enforceable Agreement	OLD HYDROFRACTURE FACILITY POND, ISSUE FINAL ACTION MEMO TO DOE F	OR -3300-W	2/19/1999	1/29/1999		CAT3	0
Enforceable Agreement	WAG 22 (7&30), DOE ROD SIGNATURE	OR -5300-U	2/24/1999			CAT3	0
Enforceable Agreement	MILLSITE PRE-FINAL RESTORATION DESIGN	ALGJ-1001	2/28/1999	2/28/1999		CAT3	0
Enforceable Agreement	SUBMIT 200-IU-3 RFI/CMS WORK PLAN	RL -3200-0	2/28/1999	6/30/2005		CAT5	0
Enforceable Agreement	1998 ANNUAL REPORT	ALKC-0002	3/1/1999			CAT3	0
Enforceable Agreement	1998 ANNUAL REPORT	ALKC-1044	3/1/1999			CAT3	0
Enforceable Agreement	RCRA ANNUAL REPORT, GROUNDWATER MONITORING DATA	OHFN-4002	3/1/1999			CAT3	0
Enforceable Agreement	REMEDIAL DESIGN/REMEDIAL ACTION FOR BB32 CANYON	SF -1481-03	3/1/1999			CAT3	0
Enforceable Agreement	SEWAGE TREATMENT PLANT (STP) DRAFT IMPLEMENTATION PLAN TO EPA	OHFN-4001	3/5/1999			CAT3	0
Enforceable Agreement	WEST SEC GW REM - (MET LAB) CORRECTIVE ACTION SYSTEM START-UP	SR -516-AA	3/5/1999			CAT3	0
Enforceable Agreement	BEGIN OPERATION OF TFE NORTHWEST PTU	SF -1481-01	3/26/1999			CAT3	0
Enforceable Agreement	P6-2 TREAT 50% OF CASK BACKLOG (57.35 M3)	ID -4310-01	3/31/1999			CAT3	0
Enforceable Agreement	P6-2 TREAT 50% OF CASK BACKLOG (57.35 M3)	ID -4310-EG	3/31/1999			CAT3	0
Enforceable Agreement	TART INTERIM STABILIZATION OF 3 SINGLE SHELL TANKS	RL -1100-0	3/31/1999			CAT3	0
Enforceable Agreement	SUBMIT A B PLANT PRECLOSURE WORK PLAN TO ECOLOGY	RL -6626-0	3/31/1999			CAT3	0
Enforceable Agreement	F&H GROUNDWATER ASSESSMENT - SUBMIT ANNUAL GW REPORT TO SCDHEC	SR -515-AA	3/31/1999			CAT3	0
Enforceable Agreement	F&H GW ASSESS - SUBMIT ANNUAL GROUNDWATER REPORT TO SCDHEC	SR -701-AA	3/31/1999			CAT3	0
Enforceable Agreement	PLANT 6 COMPLEX DRAFT IMPLEMENTATION PLAN TO EPA	OHFN-4001	4/2/1999			CAT3	0
Enforceable Agreement	WAG 28, D1 FS REPORT	OR -5300-U	4/6/1999			CAT3	0
Enforceable Agreement	SUBMIT AN ANNUAL HANFORD LAND DISPOSAL RESTRICTIONS REPORT	RL -7330-0	4/30/1999			CAT3	0
Enforceable Agreement	WEST SECTOR GW REM - CORRECTIVE ACTION SYSTEM START-UP	SR -516-AA	5/3/1999			CAT3	0
Enforceable Agreement	WAG 6, PROPOSED PLAN	OR -5300-U	5/11/1999			CAT3	0
Enforceable Agreement	SUBMIT IM REPORT TO EPA	ALKC-1048	5/12/1999			CAT3	0
Enforceable Agreement	WAG 11, RI/FS WP	OR -5300-U	5/15/1999			CAT3	0
Enforceable Agreement	SUBMIT A DRAFT COPY OF THE TWRS TANK WASTE ANALYSIS PLAN'S (TWAP)	RL -1130-0	5/31/1999			CAT3	0
Enforceable Agreement	COMPLETE REMDIATION OF WASTE SITES IN 300-FF-1	RL -3300-0	5/31/1999			CAT3	0
Enforceable Agreement	COMPLETE REMOVAL OF 324 BLDG REC 8-CELL MW AND EQUIPMENT	RL -8410-0	5/31/1999			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	UEFPC SOIL REMEDIATION, ACTION MEMO ISSUED TO REGS FOR REVIEW	OR -2300-W	9/30/1999	8/30/1997		CAT3	0
Enforceable Agreement	UEFPC RA, Y-12 DECOMMISSIONING S&M RMAWP	OR -2700-W	9/30/1999	4/24/1997		CAT3	0
Enforceable Agreement	UEFPC RA, Y-12 DECOMMISSIONING S&M ACTION MEMO	OR -2700-W	9/30/1999		3/5/1997		0
Enforceable Agreement	RA SURVEILLANCE & MAINTENANCE, ISSUE 3001 CANAL REMOVAL ACTION WO	OR -3300-W	9/30/1999		1/31/1997		0
Enforceable Agreement	BETHEL VALLEY WATERSHED RECORD OF DECISION, SUBMIT DRAFT REMEDIAL	OR -3300-W	9/30/1999	12/1/1997		CAT3	0
Enforceable Agreement	OLD HYDROFRACTURE FACILITY POND, ISSUE DRAFT RMAWP TO EPA/TDEC FR	OR -3300-W	9/30/1999	5/30/1999		CAT3	0
Enforceable Agreement	OLD HYDROFRACTURE FACILITY TANKS, ISSUE DRAFT REMOVAL ACTION REPO	OR -3300-W	9/30/1999	6/3/1998		CAT3	0
Enforceable Agreement	ORNL MAIN PLANT INACTIVE TANKS, SUBMIT RMA REPORT TO EPA/TDEC FOR	OR -3300-W	9/30/1999	9/30/1998		CAT3	0
Enforceable Agreement	ORNL MAIN PLANT SURFACE IMPOUNDMENTS, RD/RAWP TO EPA/TDEC FOR COM	OR -3300-W	9/30/1999	6/30/1998		CAT3	0
Enforceable Agreement	ORNL MAIN PLANT SURFACE IMPOUNDMENTS, SUBMIT DRAFT REMEDIAL DRAFT	OR -3300-W	9/30/1999	11/1/1997		CAT3	0
Enforceable Agreement	HRE D&D REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/2/2009		CAT2	0
Enforceable Agreement	MSRE D&D REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/6/2012		CAT2	0
Enforceable Agreement	FISSION PRODUCT PILOT PLANT ACTION MEMORANDUM	OR -3700-X	9/30/1999	1/26/1999		CAT3	0
Enforceable Agreement	METAL RECOVERY FACILITY REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	9/30/2008		CAT2	0
Enforceable Agreement	FISSION PRODUCT PILOT PLANT REMOVAL ACTION REPORT	OR -3700-X	9/30/1999	9/28/2001		CAT2	0
Enforceable Agreement	OW INTENSITY TEST REACTOR REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/4/2009		CAT2	0
Enforceable Agreement	AK RIDGE GRAPHITE REACTOR REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/3/2009		CAT2	0
Enforceable Agreement	AK RIDGE RESEARCH REACTOR REMEDIAL ACTIO REPORT	OR -3700-X	9/30/1999	6/6/2012		CAT2	0
Enforceable Agreement	SHIELDED TRANSFER TANKS D&D REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	9/28/2000		CAT2	0
Enforceable Agreement	OLD HYDROFRACTURE FACILITY D&D REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/5/2001		CAT2	0
Enforceable Agreement	FISSION PRODUCT DEVELOPMENT LABORATORY INACTIVE CELLS REMEDIAL AC	OR -3700-X	9/30/1999	6/4/2008		CAT2	0
Enforceable Agreement	HIGH LEVEL CHEMICAL DEVELOPMENT LABORATORY REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/3/2009		CAT2	0
Enforceable Agreement	OLD HYDROFRACTURE FACILTIY, ISSUE FINAL EE/CA TO DOE FOR APP., D2	OR -3700-X	9/30/1999	7/16/1999		CAT3	0
Enforceable Agreement	K-1401 ACID LINE (SUMPS) EE/CA	OR -4300-U	9/30/1999	6/6/1997		CAT3	0
Enforceable Agreement	K-1070 C/D G PIT AND COMTAMINATED PAD - ROD	OR -4300-U	9/30/1999		2/13/1997		0
Enforceable Agreement	K-1070 C/D G PIT AND CONTAMINATED PAD RDWP	OR -4300-U	9/30/1999	8/17/1997		CAT3	0
Enforceable Agreement	K-901A HOLDING POND/K-1007-P1 POND ACTION MEMO	OR -4300-U	9/30/1999	5/19/1997		CAT3	0
Enforceable Agreement	K-25 SITE-WIDE ROD - ISSUE FS REPORT TO DOE-ORO/HQ FOR REVIEW	OR -4300-U	9/30/1999	1/31/1999		CAT3	0
Enforceable Agreement	PROCESS EQUIPMENT D&D (K-29, 31, & 33) EE/CA	OR -4700-U	9/30/1999		4/7/1997		0
Enforceable Agreement	PROCESS EQUIPMENT D&D (K-29, 31, & 33) ACTION MEMO	OR -4700-U	9/30/1999	7/25/1997		CAT3	0
Enforceable Agreement	WAG 15 SE REPORT	OR -5300-U	9/30/1999		12/19/1996		0
Enforceable Agreement	WAG 23 D1 ROD	OR -5300-U	9/30/1999	5/2/1997		CAT3	0
Enforceable Agreement	WAG 9&11, SE WORKPLAN	OR -5300-U	9/30/1999		2/28/1997		0
Enforceable Agreement	WAG 23 ROD SIGNATURE	OR -5300-U	9/30/1999	5/23/1997		CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	UEFPC SOIL REMEDIATION, ACTION MEMO ISSUED TO REGS FOR REVIEW	OR -2300-W	9/30/1999	8/30/1997		CAT3	0
Enforceable Agreement	UEFPC RA, Y-12 DECOMMISSIONING S&M RMAWP	OR -2700-W	9/30/1999	4/24/1997		CAT3	0
Enforceable Agreement	UEFPC RA, Y-12 DECOMMISSIONING S&M ACTION MEMO	OR -2700-W	9/30/1999		3/5/1997		0
Enforceable Agreement	RA SURVEILLANCE & MAINTENANCE, ISSUE 3001 CANAL REMOVAL ACTION WO	OR -3300-W	9/30/1999		1/31/1997		0
Enforceable Agreement	BETHEL VALLEY WATERSHED RECORD OF DECISION, SUBMIT DRAFT REMEDIAL	OR -3300-W	9/30/1999	12/1/1997		CAT3	0
Enforceable Agreement	OLD HYDROFRACTURE FACILITY POND, ISSUE DRAFT RMAWP TO EPA/TDEC FR	OR -3300-W	9/30/1999	5/30/1999		CAT3	0
Enforceable Agreement	OLD HYDROFRACTURE FACILITY TANKS, ISSUE DRAFT REMOVAL ACTION REPO	OR -3300-W	9/30/1999	6/3/1998		CAT3	0
Enforceable Agreement	ORNL MAIN PLANT INACTIVE TANKS, SUBMIT RMA REPORT TO EPA/TDEC FOR	OR -3300-W	9/30/1999	9/30/1998		CAT3	0
Enforceable Agreement	ORNL MAIN PLANT SURFACE IMPOUNDMENTS, RD/RAWP TO EPA/TDEC FOR COM	OR -3300-W	9/30/1999	6/30/1998		CAT3	0
Enforceable Agreement	ORNL MAIN PLANT SURFACE IMPOUNDMENTS, SUBMIT DRAFT REMEDIAL DRAFT	OR -3300-W	9/30/1999	11/1/1997		CAT3	0
Enforceable Agreement	HRE D&D REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/2/2009		CAT2	0
Enforceable Agreement	MSRE D&D REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/6/2012		CAT2	0
Enforceable Agreement	FISSION PRODUCT PILOT PLANT ACTION MEMORANDUM	OR -3700-X	9/30/1999	1/26/1999		CAT3	0
Enforceable Agreement	METAL RECOVERY FACILITY REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	9/30/2008		CAT2	0
Enforceable Agreement	FISSION PRODUCT PILOT PLANT REMOVAL ACTION REPORT	OR -3700-X	9/30/1999	9/28/2001		CAT2	0
Enforceable Agreement	OW INTENSITY TEST REACTOR REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/4/2009		CAT2	0
Enforceable Agreement	AK RIDGE GRAPHITE REACTOR REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/3/2009		CAT2	0
Enforceable Agreement	AK RIDGE RESEARCH REACTOR REMEDIAL ACTIO REPORT	OR -3700-X	9/30/1999	6/6/2012		CAT2	0
Enforceable Agreement	SHIELDED TRANSFER TANKS D&D REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	9/28/2000		CAT2	0
Enforceable Agreement	OLD HYDROFRACTURE FACILITY D&D REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/5/2001		CAT2	0
Enforceable Agreement	FISSION PRODUCT DEVELOPMENT LABORATORY INACTIVE CELLS REMEDIAL AC	OR -3700-X	9/30/1999	6/4/2008		CAT2	0
Enforceable Agreement	HIGH LEVEL CHEMICAL DEVELOPMENT LABORATORY REMEDIAL ACTION REPORT	OR -3700-X	9/30/1999	6/3/2009		CAT2	0
Enforceable Agreement	OLD HYDROFRACTURE FACILTIY, ISSUE FINAL EE/CA TO DOE FOR APP., D2	OR -3700-X	9/30/1999	7/16/1999		CAT3	0
Enforceable Agreement	K-1401 ACID LINE (SUMPS) EE/CA	OR -4300-U	9/30/1999	6/6/1997		CAT3	0
Enforceable Agreement	K-1070 C/D G PIT AND COMTAMINATED PAD - ROD	OR -4300-U	9/30/1999		2/13/1997		0
Enforceable Agreement	K-1070 C/D G PIT AND CONTAMINATED PAD RDWP	OR -4300-U	9/30/1999	8/17/1997		CAT3	0
Enforceable Agreement	K-901A HOLDING POND/K-1007-P1 POND ACTION MEMO	OR -4300-U	9/30/1999	5/19/1997		CAT3	0
Enforceable Agreement	K-25 SITE-WIDE ROD - ISSUE FS REPORT TO DOE-ORO/HQ FOR REVIEW	OR -4300-U	9/30/1999	1/31/1999		CAT3	0
Enforceable Agreement	PROCESS EQUIPMENT D&D (K-29, 31, & 33) EE/CA	OR -4700-U	9/30/1999		4/7/1997		0
Enforceable Agreement	PROCESS EQUIPMENT D&D (K-29, 31, & 33) ACTION MEMO	OR -4700-U	9/30/1999	7/25/1997		CAT3	0
Enforceable Agreement	WAG 15 SE REPORT	OR -5300-U	9/30/1999		12/19/1996		0
Enforceable Agreement	WAG 23 D1 ROD	OR -5300-U	9/30/1999	5/2/1997		CAT3	0
Enforceable Agreement	WAG 9&11, SE WORKPLAN	OR -5300-U	9/30/1999		2/28/1997		0
Enforceable Agreement	WAG 23 ROD SIGNATURE	OR -5300-U	9/30/1999	5/23/1997		CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	WAG 9 & 11 SE REPORT	OR -5300-U	9/30/1999	9/26/1997		CAT3	0
Enforceable Agreement	C-746-S&T ASSESSMENT REPORT	OR -5300-U	9/30/1999		2/28/1997		0
Enforceable Agreement	WAG 23 D3 PROPOSED PLAN	OR -5300-U	9/30/1999	2/7/1997		CAT3	0
Enforceable Agreement	NORTHEAST PLUME IRA1 O&M PLAN	OR -5300-U	9/30/1999		11/30/1996		0
Enforceable Agreement	NW PLUME IRA #1, ANNUAL REPORT	OR -5300-U	9/30/1999		12/1/1996		0
Enforceable Agreement	BACKGROUND SOILS PROJECT REPORT	OR -5300-U	9/30/1999		3/26/1997		0
Enforceable Agreement	WAG 15 RCRA PERMIT MODIFICATION	OR -5300-U	9/30/1999	9/15/1997		CAT3	0
Enforceable Agreement	C-746-S&T ASSESSMENT PLAN IMPLEMENTATION	OR -5300-U	9/30/1999		12/18/1996		0
Enforceable Agreement	TPI/TSCA COMPLETE SHIPMENTS OF TSCA WASTE INVENTORY	OR -6200-U	9/30/1999	9/1/1999		CAT3	0
Enforceable Agreement	TSCA - INITIATE TRANSFORMER CAPACITOR OIL SHIPMENTS FY00	OR -6200-U	9/30/1999	9/1/1999		CAT3	0
Enforceable Agreement	STPI/TSCA SHIP LIQUID WASTE TO K-25 INCINERATOR PER BURN PLAN	OR -6200-U	9/30/1999	9/1/1999		CAT3	0
Enforceable Agreement	X-344A AMENDED CLOSURE PLAN	OR -6300-U	9/30/1999		11/26/1996		0
Enforceable Agreement	COMPLETE TREATMENT OF 1/2 TANK OF WETF SLUDGE	OR -8205	9/30/1999			CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF AQUEOUS WASTE INVENTORY	OR -8205	9/30/1999			CAT3	0
Enforceable Agreement	SUBMIT REVISED PLAN AND SCHEDULE FO COMPLETING TREATMENT OF MW	OR -8205	9/30/1999			CAT3	0
Enforceable Agreement	ORR STRATEGY/SITE MANAGEMENT PLAN	OR -8300-U	9/30/1999		3/15/1997		0
Enforceable Agreement	ORR STRATEGY/SITE MANAGEMENT PLAN	OR -8300-U	9/30/1999	3/15/1998		CAT3	0
Enforceable Agreement	ORR COMMUNITY RELATIONS/PUBLIC INV. PLAN	OR -8300-U	9/30/1999		1/15/1997		0
Enforceable Agreement	ORR STATEGY/SITE MANAGEMENT PLAN MAP	OR -8300-U	9/30/1999	3/15/1999		CAT3	0
Enforceable Agreement	ORR COMMUNITY RELATIONS/PUBLIC INV. PLAN	OR -8300-U	9/30/1999	11/15/1998		CAT3	0
Enforceable Agreement	ORR COMMUNITY RELATIONS/PUBLIC INV. PLAN	OR -8300-U	9/30/1999	3/15/1998		CAT3	0
Enforceable Agreement	ISSUE D1 RECORD OF DECISION	OR -8350-U	9/30/1999	4/15/1998		CAT3	0
Enforceable Agreement	ISSUE D1 REMEDIAL DESIGN REVIEW	OR -8350-U	9/30/1999	2/1/1999		CAT3	0
Enforceable Agreement	ISSUE D1 PROPOSED PLAN TO EPA/TDEC FOR REVIEW/COMMENT	OR -8350-U	9/30/1999	10/30/1997		CAT3	0
Enforceable Agreement	CLINCH RIVER/POPLAR CREEK REMEDIAL ACTION REPORT	OR -9300-W	9/30/1999	9/8/1997		CAT3	0
Enforceable Agreement	DOUBLE-SHELL TANK SPACE EVALUATION	RL -1100-0	9/30/1999			CAT3	0
Enforceable Agreement	TART INTERIM STABILIZATION OF 2 SINGLE SHELL TANKS	RL -1100-0	9/30/1999			CAT3	0
Enforceable Agreement	ISSUE TANK CHARACTERIZATION REPORTS (TCRs)	RL -1130-0	9/30/1999	9/30/2004		CAT5	0
Enforceable Agreement	ISSUE 14 TCRs IN ACCORDANCE WITH THE APPROVED TCPs.	RL -1130-0	9/30/1999	9/30/2004		CAT5	0
Enforceable Agreement	RESOLVE NUCLEAR CRITICALITY SAFETY ISSUE	RL -1200-0	9/30/1999			CAT3	0
Enforceable Agreement	UBMIT ANNUAL UPDATE SST RETRIEVAL SEQ DOC FOR ECOLOGY APPROVAL	RL -1210-0	9/30/1999			CAT3	0
Enforceable Agreement	SUBMIT ANNUAL PROGRESS RPT ON WT LEAK MONITOR/DETECT & MITIGATION	RL -1210-0	9/30/1999			CAT3	0
Enforceable Agreement	INITIATE TREATMENT OF CH-LLMW	RL -2200-0	9/30/1999			CAT3	0
Enforceable Agreement	COMPLETE T PLANT TANK ACTIONS	RL -2320-2	9/30/1999			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast			
Enforceable Agreement	COMPLETE REMEDIATION ADN BACKFILL OF 15 WASTE SITES 100-DR-1 OP U	RL -3100-0	9/30/1999			CAT3	0
Enforceable Agreement	COMPLETE DEACTIVATION OF THE B PLANT CANYON	RL -6626-0	9/30/1999			CAT3	0
Enforceable Agreement	COMPLETE B PLANT FACILITY TRANSITION & INITIATE THE S&M PHASE	RL -6626-0	9/30/1999			CAT3	0
Enforceable Agreement	INTERIM STATUS DANGEROUS WASTE TANK SYSTEMS HANFORD FEDERAL	RL -7330-0	9/30/1999			CAT3	0
Enforceable Agreement	BEGIN OPERATION OF TFE	SF -1481-01	9/30/1999			CAT6	0
Enforceable Agreement	F&H GROUNDWATER ASSESSMENT-SUBMIT SEMI-ANNUAL GW REPORT TO SCDHEC	SR -515-AA	9/30/1999			CAT3	0
Enforceable Agreement	WEST SEC GW REM-REQUEST (METLAB)OPERATING PERMIT FOR CA TREAT SYS	SR -516-AA	10/4/1999			CAT3	0
Enforceable Agreement	PLANT 1 PHASE II DRAFT IMPLEMENTATION PLAN TO EPA	OHFN-4001	10/6/1999			CAT3	0
Enforceable Agreement	SUBMIT IM REPORT TO EPA	ALKC-0002	10/25/1999			CAT3	0
Enforceable Agreement	SUBMIT 200-PO-5 RFI/CMS WORK PLAN	RL -3200-0	10/31/1999	12/31/2004		CAT5	0
Enforceable Agreement	SUBMIT 207-A RETENTION BASIN CLOSURE/POSTCLOSURE PLAN	RL -3200-0	10/31/1999	12/31/2004		CAT5	0
Enforceable Agreement	ROD APPROVED - 1702 - ANLW	CH -1702	11/3/1999			CAT3	0
Enforceable Agreement	SOUTHERN SECTOR GW REM - CORRECTIVE ACTION SYSTEM START-UP	SR -516-AA	11/3/1999			CAT3	0
Enforceable Agreement	SUBMIT SCOPE TO ANL-W - 1702	CH -1702	11/24/1999			CAT3	0
Enforceable Agreement	ONCURRENCE OF ADDITIONAL TANK ACQUISITIO	RL -1100-0	11/30/1999			CAT3	0
Enforceable Agreement	WEST SEC GW REM-REQUEST OPERATING PERMIT FOR PHASE I CA TREAT SYS	SR -516-AA	12/4/1999			CAT3	0
Enforceable Agreement	SUBMIT CONFIRMATION STUDY TO EPA	ALKC-1038	12/6/1999			CAT3	0
Enforceable Agreement	GENERAL SUMP COMP DRAFT IMPLEMENTATION PLN TO EPA	OHFN-4001	12/20/1999			CAT3	0
Enforceable Agreement	IDENTIFY RH IMMOBILIZATION FACILITY REQUIREMENTS	ID -1003-01	12/31/1999	12/31/1999		CAT3	0
Enforceable Agreement	NEGOTIATE PLAN AND SCHEDULE FOR CALCINED WASTE TREATMENT	ID -1008-01	12/31/1999	12/31/1999		CAT3	0
Enforceable Agreement	STP/INCINERATION DETERMINE ADAPTATION NEED FOR TREATMENT TECHNOL	OR -6200-U	12/31/1999	12/1/1999		CAT3	0
Enforceable Agreement	COMPL ALL 100 AREA OU PRE-ROD SITE INVESTIGATION-APPROVED WP	RL -3100-0	12/31/1999	9/30/1999		CAT3	0
Enforceable Agreement	COMPLETE ALL 300 AREA OU PRE ROD SITE INVESTIGATIONS	RL -3300-0	12/31/1999	9/30/1999		CAT3	0
Enforceable Agreement	SUBMIT SODIUM STORAGE FACILITY & SODIUM REACTION FACIL CLOSURE PL	RL -6640-0	12/31/1999			CAT3	0
Enforceable Agreement	INSTALL RCRA GROUNDWATER MONITORING WELLS	RL -7340-1	12/31/1999			CAT3	0
Enforceable Agreement	INSTALL RCRA GROUNDWTR MONITOR WELLS AT RATE OF UP TO 50 IN CY 99	RL -7340-1	12/31/1999	12/31/2001		CAT5	0
Enforceable Agreement	REMEDIAL DESIGN/REMEDIAL ACTION FOR B850 COMPLEX OU	SF -1481-03	1/1/2000			CAT6	0
Enforceable Agreement	RAIP FOR B850 COMPLEX OU	SF -1481-03	1/15/2000			CAT6	0
Enforceable Agreement	PILOT PLANT COMPLEX DRAFT IMPLEMENTATION PLAN TO EPA	OHFN-4001	1/17/2000			CAT3	0
Enforceable Agreement	1-07B PHASE C DFT RD/RAWP SENT TO DOE-ID/DOE-HQ/EPA/IDHW	ID -28-EG	2/2/2000	2/2/2000		CAT3	0
Enforceable Agreement	SUBMIT 200-SO-1 RFI/CMS WORK PLAN	RL -3200-0	2/28/2000	12/31/2006		CAT5	0
Enforceable Agreement	SUBMIT 241-CX TANK SYSTEM CLOSURE/POSTCLOSURE PLAN	RL -3200-0	2/28/2000	12/31/2006		CAT5	0
Enforceable Agreement	TANK 8 READY FOR SLUDGE REMOVAL (BATCH #2A)	SR -314-LI	2/29/2000			CAT3	0
Enforceable Agreement	1999 ANNUAL REPORT	ALKC-0002	3/1/2000			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	1999 ANNUAL REPORT	ALKC-1044	3/1/2000			CAT3	0
Enforceable Agreement	P5 COMMENCE OPERATION - HG RETORT	ID -4310-01	3/31/2000			CAT3	0
Enforceable Agreement	P5 COMMENCE OPERATION - HG RETORT	ID -4310-EG	3/31/2000			CAT3	0
Enforceable Agreement	COMPLETE FFTF SODIUM DRAIN	RL -6640-0	3/31/2000			CAT3	0
Enforceable Agreement	CONDUCT BIENNIAL ASSESS. OF INFO. AND DATA ACCESS NEEDS EPA&ECOLO	RL -7330-0	3/31/2000			CAT3	0
Enforceable Agreement	FILLED COAL ASH POND/UPPER MCCOY BRANCH REMEDIAL ACTION REPORT	OR -2300-W	4/1/2000	5/15/1997		CAT3	0
Enforceable Agreement	SUBMIT AN ANNUAL HANFORD LAND DISPOSAL RESTRICTIONS REPORT	RL -7330-0	4/30/2000			CAT3	0
Enforceable Agreement	SOUTH SECTOR GW REM - SUBMITTAL OF PHASE 2 CORRECTIVE ACTION PLAN	SR -516-AA	5/3/2000			CAT3	0
Enforceable Agreement	SUBMIT CONFIRMATION STUDY TO EPA	ALKC-0002	6/15/2000			CAT3	0
Enforceable Agreement	SUBMIT CONFIRMATION STUDY TO EPA	ALKC-1046	6/15/2000			CAT3	0
Enforceable Agreement	P6 SUBMIT SCHEDULE FOR HG RETORT	ID -4310-01	6/30/2000			CAT3	0
Enforceable Agreement	P6 SUBMIT SCHEDULE FOR HG RETORT	ID -4310-EG	6/30/2000			CAT3	0
Enforceable Agreement	STPI/LABPACK INITIATE SHIPMENT OF LAB WASTES FOR TREATMENT	OR -6200-U	6/30/2000	6/1/2000		CAT3	0
Enforceable Agreement	TART CONSTRUCTION FOR UPGRADES IN THE 2N TANK FARM	RL -1100-1	6/30/2000			CAT3	0
Enforceable Agreement	SUBMIT TRU/TRUM PMP TO ECOLOGY	RL -2200-0	6/30/2000			CAT3	0
Enforceable Agreement	TAN/TSF D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	7/14/2000	7/14/2000		CAT3	0
Enforceable Agreement	OU 10-04 DRAFT RI/FS REPORT TO EPA/IDHW FOR REVIEW & COMMENT	ID -41-EG	7/31/2000	7/31/2000		CAT3	0
Enforceable Agreement	PREPARE SUBMITTAL TO THE NATIONAL IDB	RL -7330-0	8/29/2000			CAT3	0
Enforceable Agreement	* FUTURE INCIN-SUBMITTAL OF PLAN FOR TREATMENT OF WASTE STREAM	OR -6200-U	9/29/2000			CAT3	0
Enforceable Agreement	COMMENCE DEBRIS TREATMENT SYSTEM OPERATION	ID -1001-01	9/30/2000	9/30/2000		CAT3	0
Enforceable Agreement	SUBMIT SCHEDULE FOR SOLID MIXED LLW DEBRIS TREATMENT BACKLOG	ID -1001-01	9/30/2000	9/30/2000		CAT3	0
Enforceable Agreement	* SHIP LIQUID WASTE TO K-25 INCINERATOR PER BURN PLAN	OR -6200-U	9/30/2000			CAT3	0
Enforceable Agreement	TSCA - COMPLETE TRANSFORMER OIL SHIPMENTS FOR FY00	OR -6200-U	9/30/2000	9/1/2000		CAT3	0
Enforceable Agreement	* CARBON REGEN - INITIATE CONSTRUCTION NECESSARY FOR VENDOR OPS	OR -6200-U	9/30/2000			CAT3	0
Enforceable Agreement	STPI/INCINERATION - SUBMIT PLAN FOR TREATMENT OF WASTE STREAMS	OR -6200-U	9/30/2000	9/1/2000		CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF 1/2 TANK OF WETF SLUDGE	OR -8205	9/30/2000			CAT3	0
Enforceable Agreement	DOUBLE-SHELL TANK SPACE EVALUATION	RL -1100-0	9/30/2000			CAT3	0
Enforceable Agreement	COMPLETE SALT WELL PUMPING OF SINGLE SHELL TANKS	RL -1100-0	9/30/2000			CAT3	0
Enforceable Agreement	COMPLETE SINGLE-SHELL TANK INTERIM STABILIZATION	RL -1100-0	9/30/2000			CAT3	0
Enforceable Agreement	SUBMIT ANNUAL UPDATE OF SST RETRIEVAL SEQ DOC FOR ECOLOGY APPROV	RL -1210-0	9/30/2000			CAT3	0
Enforceable Agreement	SUBMIT ANNUAL PROGRESS RPT ON WT LEAK MONITOR/DETECT & MITIGATION	RL -1210-0	9/30/2000			CAT3	0
Enforceable Agreement	COMP CONST OF CH TRU/TRUM RETRIEVAL FACILITY	RL -2200-0	9/30/2000			CAT3	0
Enforceable Agreement	SANITARY LANDFILL GW - RCRA PART B RENEWAL	SR -518-AA	10/1/2000			CAT3	0
Enforceable Agreement	LIQUID STOR COMPLEX DRAFT IMPLEMENTATION PLN TO EPA	OHFN-4001	10/4/2000			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	F&H GW REM - SUBMIT PHASE II CORRECTIVE ACTION PLAN	SR -515-AA	10/26/2000			CAT3	0
Enforceable Agreement	COMPLETE REMEDIATION/BACKFILL OF 37 WASTE SITES 100-BC/DR/HR-1	RL -3100-0	10/31/2000	9/30/1999		CAT3	0
Enforceable Agreement	ISSUE D1 ROD (WAG 3)	OR -5300-U	11/1/2000	11/4/2000		CAT2	0
Enforceable Agreement	WEST SEC GW REM - SUBMIT PHASE 2 CORRECTIVE ACTION PLAN	SR -516-AA	11/3/2000			CAT3	0
Enforceable Agreement	AREA 4/5 SUBMIT PREFINAL DESIGN TO EPA	OHFN-4002	11/15/2000			CAT3	0
Enforceable Agreement	D&D, WASTE MANAGEMENT, TITLE II DESIGN, PRE-FINAL	OHFN-4003	12/7/2000			CAT3	0
Enforceable Agreement	DMIN COMPLEX DRAFT IMPLEMENTATION PLN TO EPA	OHFN-4001	12/18/2000			CAT3	0
Enforceable Agreement	REMOVE 718 REMAINING UNITS TO CPP-666*	ID -1010-01	12/31/2000	9/30/1998		CAT3	0
Enforceable Agreement	REMOVE REMAINING FHU FROM CPP-603 TO CPP-666 OR DRY STORAGE	ID -6350-SF	12/31/2000	9/30/2000		CAT3	0
Enforceable Agreement	C/ SYS DES & OPER STRATEGY FOR TANK LEAK MONITORING & MITIGATION	RL -1210-0	12/31/2000			CAT3	0
Enforceable Agreement	CANISTER STORAGE FACILITY PART B DANGEROUS WASTE PERMIT APPLICA'N	RL -1250-0	12/31/2000			CAT3	0
Enforceable Agreement	SUBMIT INTERIM ILAW FACILITY PART B PERMIT APPLICATION TO ECOLOGY	RL -1250-0	12/31/2000			CAT3	0
Enforceable Agreement	INITIATE THERMAL TREATMENT OF CH-LLMW	RL -2200-0	12/31/2000			CAT3	0
Enforceable Agreement	COMPLETE FACILITIES PRIOR TO DISPOSAL OF POST-1970 TRU/TRUM	RL -2200-0	12/31/2000			CAT3	0
Enforceable Agreement	SUBMIT 2 RI/FS (RFI/CMS) WORK PLANS FOR 200 NPL AREAS	RL -3210-0	12/31/2000	12/31/2006		CAT5	0
Enforceable Agreement	AREAS 6, 7, 1-III, 2-II SUBMIT PREFNL DESIGN TO EPA	OHFN-4002	1/15/2001			CAT3	0
Enforceable Agreement	COMMENCE REMEDIAL ACTION - 1702 - ANLW	CH -1702	1/24/2001			CAT3	0
Enforceable Agreement	2000 ANNUAL REPORT	ALKC-0002	3/1/2001			CAT3	0
Enforceable Agreement	2000 ANNUAL REPORT	ALKC-1044	3/1/2001			CAT3	0
Enforceable Agreement	* STABILIZATION-INITIATE CONSTRUCTION NECESSARY FOR VENDOR OPS	OR -6200-U	3/30/2001			CAT3	0
Enforceable Agreement	STPI/STABILIZATION INITIATE SHIPMENT OF WASTE FOR TREATMENT	OR -6200-U	3/31/2001	3/1/2001		CAT3	0
Enforceable Agreement	TART CONSTRUCTION FOR UPGRADES IN THE 3R TANK FARM	RL -1100-1	3/31/2001			CAT3	0
Enforceable Agreement	ELECTRICAL COMPLEX DRAFT IMPLEMENTATION PLN TO EPA	OHFN-4001	4/3/2001			CAT3	0
Enforceable Agreement	ISSUE ANNUAL LDR STATUS REPORT (M-26-01K)	RL -7330-0	4/30/2001			CAT3	0
Enforceable Agreement	LABORATORY COMPLEX DRAFT IMPLEMENTATION PLN TO EPA	OHFN-4001	5/1/2001			CAT3	0
Enforceable Agreement	OU 10-04 DRAFT RI/FS ROD TO EPA/IDHW FOR REVIEW & COMMENT	ID -41-EG	5/31/2001	5/31/2001		CAT3	0
Enforceable Agreement	COMMENCE CALCINATION OF SODIUM-BEARING WASTE, NWCF CAMPAIGN H-5	ID -1001-01	6/1/2001	7/31/1999		CAT3	0
Enforceable Agreement	SUBMIT PRELIMINARY K-65 SILO DESIGN TO EPA	OHFN-4003	6/8/2001			CAT3	0
Enforceable Agreement	EPA RECEIVES WASTE STOR AREA PRELIM DESIGN PKG	OHFN-4002	6/15/2001			CAT3	0
Enforceable Agreement	AWARD CONTRACT FOR PRIVATE SECTOR TREATMENT BASED ON POP EVALUATN	OR -8205	6/30/2001			CAT3	0
Enforceable Agreement	INITIATE ILAW INTERIM STORAGE FACILITY CONSTRUCTION	RL -1250-0	6/30/2001			CAT3	0
Enforceable Agreement	INITIATE DISPOSAL OF CH-LLMW	RL -2200-0	6/30/2001			CAT3	0
Enforceable Agreement	SUBMIT FFTF SURVEILLANCE AND MAINTENANCE PLAN	RL -6640-0	6/30/2001			CAT3	0
Enforceable Agreement	EPA RECEIVES PLANT 6 AREA PRELIM DESIGN PKG	OHFN-4002	8/15/2001			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	PREPARE SUBMITTAL TO THE NATIONAL IDB	RL -7330-0	8/29/2001			CAT3	0
Enforceable Agreement	SUBMIT TO EPA & ECOL EVAL OF DEVEL STATUS OF TRITIUM TREAT TECH	RL -2300-0	8/31/2001			CAT3	0
Enforceable Agreement	* PHYS CHEM TRET-SUBMITTAL OF PLAN FOR TREAT OF MIX WASTE	OR -6200-U	9/29/2001			CAT3	0
Enforceable Agreement	* METAL RECOVERY-SUBMITTAL OF PLAN FOR TREATMENT OF MIXED WASTES	OR -6200-U	9/29/2001			CAT3	0
Enforceable Agreement	P6-4 TREAT 100% OF CASK BACKLOG (114.7 M3)	ID -4310-01	9/30/2001			CAT3	0
Enforceable Agreement	P6-4 TREAT 100% OF CASK BACKLOG (114.7 M3)	ID -4310-EG	9/30/2001			CAT3	0
Enforceable Agreement	* SHIP LIQUID WASTE TO K-25 INCINERATOR PER BURN PLAN	OR -6200-U	9/30/2001			CAT3	0
Enforceable Agreement	STPI/CHEMTRET SUBMIT PLAN FOR PHYSICAL CHEMICAL TREATMENT	OR -6200-U	9/30/2001	9/1/2001		CAT3	0
Enforceable Agreement	STPI/LABPACK COMPLETE SHIPMENT OF LAB WASTES FOR TREATMENT	OR -6200-U	9/30/2001	9/1/2001		CAT3	0
Enforceable Agreement	TPI/RECOVER - SUBMIT PLAN FOR TREATMENT BY METAL RECOVERY	OR -6200-U	9/30/2001	3/1/2001		CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF 1/2 TANK OF WETF SLUDGE	OR -8205	9/30/2001			CAT3	0
Enforceable Agreement	DOUBLE-SHELL TANK SPACE EVALUATION	RL -1100-0	9/30/2001			CAT3	0
Enforceable Agreement	MITIG./RESOLVE TANK SAFETY ISSUES HIGH PRIORITY WATCH LIST TANKS	RL -1110-0	9/30/2001			CAT3	0
Enforceable Agreement	SUBMIT ANNUAL UPDATE OF SST RETRIEVAL SEQ DOC FOR ECOLOGY APPROV	RL -1210-0	9/30/2001			CAT3	0
Enforceable Agreement	SUBMIT ANNUAL PROGRESS RPT ON WT LEAK MONITOR/DETECT & MITIGATION	RL -1210-0	9/30/2001			CAT3	0
Enforceable Agreement	COMPLETE PCB TRANSFORMER DISPOSAL	RL -6640-0	9/30/2001			CAT3	0
Enforceable Agreement	SITE-WIDE RECORD OF DECISION (ROD)	SF -1481-03	11/15/2001			CAT3	0
Enforceable Agreement	EPA RECEIVES PLANT 6 AREA PRE-FINAL DESIGN PKG	OHFN-4002	11/30/2001			CAT3	0
Enforceable Agreement	EPA RECEIVES WASTE STOR AREA PRE-FINAL DESIGN PKG	OHFN-4002	11/30/2001			CAT3	0
Enforceable Agreement	FINAL SITE REMEDIATION, TITLE II DESIGN, PRE-FINAL	OHFN-4003	12/7/2001			CAT3	0
Enforceable Agreement	STPI/CARBON COMMENCE REGENERATION OPERATIONS	OR -6200-U	12/31/2001	12/1/2001		CAT3	0
Enforceable Agreement	ESTABLISH DATE FOR COMPLETION OF ALL 100 AREA REMEDIAL ACTIONS.	RL -3100-0	12/31/2001			CAT3	0
Enforceable Agreement	SUBMIT 3 RI/FS (RFI/CMS) WORK PLANS. (FOR 200 NPL AREA)	RL -3200-0	12/31/2001	6/30/2009		CAT5	0
Enforceable Agreement	COMPLETE FFTF TRANSITION AND INITIATE THE S&M PHASE	RL -6640-0	12/31/2001			CAT3	0
Enforceable Agreement	2001 ANNUAL REPORT	ALKC-0002	3/1/2002			CAT6	0
Enforceable Agreement	2001 ANNUAL REPORT	ALKC-1044	3/1/2002			CAT6	0
Enforceable Agreement	TART CONSTRUCTION FOR UPGRADES IN THE 4TH TANK FARM	RL -1100-1	3/31/2002			CAT3	0
Enforceable Agreement	CONDUCT BIENNIAL ASSESS OF INFO & DATA ACCESS W/EPA AND ECOLOGY	RL -7330-0	3/31/2002			CAT3	0
Enforceable Agreement	SUBMIT K-65 SILO PREFINAL DESIGN TO EPA	OHFN-4003	5/10/2002	6/10/2002		CAT3	0
Enforceable Agreement	ESTABLISH DATE FOR COMPLETION OF THE 300 AREA REMEDIAL ACTIONS	RL -3300-0	6/30/2002			CAT3	0
Enforceable Agreement	* SHIP LIQUID WASTE TO K-25 INCINERATOR PER BURN PLAN	OR -6200-U	9/30/2002			CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF 1/2 TANK OF WETF SLUDGE	OR -8205	9/30/2002			CAT3	0
Enforceable Agreement	DOUBLE-SHELL TANK SPACE EVALUATION	RL -1100-0	9/30/2002			CAT3	0
Enforceable Agreement	SUBMIT ANNUAL UPDATE OF SST RETRIEVAL SEQ DOC FOR ECOLOGY APPROV	RL -1210-0	9/30/2002			CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	SUBMIT ANNUAL PROGRESS RPT ON WT LEAK MONITOR/DETECT & MITIGATION	RL -1210-0	9/30/2002			CAT3	0
Enforceable Agreement	COMP TREATMENT/DISPOSAL OF 1,644 C.M. OF CH-LLMW	RL -2200-0	9/30/2002			CAT3	0
Enforceable Agreement	COMPLETE CANISTER STORAGE FACILITY CONSTRUCTION	RL -1250-0	12/21/2002			CAT6	0
Enforceable Agreement	CPP-740/SFE-20 D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	12/23/2002	12/23/2002		CAT3	0
Enforceable Agreement	TART HOT OPS OF 2 COCO PH I LAW PRETREAT & IMMOBILIZATION FAC'S	RL -1230-0	12/31/2002			CAT6	0
Enforceable Agreement	INITIATE HOT OPERATIONS OF ILAW INTERIM STORAGE FACILITY	RL -1250-0	12/31/2002			CAT6	0
Enforceable Agreement	SUBMIT 3 RI/FS (RFI/CMS) WORK PLANS TO REGULATORS	RL -3200-0	12/31/2002	3/31/2012		CAT5	0
Enforceable Agreement	OU-4 COMPLEX DRAFT IMPLEMENTATION PLN TO DOE-FEMP	OHFN-4001	1/15/2003			CAT3	0
Enforceable Agreement	CPP-640 D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	2/28/2003	2/28/2003		CAT3	0
Enforceable Agreement	STPI/AEROSOL INITIATE SHIPMENT OF CANS FOR TREATMENT	OR -6200-U	6/30/2003	6/1/2003		CAT3	0
Enforceable Agreement	STPI/RECYCLE INITIATE SHIPMENT OF LEAD FOR TRANSPORT	OR -6200-U	6/30/2003	6/1/2003		CAT3	0
Enforceable Agreement	TART CONSTRUCTION FOR UPGRADES IN THE 5TH TANK FARM	RL -1100-1	6/30/2003			CAT6	0
Enforceable Agreement	C/ DEMO & INSTL OF LEAK MONITOR & MITIGATION SYS FOR INIT SST RET	RL -1210-0	6/30/2003			CAT6	0
Enforceable Agreement	EST FULL SCALE CAP FOR MITIGATION OF WASTE TANK LEAK DURING SLUIC	RL -1210-0	6/30/2003			CAT6	0
Enforceable Agreement	INITIATE ILAW DISPOSAL FACILITY CONSTRUCTION	RL -1250-0	6/30/2003			CAT6	0
Enforceable Agreement	TTAF D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	9/30/2003	9/30/2003		CAT3	0
Enforceable Agreement	TPI/CARBON COMPLETE PROCESSING OF CARBON REGENERATION	OR -6200-U	9/30/2003	9/1/2003		CAT3	0
Enforceable Agreement	COMPLETE TREATMENT OF 1/2 TANK OF WETF SLUDGE	OR -8205	9/30/2003			CAT3	0
Enforceable Agreement	SUBMIT ANNUAL PROGRESS RPT ON WT LEAK MONITOR/DETECT & MITIGATION	RL -1210-0	9/30/2003			CAT6	0
Enforceable Agreement	NITIATE HOT OPERATIONS OF PH I LAW PRETREAT & IMMOBILIZATION FAC	RL -1230-0	12/31/2003			CAT6	0
Enforceable Agreement	INITIATE NEGOTIATIONS ON PHASE II LAW PRERTREAT & IMMOBILIZATION	RL -1240-0	12/31/2003			CAT6	0
Enforceable Agreement	SUBMIT LAW DISPOSAL FACILITY PART B PERMIT APPLICATION TO ECOLOGY	RL -1250-0	12/31/2003			CAT6	0
Enforceable Agreement	SUBMIT APPLICATION OR PLANS FOR RCRA TSD UNITS TO EPA/ECOLOGY	RL -3020-0	12/31/2003	12/31/2006		CAT6	0
Enforceable Agreement	SUBMIT 3 200 NPL RI/FS (RFI/CMS) WORK PLANS	RL -3200-0	12/31/2003	12/31/2018		CAT6	0
Enforceable Agreement	SUBMIT PART B PERMIT APPLICATIONS OR CLOSURE PLANS FOR ALL RCRA	RL -7330-0	12/31/2003			CAT6	0
Enforceable Agreement	ISSUE D1 POST CONSTRUCTION REPORT (WAG 3)	OR -5300-U	2/9/2004	6/4/2003		CAT3	0
Enforceable Agreement	OU-1 COMPLEX DRAFT IMPLEMENTATION PLN TO DOE-FEMP	OHFN-4001	2/10/2004			CAT3	0
Enforceable Agreement	ISSUE D1 SITE EVALUATION REPORT (WAG 30)	OR -5300-U	7/18/2004	7/18/2004		CAT3	0
Enforceable Agreement	TSCA/ SEMI SOLIDS INITIATE SORTING & INCINERATION	OR -6200-U	9/30/2004	3/1/2002		CAT3	0
Enforceable Agreement	STPI/AEROSOL COMPLETE SHIPMENT OF CANS OR TREATMENT	OR -6200-U	9/30/2004	9/1/2004		CAT3	0
Enforceable Agreement	COMP W-113 FOR POST-1970 CH TRU/TRUM RETRIEVAL	RL -2200-0	9/30/2004			CAT6	0
Enforceable Agreement	INITIATE NEGOTIATIONS ON PH II LAW PRETREAT & IMMOBILIZATION	RL -1230-0	12/31/2004			CAT6	0
Enforceable Agreement	SUBMIT 3 200 NPL RI/FS (RFI/CMS) WORK PLANS	RL -3200-0	12/31/2004	12/31/2013		CAT6	0
Enforceable Agreement	STPI/RECYCLE COMPLETE SHIPMENT OF LEAD FOR RECYCLING	OR -6200-U	3/1/2005	3/1/2005		CAT3	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	COMPLETE TANK FARM UPGRADES	RL -1100-1	6/30/2005			CAT6	0
Enforceable Agreement	TSCA/SEMI SOLIDS COMPLETE SHIPPING FOR INCINERATION	OR -6200-U	7/27/2005	6/1/2003		CAT3	0
Enforceable Agreement	LLW TREATMENT COMPLETE SORTING AND INCINERATION OF WASTE	OR -6200-U	9/29/2005	9/1/2005		CAT3	0
Enforceable Agreement	SUBMIT MILESTONES/PLANNING DATES FOR RH IMMOB FACILITY	ID -1003-01	9/30/2005	9/30/2005		CAT3	0
Enforceable Agreement	INITIATE HOT OPERATIONS OF ILAW DISPOSAL FACILITY	RL -1250-0	12/31/2005			CAT6	0
Enforceable Agreement	SUBMIT 4 200 NPL RI/FS (RFI/CMS) WORK PLANS.	RL -3200-0	12/31/2005	12/31/2018		CAT6	0
Enforceable Agreement	MTR D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	9/29/2006	9/29/2006		CAT3	0
Enforceable Agreement	PROCESS EQUIPMENT D&D REMEDIAL ACTION WORK PLAN	OR -4700-U	9/30/2006	10/3/1997		CAT3	0
Enforceable Agreement	KAFAD GROUP 1 BUILDING DEMOLITION REMEDIAL ACTION WORK PLAN	OR -4700-U	9/30/2006	6/1/1998		CAT3	0
Enforceable Agreement	WAG 15, SE REPORT	OR -5300-U	9/30/2006		12/19/1996		0
Enforceable Agreement	WAG 6, D1 RI REPORT	OR -5300-U	9/30/2006	7/16/1998		CAT3	0
Enforceable Agreement	WAGS 9&11, SE REPORT	OR -5300-U	9/30/2006	1/16/1998		CAT3	0
Enforceable Agreement	NE PLUME IRA #1, O&M PLAN	OR -5300-U	9/30/2006		12/25/1996		0
Enforceable Agreement	LASAGNA, DOE ROD SIGNATURE	OR -5300-U	9/30/2006	6/29/1998		CAT3	0
Enforceable Agreement	NW PLUME IRA #1, ANNUAL REPORT	OR -5300-U	9/30/2006			CAT3	0
Enforceable Agreement	WAG 22 (7&30), D1 FS REPORT	OR -5300-U	9/30/2006	1/10/1998		CAT3	0
Enforceable Agreement	WAG 22 (7&30), D1 PROPOSED PLAN	OR -5300-U	9/30/2006	6/28/1998		CAT3	0
Enforceable Agreement	BACKGROUND SOILS, D1 BACKGROUND SOILS REPORT	OR -5300-U	9/30/2006		4/15/1997		0
Enforceable Agreement	FISSION PRODUCT PILOT PLANT, ISSUE FINAL EE/CA TO DOE FOR APP. D2	OR -3700-X	11/10/2006	7/16/1999		CAT3	0
Enforceable Agreement	SUBMIT 4 200 NPL RI/FS (RFI/CMS) WORK PLANS.	RL -3200-0	12/31/2006	3/31/2022		CAT6	0
Enforceable Agreement	CPP-601 D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	3/30/2007	3/30/2007		CAT3	0
Enforceable Agreement	WCF D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	4/1/2008	4/1/2008		CAT3	0
Enforceable Agreement	CPP-603 D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	4/1/2008	4/1/2008		CAT3	0
Enforceable Agreement	START HOT OPERATIONS OF HLW PRETREATMENT FACILITY	RL -1240-0	6/30/2008			CAT6	0
Enforceable Agreement	COMPLETE FACILITIES/INITIATE TREATMENT OF RH/CH-LLMW	RL -2200-0	6/30/2008			CAT3	0
Enforceable Agreement	COMPLETE ALL FACILITIES FOR HANDLING TRU/TRUM, LLMW & GTC3	RL -2200-0	6/30/2008			CAT6	0
Enforceable Agreement	ETR D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	9/29/2008	9/29/2008		CAT3	0
Enforceable Agreement	COMPLETE THE RI/FS (OR RFI/CMS) PROCESS FOR ALL OPERABLE UNITS.	RL -3100-0	12/31/2008	9/30/2024		CAT6	0
Enforceable Agreement	COMPLETE ALL 200 AREA NON-TANK FARM OPERABLE UNIT PRE-ROD	RL -3200-0	12/31/2008	9/30/2024		CAT6	0
Enforceable Agreement	CEASE USE OF PILLAR AND PANEL VAULTED HLW TANKS	ID -1001-01	3/31/2009	3/31/2009		CAT6	0
Enforceable Agreement	TANK FARM D&D FINAL RPT APPROVED-SENT BY DOE-ID TO ARDC	ID -5801	4/1/2009	4/1/2009		CAT3	0
Enforceable Agreement	ISSUE D1 ROD (WAG 26)	OR -5300-U	6/4/2009	11/27/2007		CAT3	0
Enforceable Agreement	ISSUE RECORD OF DECISION FOR CALCINE WASTE TREATMENT	ID -1001-01	12/31/2009	12/31/2009		CAT6	0
Enforceable Agreement	INITIATE HOT OPERATIONS OF THE HLW VITRIFICATION FACILITY	RL -1240-0	12/31/2009			CAT6	0

Type	Milestone	ADS/TTP Number	Planned	Forecast	Actual	Category	Float
Enforceable Agreement	STPI/STABILIZATION COMPLETE SHIPMENT OF WASTE FOR TREATMENT	OR -6200-U	3/31/2011	3/1/2011		CAT3	0
Enforceable Agreement	COMPLETE CALCINATION OF SODIUM-BEARING HLLW	ID -1001-01	12/31/2012	12/31/2012		CAT6	0
Enforceable Agreement	SUBMIT APPLICATION FOR A RCRA PART B FOR CALCINED WASTE TREATMENT	ID -1001-01	12/31/2012	12/31/2012		CAT6	0
Enforceable Agreement	SUBMIT ANNUAL UPDATES TO SST RETRIEVAL SEQUENCE DOCUMENT	RL -1210-0	9/30/2017			CAT6	0
Enforceable Agreement	RETRIEVE WASTE FROM ALL REMAINING SINGLE-SHELL TANKS	RL -1210-0	9/30/2018			CAT6	0
Enforceable Agreement	COMPLETE ALL REMEDIAL ACTIONS FOR ALL NON-TANK FARM OUS	RL -3100-0	9/30/2018	9/30/2034		CAT6	0
Enforceable Agreement	COMPLETE CLOSURE OF ALL SINGLE SHELL TANK FARMS	RL -1210-0	9/30/2024			CAT6	0
Enforceable Agreement	COMPLETE CLOSURE OF ALL SINGLE-SHELL TANK FARMS	RL -1210-0	9/30/2024			CAT6	0
Enforceable Agreement	COMPLETE VITRIFICATION OF HANFORD LOW-LEVEL TANK WASTE	RL -1240-0	12/31/2024			CAT6	0
Enforceable Agreement	COMPLETE PRETREAT & IMMOBILIZATION OF HANFORD LOW ACTIVITY WASTE	RL -1230-0	12/31/2028			CAT6	0
Enforceable Agreement	PRETREATMENT PROCESSING OF HANFORD TANK WASTE	RL -1240-0	12/31/2028			CAT6	0
Enforceable Agreement	COMPLETE VITRIFICATION OF HANFORD HIGH LEVEL TANK WASTE	RL -1240-0	12/31/2028			CAT6	0
Enforceable Agreement	C/ FACILITIES ACQUISITION/MOD NECESSARY FOR IHLW & ILAW	RL -1250-0	9/30/2042			CAT6	0
Enforceable Agreement	COMPLETE GROUT INTERIM STATUS TANK ACTIONS.	RL -1100-0	12/31/2049			CAT6	0
Enforceable Agreement	PROVIDE ADDITIONAL DOUBLE-SHELL TANK CAPACITY.	RL -1100-0	12/31/2049			CAT6	0
Enforceable Agreement	COMPLETE 244-AR VAULT INTERIM STATUS TANK ACTIONS.	RL -1100-0	12/31/2049			CAT6	0
Enforceable Agreement	START CONSTR OF PH I LAW PRETREATMENT & IMMOBILIZATION FACILITY	RL -1230-0	12/31/2049			CAT6	0
Enforceable Agreement	START CONSTR FOR 2 PH I LAW PRETREAT & IMMOBILIZATION FACILITIES	RL -1230-0	12/31/2049			CAT6	0
Enforceable Agreement	COMPLETE ALL 100 AREA REMEDIAL ACTIONS	RL -3100-0	12/31/2049			CAT6	0
Enforceable Agreement	COMPLETE ALL 300 AREA REMEDIAL ACTIONS	RL -3300-0	12/31/2049	9/30/2034		CAT6	0
Enforceable Agreement	COMPLETE 100-N AREA DECONTAMINATION & DECOMMISSIONING	RL -3510-0	12/31/2049	9/30/2017		CAT6	0
Enforceable Agreement	COMPLETE STABILIZATION OF PROCESS AREAS & OTHER CLEANOUT ACTIONS	RL -6624-0	12/31/2049			CAT6	0
Enforceable Agreement	CONTAMIN. K-EAST BASIN H2O WILL BE REMOVED REPLACED, OR TREATED	RL -6696-0	12/31/2049			CAT6	0
Enforceable Agreement	CMPLT ACTIONS SPEC. BY AGREED MS RELATED TO K-EAST BASIN REMEDIA.	RL -6696-0	12/31/2049			CAT6	0
Enforceable Agreement	CONDUCT BIENNIAL ASSESS. OF INFO. & DATA ACCESS NEEDS W/EPA&ECOLO	RL -7330-0	12/31/2049			CAT6	0
Enforceable Agreement	COMPLETE CLOSURE OF NON-PERMITTED MIXED WASTE UNITS IN 324 BLDG	RL -8410-0	12/31/2049			CAT6	0
Enforceable Agreement	ISSUE D1 POST-CONSTRUCTION REPORT (WAG 26)	OR -5300-U	9/30/2050	3/11/2010		CAT3	0

PRIVATIZATION BUDGET AND CLEANUP PROGRESS

Senator DOMENICI. Would you explain one more time for me how we would use the billion-plus dollars in privatization. And try to use an example that we might understand, if you would. First of all, let me ask, how many sites do we have that we want to clean up in the United States—big, little, long term, short term?

Mr. ALM. I am responsible for 130 sites, and there are 81 to be cleaned up.

Senator DOMENICI. OK. The other ones are not to be cleaned up?

Mr. ALM. Fifty have been cleaned up.

Senator DOMENICI. Oh, they are done.

Mr. ALM. And these are smaller sites.

Senator DOMENICI. OK. Of the 80 plus, how many are extremely large sites and difficult?

Mr. ALM. Well, we can almost count them on your hands—Savannah River, Oak Ridge, Idaho, Rocky Flats—although I think Rocky Flats can be done much quicker—and Hanford. Clearly, those four—taking Rocky Flats out—will not achieve a 10-year window at all.

Senator DOMENICI. OK. Of the total amount of money we plan to spend, how much goes to those five?

Mr. ALM. Let me see. Hanford is about 1.7, I believe, with the privatization. Rocky Flats is——

Senator DOMENICI. $1.7 billion?

Mr. ALM. Yes.

Senator DOMENICI. OK, per year, with part of it being privatization.

Mr. ALM. There is an unusually high amount because of the privatization level.

Senator DOMENICI. Can you pull the privatization out of that for me? If you want to bring your budget man up, that is fine with me.

[Pause.]

Senator DOMENICI. Do you have to wait and do it for the record?

Mr. ALM. Savannah River is, I think, close to $1.2 billion. Oak Ridge is, I believe, $600 million and some, but they are getting the information.

Senator DOMENICI. OK.

[Pause.]

Mr. ALM. Yes; that is right. The number for Hanford is $1.7 billion. For Savannah River, the regular budget is $1.2 billion, and then there is $191 million in the privatization amount. And then there is forward funding construction, which is fully funding some of the construction activities, for $227 billion. So the total is $1.6 billion.

Senator DOMENICI. Maybe I can help you and you can just confirm this. I now have the percentage of the total as 66 percent going to the big five.

Mr. ALM. That sounds about right.

Senator DOMENICI. OK. Now, tell me about the remaining ones. Just in general, speak to us about them. Are some of those going to be done quickly? Do you have special plans for the smaller ones, to get them out of the way and get them done?

Mr. ALM. Well, first of all, you have two relatively good-sized projects, Fernald and Mound, in Ohio, plus West Valley in New York. And the idea is all three of those projects would be done by 2006. Fernald is a fairly significant project.

Then you have the FUSRAP Program, the Formerly Utilized Remedial Action Program. And these are a small number of sites across the country. And we are asking for an additional $100 million to try and finish all those sites by the year 2002.

Then we have a number of sites—they almost go State by State—you have got Lawrence Berkeley, Livermore, Los Alamos, Sandia—that are substantial but not our larger sites. And then you have the uranium mill tailing sites, which are a large number where we are dealing with ground water contamination.

Senator DOMENICI. Could you give us, or maybe you did and I do not have it, but give us all of those in a response to this ques-

tion of how much you estimate each one will cost and what your timeframe is.

Mr. ALM. I would be glad to do that.

[The information follows:]

CLEANING UP SITES

The Environmental Management (EM) program has cleanup responsibility for 132 geographic sites in 31 states and one U.S. territory. As of the end of fiscal year 1996, cleanup had been completed at 52 of the 132 geographic sites, leaving 80 sites which require some form of action.

I would like to provide for the record a table listing all of the 132 geographic sites, those completed, and those to be completed in fiscal year 1997 and beyond. The information included in this table is consistent with the fiscal year 1998 Congressional Budget Request and does not incorporate probable increase in efficiency and resulting acceleration of work as a result of the EM 2006 Plan currently being developed by EM staff across the country.

In some cases, funding amounts are provided for multiple geographic sites due to the nature of the budget formulation process at given Operations Offices.

The definition used for cleanup of a geographic site is "A geographic site is considered complete when physical remediation or decommissioning has been finished and the appropriate documentation has been submitted to regulators." Several exceptions exist to this definition.

For purposes of groundwater remediation projects, sites are considered completed once groundwater remediation construction has been completed and operation started. In addition, this definition excludes long term surveillance and maintenance requirements.

This may result in a site being designated as complete even though there are still pump and treat requirements for groundwater as well as surveillance and maintenance requirements.

The Uranium Mill Tailings Remedial Action Program (UMTRA) is comprised of 24 geographic sites, however, it is managed as two programs—the UMTRA Surface Remediation Program and the UMTRA Groundwater Remediation Program. The attached table provides completion dates and funding associated with both programs associated with these 24 UMTRA sites.

The information I would like to provide for the record follows:

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
CA	Berkeley	100	T	400	0	400	783	0	783	550	0	550
CA	ETEC	30	N	0	0	0	900	0	900	0	0	0
CA	ETEC	40	D	0	0	0	0	0	0	0	393	393
CA	ETEC	100	T	0	0	0	900	0	900	0	393	393
CA	General Atomics	40	N	0	0	0	0	0	0	503	0	0
CA	General Electric	40	N	0	0	0	0	0	0	105	0	0
CA	LEHR	30	N	0	0	0	42	0	42	0	0	0
CA	LLNL	20	D	450	0	450	0	0	0	0	0	0
CA	LLNL	30	D	0	0	0	6,000	0	6,000	0	0	0
CA	LLNL	30	D	0	0	0	0	6,550	6,550	0	0	0
CA	LLNL	40	D	0	0	0	0	0	0	0	700	700
CA	LLNL	100	T	450	0	450	6,000	6,550	12,550	0	700	700
CA	Oakland Op's Office	30	D	0	0	0	450	0	450	0	0	0
CA	Oakland Op's Office	40	D	0	0	0	0	0	0	0	300	0
CA	Oakland Op's Office	50	D	0	0	0	0	0	0	0	0	0
CA	Oakland Op's Office	50	D	0	0	0	0	0	0	0	0	0
CA	Oakland Op's Office	50	D	0	0	0	0	0	0	0	0	0
CA	Oakland Op's Office	100	T	0	0	0	450	0	450	0	300	300
CA	Sandia NL	40	D	0	0	0	0	0	0	0	498	498
CA	SLAC	30	N	0	0	0	475	0	475	0	0	0
CA	UC Davis	40	N	0	0	0	0	0	0	1,076	0	0
CA TOTAL		**T**		**850**	**0**	**850**	**8,650**	**6,550**	**15,200**	**2,234**	**1,891**	**4,125**
CO	Grand Junction	40	N	0	0	0	0	0	0	2,843	0	0
CO	Rocky Flats	20	D	450	0	450	0	0	0	0	0	0

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
CO	Rocky Flats	20	D	350	0	350	0	0	0	0	0	0
CO	Rocky Flats	30	D	0	0	0	2,350	0	2,350	0	0	0
CO	Rocky Flats	30	D	0	0	0	3,150	0	3,150	0	0	0
CO	Rocky Flats	30	D	0	0	0	1,900	0	1,900	0	0	0
CO	Rocky Flats	30	D	0	0	0	5,700	0	5,700	0	0	0
CO	Rocky Flats	30	D	0	0	0	600	0	600	0	0	0
CO	Rocky Flats	40	D	0	0	0	0	0	0	0	11,466	11,466
CO	Rocky Flats	40	D	0	0	0	0	0	0	0	3,700	3,700
CO	Rocky Flats	50	D	0	0	0	0	0	0	0	0	0
CO	Rocky Flats	50	D	0	0	0	0	0	0	0	0	0
CO	Rocky Flats	50	D	0	0	0	0	0	0	0	0	0
CO	Rocky Flats	60	D	0	0	0	0	0	0	0	0	0
CO	Rocky Flats	60	D	0	0	0	0	0	0	0	0	0
CO	Rocky Flats	60	D	0	0	0	0	0	0	0	0	0
CO	Rocky Flats	60	D	0	0	0	0	0	0	0	0	0
CO	Rocky Flats	60	D	0	0	0	0	0	0	0	0	0
CO	Rocky Flats	60	D	0	0	0	0	0	0	0	0	0
CO	Rocky Flats	60	D	0	0	0	0	0	0	0	0	0
CO	Rocky Flats	100	T	800	0	800	13,700	0	13,700	0	15,166	15,166
CO	UMTRA Sites	40	N	0	0	0	0	0	0	3,800	0	3,800
CO TOTAL		**T**		**800**	**0**	**800**	**13,700**	**0**	**13,700**	**6,643**	**15,166**	**21,809**
FL	Pinellas	40	D	0	0	0	0	0	0	0	567	567
FL TOTAL		**T**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**567**	**567**
GRAND TOTALS				**#REF!**	**#REF!**	**#REF!**	**#REF!**	**#REF!**	**#REF!**	**#REF!**	**#REF!**	**#REF!**
ID	Argonne NLW	50	D	0	0	0	0	0	0	0	0	0
ID	ID Ops Ofc	30	D	0	0	0	2,500	0	2,500	0	0	0
ID	ID Ops Ofc	40	D	0	0	0	0	0	0	0	300	300

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
ID	ID Ops Ofc	60	D	0	0	0	0	0	0	0	0	0
ID	ID Ops Ofc	60	D	0	0	0	0	0	0	0	0	0
ID	ID Ops Ofc	60	D	0	0	0	0	0	0	0	0	0
ID	ID Ops Ofc	60	D	0	0	0	0	0	0	0	0	0
ID	ID Ops Ofc	60	D	0	0	0	0	0	0	0	0	0
ID	ID Ops Ofc	60	D	0	0	0	0	0	0	0	0	0
ID	ID Ops Ofc	60	D	0	0	0	0	0	0	0	0	0
ID	ID Ops Ofc	60	D	0	0	0	0	0	0	0	0	0
ID	ID Ops Ofc	100	T	0	0	0	2,500	0	2,500	0	300	300
ID	INEL	20	D	353	0	353	0	0	0	0	0	0
ID	INEL	20	D	394	0	394	0	0	0	0	0	0
ID	INEL	20	D	0	1	1	0	0	0	0	0	0
ID	INEL	30	D	0	0	0	1,400	0	1,400	0	0	0
ID	INEL	30	D	0	0	0	3,000	0	3,000	0	0	0
ID	INEL	30	D	0	0	0	3,600	0	3,600	0	0	0
ID	INEL	30	D	0	0	0	3,600	0	3,600	0	0	0
ID	INEL	30	D	0	0	0	1,200	0	1,200	0	0	0
ID	INEL	30	D	0	0	0	0	8,800	8,800	0	0	0
ID	INEL	30	N	0	0	0	742	0	742	0	0	0
ID	INEL	30	N	0	0	0	858	0	858	0	0	0
ID	INEL	40	D	0	0	0	0	0	0	0	5,170	5,170
ID	INEL	40	D	0	0	0	0	0	0	0	234	234
ID	INEL	50	D	0	0	0	0	0	0	0	0	0
ID	INEL	50	D	0	0	0	0	0	0	0	0	0
ID	INEL	50	D	0	0	0	0	0	0	0	0	0
ID	INEL	100	T	747	1	748	14,400	8,800	23,200	0	5,404	5,404
ID	Nez Perce Tribe	5	D	0	0	0	0	0	0	0	0	0

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
ID	Shoshone-B. Tribe	5	D	0	0	0	0	0	0	0	0	0
ID TOTAL		**T**		**747**	**1**	**748**	**16,900**	**8,800**	**25,700**	**0**	**5,704**	**5,704**
IL	Argonne NLE	20	D	1,857	0	1,857	0	0	0	0	0	0
IL	Argonne NLE	20	D	1,200	0	1,200	0	0	0	0	0	0
IL	Argonne NLE	20	D	950	0	950	0	0	0	0	0	0
IL	Argonne NLE	20	D	0	68	68	0	0	0	0	0	0
IL	Argonne NLE	30	N	0	0	0	400	0	400	0	0	0
IL	Argonne NLE	30	N	0	0	0	1,150	0	1,150	0	0	0
IL	Argonne NLE	40	N	0	0	0	0	0	0	6,366	0	0
IL	Argonne NLE	50	D	0	0	0	0	0	0	0	0	0
IL	Argonne NLE	100	T	4,007	68	4,075	1,550	0	1,550	6,366	0	6,366
IL	Chicago Op's	30	N	0	0	0	750	0	0	0	0	0
IL	Chicago Op's	40	D	0	0	0	0	0	0	0	900	0
IL	Chicago Op's	100	T	0	0	0	750	0	750	0	900	900
IL TOTAL		**T**		**4,007**	**68**	**4,075**	**2,300**	**0**	**2,300**	**6,366**	**900**	**7,266**
LA	Tulane/Xavier U.	6	D	0	0	0	0	0	0	0	0	0
LA TOTAL		**T**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
MD/DC	Headquarters	20	D	6,040	0	6,040	0	0	0	0	0	0
MD/DC	Headquarters	20	D	24,714	0	24,714	0	0	0	0	0	0
MD/DC	Headquarters	20	D	906	0	906	0	0	0	0	0	0
MD/DC	Headquarters	20	D	590	0	590	0	0	0	0	0	0
MD/DC	Headquarters	20	D	0	92	92	0	0	0	0	0	0
MD/DC	Headquarters	30	D	0	0	0	2,600	0	2,600	0	0	0
MD/DC	Headquarters	30	D	0	0	0	1,200	0	1,200	0	0	0
MD/DC	Headquarters	30	D	0	0	0	7,200	0	7,200	0	0	0
MD/DC	Headquarters	30	D	0	0	0	0	5,518	5,518	0	0	0
MD/DC	Headquarters	40	N	0	0	0	0	0	0	1,655	0	1,655

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
MD/DC	Headquarters	40	D	0	0	0	0	0	0	0	8,680	8,680
MD/DC	Headquarters	40	D	0	0	0	0	0	0	0	420	420
MD/DC	Headquarters	50	D	0	0	0	0	0	0	0	0	0
MD/DC	Headquarters	50	D	0	0	0	0	0	0	0	0	0
MD/DC	Headquarters	60	D	0	0	0	0	0	0	0	0	0
MD/DC	Headquarters	100	T	32,250	92	32,342	11,000	5,518	16,518	1,655	9,100	10,755
MD/DC TOTAL [2]		**T**		**32,250**	**92**	**32,342**	**11,000**	**5,518**	**16,518**	**1,655**	**9,100**	**10,755**
MO	Kansas City Plant	40	D	0	0	0	0	0	0	0	419	419
MO	St. Louis	40	N	0	0	0	0	0	0	8,848	0	8,848
MO	Weldon Springs	40	N	0	0	0	0	0	0	9,000	0	9,000
MO TOAL		**T**		**0**	**0**	**0**	**0**	**0**	**0**	**17,848**	**419**	**18,267**
MT	Montana State U	20	D	353	0	353	0	0	0	0	0	0
MT TOTAL		**T**		**353**	**0**	**353**	**0**	**0**	**0**	**0**	**0**	**0**
ND	Belfield/Bowman	40	N	0	0	0	0	0	0	11,700	0	11,700
ND TOTAL		**T**		**0**	**0**	**0**	**0**	**0**	**0**	**11,700**	**0**	**11,700**
NJ	Princeton PPL	30	N	0	0	0	1,500	0	1,500	0	0	0
NJ	Rutgers Univ.	6	D	0	0	0	0	0	0	0	0	0
NJ TOTAL		**T**		**0**	**0**	**0**	**1,500**	**0**	**1,500**	**0**	**0**	**0**
NM	Albuquerque Op's	30	D	0	0	0	400	0	400	0	0	0
NM	Albuquerque Op's	40	D	0	0	0	0	0	0	0	362	362
NM	Albuquerque Op's	40	D	0	0	0	0	0	0	0	1,200	1,200
NM	Albuquerque Op's	60	D	0	0	0	0	0	0	0	0	0
NM	Albuquerque Op's	100	T	0	0	0	400	0	400	0	1,562	1,562
NM	Cochiti Tribe	6	D	0	0	0	0	0	0	0	0	0
NM	Isleta Tribe	6	D	0	0	0	0	0	0	0	0	0
NM	ITRI	40	N	0	0	0	0	0	0	217	0	217

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
NM	Jemez Tribe	6	D	0	0	0	0	0	0	0	0	0
NM	Los Alamos NL	20	D	534	0	534	0	0	0	0	0	0
NM	Los Alamos NL	20	D	745	0	745	0	0	0	0	0	0
NM	Los Alamos NL	20	D	405	0	405	0	0	0	0	0	0
NM	Los Alamos NL	30	D	0	0	0	4,000	0	4,000	0	0	0
NM	Los Alamos NL	30	D	0	0	0	5,300	0	5,300	0	0	0
NM	Los Alamos NL	30	D	0	0	0	1,300	0	1,300	0	0	0
NM	Los Alamos NL	30	D	0	0	0	1,000	0	1,000	0	0	0
NM	Los Alamos NL	40	D	0	0	0	0	0	0	0	7,815	7,815
NM	Los Alamos NL	100	T	1,684	0	1,684	11,600	0	11,600	0	7,815	7,815
NM	Nambe Tribe	6	D	0	0	0	0	0	0	0	0	0
NM	Navajo Tribe	6	D	0	0	0	0	0	0	0	0	0
NM	S. Domingo Tribe	6	D	0	0	0	0	0	0	0	0	0
NM	S. Ildefonso Tribe	6	D	0	0	0	0	0	0	0	0	0
NM	Sandia NL	20	D	200	0	200	0	0	0	0	0	0
NM	Sandia NL	20	D	200	0	200	0	0	0	0	0	0
NM	Sandia NL	20	D	300	0	300	0	0	0	0	0	0
NM	Sandia NL	20	D	200	0	200	0	0	0	0	0	0
NM	Sandia NL	20	D	250	0	250	0	0	0	0	0	0
NM	Sandia NL	20	D	100	0	100	0	0	0	0	0	0
NM	Sandia NL	20	D	200	0	200	0	0	0	0	0	0
NM	Sandia NL	20	D	250	0	250	0	0	0	0	0	0
NM	Sandia NL	20	D	300	0	300	0	0	0	0	0	0
NM	Sandia NL	20	D	132	0	132	0	0	0	0	0	0
NM	Sandia NL	20	D	0	227	227	0	0	0	0	0	0
NM	Sandia NL	40	D	0	0	0	0	0	0	0	3,232	3,232
NM	Sandia NL	50	D	0	0	0	0	0	0	0	0	0

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
NM	Sandia NL	50	D	0	0	0	0	0	0	0	0	0
NM	Sandia NL	50	D	0	0	0	0	0	0	0	0	0
NM	Sandia NL	50	D	0	0	0	0	0	0	0	0	0
NM	Sandia NL	50	D	0	0	0	0	0	0	0	0	0
NM	Sandia NL	50	D	0	0	0	0	0	0	0	0	0
NM	Sandia NL	100	T	2,132	227	2,359	0	0	0	0	3,232	3,232
NM	WIPP	30	D	0	0	0	600	0	600	0	0	0
NM	WIPP	30	D	0	0	0	2,700	0	2,700	0	0	0
NM	WIPP	30	D	0	0	0	2,900	0	2,900	0	0	0
NM	WIPP	30	D	0	0	0	4,300	0	4,300	0	0	0
NM	WIPP	100	T	0	0	0	10,500	0	10,500	0	0	0
NM TOTAL		**T**		**3,816**	**227**	**4,043**	**22,500**	**0**	**22,500**	**217**	**12,609**	**12,826**
NV	Nevada Op's	20	D	900	0	900	0	0	0	0	0	0
NV	Nevada Op's	20	D	1,747	0	1,747	0	0	0	0	0	0
NV	Nevada Op's	20	D	350	0	350	0	0	0	0	0	0
NV	Nevada Op's	20	D	0	1	1	0	0	0	0	0	0
NV	Nevada Op's	40	D	0	0	0	0	0	0	0	3,200	3,200
NV	Nevada Op's	100	T	2,997	1	2,998	0	0	0	0	3,200	3,200
NV	NV Test Site	50	D	0	0	0	0	0	0	0	0	0
NV	NV Test Site	30	D	0	0	0	250	0	250	0	0	0
NV	NV Test Site	30	D	0	0	0	1,000	0	1,000	0	0	0
NV	NV Test Site	30	D	0	0	0	200	0	200	0	0	0
NV	NV Test Site	30	D	0	0	0	0	1,300	1,300	0	0	0
NV	NV Test Site	30	D	0	0	0	0	1,250	1,250	0	0	0
NV	NV Test Site	100	T	0	0	0	1,450	2,550	4,000	0	0	0
NV	UNLV	6	D	0	0	0	0	0	0	0	0	0
NV TOTAL		**T**		**2,997**	**1**	**2,998**	**1,450**	**2,550**	**4,000**	**0**	**3,200**	**3,200**

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
NY	Brookhaven NL	30	N	0	0	0	700	0	700	0	0	0
NY	Brookhaven NL	30	N	0	0	0	400	0	400	0	0	0
NY	Brookhaven NL	100	T	0	0	0	1,100	0	1,100	0	0	0
NY	EML	20	D	2,750	0	2,750	0	0	0	0	0	0
NY	Senaca Tribe	5	D	0	0	0	0	0	0	0	0	0
NY TOTAL		**T**		**2,750**	**0**	**2,750**	**1,100**	**0**	**1,100**	**0**	**0**	**0**
OH	Battelle CL	40	D	0	0	0	0	0	0	0	2,847	2,847
OH	Mound	40	D	0	0	0	0	0	0	0	965	965
OH	Mound	40	D	0	0	0	0	0	0	0	965	965
OH	Mound	40	N	0	0	0	0	0	0	162	0	0
OH	Mound	60	D	0	0	0	0	0	0	0	0	0
OH	Mound	100	T	0	0	0	0	0	0	162	1,930	2,092
OH	Ohio Op's	20	D	200	0	200	0	0	0	0	0	0
OH	Ohio Op's	40	D	0	0	0	0	0	0	0	1,600	1,600
OH	Ohio Op's	100	T	200	0	200	0	0	0	0	1,600	1,600
OH	Portsmouth	40	D	0	0	0	0	0	0	0	2,080	2,080
OH	RMI	40	D	0	0	0	0	0	0	0	703	703
OH TOTAL		**T**		**200**	**0**	**200**	**0**	**0**	**0**	**162**	**9,160**	**9,322**
OR	Umatilla Tribe	5	D	0	0	0	0	0	0	0	0	0
OR TOTAL		**T**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SC	Medical U. of SC	6	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	20	D	450	0	450	0	0	0	0	0	0
SC	Savannah River	30	D	0	0	0	3,000	0	3,000	0	0	0
SC	Savannah River	30	D	0	0	0	14,000	0	14,000	0	0	0
SC	Savannah River	30	D	0	0	0	6,300	0	6,300	0	0	0
SC	Savannah River	30	D	0	0	0	10,000	0	10,000	0	0	0
SC	Savannah River	30	D	0	0	0	2,500	0	2,500	0	0	0

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
SC	Savannah River	30	D	0	0	0	8,000	0	8,000	0	0	0
SC	Savannah River	30	D	0	0	0	7,400	0	7,400	0	0	0
SC	Savannah River	40	D	0	0	0	0	0	0	0	3,073	3,073
SC	Savannah River	40	D	0	0	0	0	0	0	0	1,000	1,000
SC	Savannah River	50	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	50	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	50	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	50	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	50	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	50	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	60	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	60	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	60	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	60	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	60	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	60	D	0	0	0	0	0	0	0	0	0
SC	Savannah River	100	T	450	0	450	51,200	0	51,200	0	4,073	4,073
SC TOTAL		**T**		**450**	**0**	**450**	**51,200**	**0**	**51,200**	**0**	**4,073**	**4,073**
TN	Camdus Group	6	D	0	0	0	0	0	0	0	0	0
TN	K-25	40	D	0	0	0	0	0	0	0	4,779	4,779
TN	ORAU	40	D	0	0	0	0	0	0	0	215	215
TN	ORNL	20	D	562	0	562	0	0	0	0	0	0
TN	ORNL	20	D	417	0	417	0	0	0	0	0	0
TN	ORNL	20	D	500	0	500	0	0	0	0	0	0
TN	ORNL	20	D	506	0	506	0	0	0	0	0	0
TN	ORNL	20	D	384	0	384	0	0	0	0	0	0
TN	ORNL	20	D	960	0	960	0	0	0	0	0	0

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
TN	ORNL	20	D	0	291	291	0	0	0	0	0	0
TN	ORNL	30	D	0	0	0	6,700	0	6,700	0	0	0
TN	ORNL	30	D	0	0	0	5,500	0	5,500	0	0	0
TN	ORNL	30	D	0	0	0	10,400	0	10,400	0	0	0
TN	ORNL	30	N	0	0	0	2,138	0	2,138	0	0	0
TN	ORNL	40	N	0	0	0	0	0	0	5,517	0	5,517
TN	ORNL	40	D	0	0	0	0	0	0	0	2,995	2,995
TN	ORNL	50	D	0	0	0	0	0	0	0	0	0
TN	ORNL	50	D	0	0	0	0	0	0	0	0	0
TN	ORNL	100	T	3,329	291	3,620	24,738	0	24,738	5,517	2,995	8,512
TN	OR Operations	30	D	0	0	0	200	0	200	0	0	0
TN	OR Operations	40	D	0	0	0	0	0	0	0	500	500
TN	OR Operations	100	T	0	0	0	200	0	200	0	500	500
TN	OR Reservation	30	D	0	0	0	1,500	0	1,500	0	0	0
TN	OR Reservation	30	D	0	0	0	12,200	0	12,200	0	0	0
TN	OR Reservation	30	D	0	0	0	2,500	0	2,500	0	0	0
TN	OR Reservation	40	D	0	0	0		0	0	0	1,868	1,868
TN	OR Reservation	30	T	0	0	0	16,200	0	16,200	0	1,868	1,868
TN	Y-12	40	D	0	0	0	0	0	0	0	6,260	6,260
TN TOTAL		**T**		**3,329**	**291**	**3,620**	**41,138**	**0**	**41,138**	**5,517**	**16,617**	**22,134**
TX	Pantex	40	D	0	0	0	0	0	0	0	2,830	2,830
TX TOTAL		**T**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,830**	**2,830**
WA	Hanford	20	D	637	0	637	0	0	0	0	0	0
WA	Hanford	20	D	250	0	250	0	0	0	0	0	0
WA	Hanford	20	D	500	0	500	0	0	0	0	0	0
WA	Hanford	20	D	0	257	257	0	0	0	0	0	0
WA	Hanford	30	D	0	0	0	36,500	0	36,500	0	0	0

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
WA	Hanford	30	D	0	0	0	20,000	0	20,000	0	0	0
WA	Hanford	30	D	0	0	0	9,200	0	9,200	0	0	0
WA	Hanford	30	D	0	0	0	15,800	0	15,800	0	0	0
WA	Hanford	30	D	0	0	0	6,600	0	6,600	0	0	0
WA	Hanford	30	D	0	0	0	5,300	0	5,300	0	0	0
WA	Hanford	30	N	0	0	0	1,800	0	1,800	0	0	0
WA	Hanford	30	D	0	0	0	0	34,900	34,900	0	0	0
WA	Hanford	40	D	0	0	0	0	0	0	0	1,972	1,972
WA	Hanford	40	D	0	0	0	0	0	0	0	1,972	1,972
WA	Hanford	40	D	0	0	0	0	0	0	0	1,034	1,034
WA	Hanford	40	D	0	0	0	0	0	0	0	469	469
WA	Hanford	40	D	0	0	0	0	0	0	0	587	587
WA	Hanford	40	D	0	0	0	0	0	0	0	1,300	1,300
WA	Hanford	50	D	0	0	0	0	0	0	0	0	0
WA	Hanford	50	D	0	0	0	0	0	0	0	0	0
WA	Hanford	50	D	0	0	0	0	0	0	0	0	0
WA	Hanford	50	D	0	0	0	0	0	0	0	0	0
WA	Hanford	50	D	0	0	0	0	0	0	0	0	0
WA	Hanford	60	D	0	0	0	0	0	0	0	0	0
WA	Hanford	60	D	0	0	0	0	0	0	0	0	0
WA	Hanford	60	D	0	0	0	0	0	0	0	0	0
WA	Hanford	60	D	0	0	0	0	0	0	0	0	0
WA	Hanford	60	D	0	0	0	0	0	0	0	0	0
WA	Hanford	60	D	0	0	0	0	0	0	0	0	0
WA	Hanford	60	D	0	0	0	0	0	0	0	0	0
WA	Hanford	60	D	0	0	0	0	0	0	0	0	0

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

				Program Compliance		Program Compliance	Waste Management		Waste Management	Environmental Restoration		Environmental Restoration
State	Site	PO	A	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts
WA	Hanford	60	N	0	0	0	0	0	0	0	0	0
WA	Hanford	100	T	1,387	257	1,644	95,200	34,900	130,100	0	7,334	7,334
WA	Pacific Northwest Lab	20	D	700	0	700	0	0	0	0	0	0
WA	Pacific Northwest Lab	20	D	418	0	418	0	0	0	0	0	0
WA	Pacific Northwest Lab	20	D	748	0	748	0	0	0	0	0	0
WA	PNL	100	T	1,866	0	1,866	0	0	0	0	0	0
WA	Univ. of WA	6	D	0	0	0	0	0	0	0	0	0
WA	Yukama	5	D	0	0	0	0	0	0	0	0	0
WA TOTAL		**T**		**3,253**	**257**	**3,510**	**95,200**	**34,900**	**130,100**	**0**	**7,334**	**7,334**
WV	METC	50	D	0	0	0	0	0	0	0	0	0
WV	METC	50	D	0	0	0	0	0	0	0	0	0
WV	METC	50	D	0	0	0	0	0	0	0	0	0
WV	METC	50	D	0	0	0	0	0	0	0	0	0
WV	METC	100	T	0	0	0	0	0	0	0	0	0
WV TOTAL		**T**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	0	0	0	0	0	1,733	0	1,733
0	0	0	0	0	0	900	0	900
0	0	0	0	0	0	0	393	393
0	0	0	0	0	0	900	393	1,293
0	0	0	0	0	0	503	0	503
0	0	0	0	0	0	105	0	105
0	0	0	0	0	0	42	0	42
0	0	0	0	0	0	450	0	450
0	0	0	0	0	0	6,000	0	6,000
0	0	0	0	0	0	0	6,550	6,550
0	0	0	0	0	0	0	700	700
0	0	0	0	0	0	6,450	7,250	13,700
0	0	0	0	0	0	450	0	450
0	0	0	0	0	0	0	300	300
0	200	200	0	0	0	0	200	200
0	500	500	0	0	0	0	500	500
0	1,000	1,000	0	0	0	0	1,000	1,000
0	1,700	1,700	0	0	0	450	2,000	2,450
0	0	0	0	0	0	0	498	498
0	0	0	0	0	0	475	0	475
0	0	0	0	0	0	1,076	0	1,076
0	**1,700**	**1,700**	**0**	**0**	**0**	**11,734**	**10,141**	**21,875**
0	0	0	0	0	0	2,843	0	2,843
0	0	0	0	0	0	450	0	450

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	0	0	0	0	0	350	0	350
0	0	0	0	0	0	2,350	0	2,350
0	0	0	0	0	0	3,150	0	3,150
0	0	0	0	0	0	1,900	0	1,900
0	0	0	0	0	0	5,700	0	5,700
0	0	0	0	0	0	600	0	600
0	0	0	0	0	0	0	11,466	11,466
0	0	0	0	0	0	0	3,700	3,700
0	100	100	0	0	0	0	100	100
0	500	500	0	0	0	0	500	500
0	715	715	0	0	0	0	715	715
0	0	0	5,050	0	5,050	5,050	0	5,050
0	0	0	4,400	0	4,400	4,400	0	4,400
0	0	0	500	0	500	500	0	500
0	0	0	0	1,820	1,820	0	1,820	1,820
0	0	0	0	2,500	2,500	0	2,500	2,500
0	0	0	0	4,660	4,660	0	4,660	4,660
0	0	0	0	6,820	6,820	0	6,820	6,820
0	1,315	1,315	9,950	15,800	25,750	24,450	32,281	56,731
0	0	0	0	0	0	3,800	0	3,800
0	**1,315**	**1,315**	**9,950**	**15,800**	**25,750**	**31,093**	**32,281**	**63,374**
0	0	0	0	0	0	0	567	567
0	**0**	**0**	**0**	**0**	**0**	**0**	**567**	**567**
#REF!	**#REF!**	**#REF!**	**#REF!**	**#REF!**	**#REF!**	**#REF!**	**#REF!**	**#REF!**
0	500	500	0	0	0	0	500	500
0	0	0	0	0	0	2,500	0	2,500
0	0	0	0	0	0	0	300	300

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	0	0	11,795	0	11,795	11,795	0	11,795
0	0	0	50	0	50	50	0	50
0	0	0	4,952	0	4,952	4,952	0	4,952
0	0	0	124	0	124	124	0	124
0	0	0	0	3,765	3,765	0	3,765	3,765
0	0	0	0	1,897	1,897	0	1,897	1,897
0	0	0	0	7,202	7,202	0	7,202	7,202
0	0	0	0	2,119	2,119	0	2,119	2,119
0	0	0	16,921	14,983	31,904	19,421	15,283	34,704
0	0	0	0	0	0	353	0	353
0	0	0	0	0	0	394	0	394
0	0	0	0	0	0	0	1	1
0	0	0	0	0	0	1,400	0	1,400
0	0	0	0	0	0	3,000	0	3,000
0	0	0	0	0	0	3,600	0	3,600
0	0	0	0	0	0	3,600	0	3,600
0	0	0	0	0	0	1,200	0	1,200
0	0	0	0	0	0	0	8,800	8,800
0	0	0	0	0	0	742	0	742
0	0	0	0	0	0	858	0	858
0	0	0	0	0	0	0	5,170	5,170
0	0	0	0	0	0	0	234	234
0	1,000	1,000	0	0	0	0	1,000	1,000
0	1,000	1,000	0	0	0	0	1,000	1,000
0	500	500	0	0	0	0	500	500
0	2,500	2,500	0	0	0	15,147	16,705	31,852
0	0	0	0	0	0	1,500	0	1,500

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	0	0	0	0	0	800	0	800
0	**3,000**	**3,000**	**16,921**	**14,983**	**31,904**	**36,868**	**32,488**	**69,356**
0	0	0	0	0	0	1,857	0	1,857
0	0	0	0	0	0	1,200	0	1,200
0	0	0	0	0	0	950	0	950
0	0	0	0	0	0	0	68	68
0	0	0	0	0	0	400	0	400
0	0	0	0	0	0	1,150	0	1,150
0	0	0	0	0	0	6,366	0	6,366
0	200	200	0	0	0	0	200	200
0	200	200	0	0	0	11,923	268	12,191
0	0	0	0	0	0	750	0	750
0	0	0	0	0	0	0	900	900
0	0	0	0	0	0	750	900	1,650
0	**200**	**200**	**0**	**0**	**0**	**12,673**	**1,168**	**13,841**
0	0	0	0	0	0	9,000	0	9,000
0	**0**	**0**	**0**	**0**	**0**	**9,000**	**0**	**9,000**
0	0	0	0	0	0	6,040	0	6,040
0	0	0	0	0	0	24,714	0	24,714
0	0	0	0	0	0	906	0	906
0	0	0	0	0	0	590	0	590
0	0	0	0	0	0	0	92	92
0	0	0	0	0	0	2,600	0	2,600
0	0	0	0	0	0	1,200	0	1,200
0	0	0	0	0	0	7,200	0	7,200
0	0	0	0	0	0	0	5,518	5,518
0	0	0	0	0	0	1,655	0	1,655

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	0	0	0	0	0	0	8,680	8,680
0	0	0	0	0	0	0	420	420
8,817	0	8,817	0	0	0	8,817	0	8,817
0	1,000	1,000	0	0	0	0	1,000	1,000
0	0	0	1,959	0	1,959	1,959	0	1,959
8,817	1,000	9,817	1,959	0	1,959	55,681	15,710	71,391
8,817	**1,000**	**9,817**	**1,959**	**0**	**1,959**	**55,681**	**15,710**	**71,391**
0	0	0	0	0	0	0	419	419
0	0	0	0	0	0	8,848	0	8,848
0	0	0	0	0	0	9,000	0	9,000
0	**0**	**0**	**0**	**0**	**0**	**17,848**	**419**	**18,267**
0	0	0	0	0	0	353	0	353
0	**0**	**0**	**0**	**0**	**0**	**353**	**0**	**353**
0	0	0	0	0	0	11,700	0	11,700
0	**0**	**0**	**0**	**0**	**0**	**11,700**	**0**	**11,700**
0	0	0	0	0	0	1,500	0	1,500
0	0	0	0	0	0	3,000	0	3,000
0	**0**	**0**	**0**	**0**	**0**	**4,500**	**0**	**4,500**
0	0	0	0	0	0	400	0	400
0	0	0	0	0	0	0	362	362
0	0	0	0	0	0	0	1,200	1,200
0	0	0	2,815	0	2,815	2,815	0	2,815
0	0	0	2,815	0	2,815	3,215	1,562	4,777
0	0	0	0	0	0	500	0	500
0	0	0	0	0	0	250	0	250
0	0	0	0	0	0	217	0	217

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	0	0	0	0	0	500	0	500
0	0	0	0	0	0	534	0	534
0	0	0	0	0	0	745	0	745
0	0	0	0	0	0	405	0	405
0	0	0	0	0	0	4,000	0	4,000
0	0	0	0	0	0	5,300	0	5,300
0	0	0	0	0	0	1,300	0	1,300
0	0	0	0	0	0	1,000	0	1,000
0	0	0	0	0	0	0	7,815	7,815
0	0	0	0	0	0	13,284	7,815	21,099
0	0	0	0	0	0	250	0	250
0	0	0	0	0	0	600	0	600
0	0	0	0	0	0	250	0	250
0	0	0	0	0	0	600	0	600
0	0	0	0	0	0	200	0	200
0	0	0	0	0	0	200	0	200
0	0	0	0	0	0	300	0	300
0	0	0	0	0	0	200	0	200
0	0	0	0	0	0	250	0	250
0	0	0	0	0	0	100	0	100
0	0	0	0	0	0	200	0	200
0	0	0	0	0	0	250	0	250
0	0	0	0	0	0	300	0	300
0	0	0	0	0	0	132	0	132
0	0	0	0	0	0	0	227	227
0	0	0	0	0	0	0	3,232	3,232
0	230	230	0	0	0	0	230	230

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	900	900	0	0	0	0	900	900
0	100	100	0	0	0	0	100	100
0	800	800	0	0	0	0	800	800
0	200	200	0	0	0	0	200	200
0	400	400	0	0	0	0	400	400
0	2,630	2,630	0	0	0	2,132	6,089	8,221
0	0	0	0	0	0	600	0	600
0	0	0	0	0	0	2,700	0	2,700
0	0	0	0	0	0	2,900	0	2,900
0	0	0	0	0	0	4,300	0	4,300
0	0	0	0	0	0	10,500	0	10,500
0	**2,630**	**2,630**	**2,815**	**0**	**2,815**	**32,298**	**15,466**	**47,764**
0	0	0	0	0	0	900	0	900
0	0	0	0	0	0	1,747	0	1,747
0	0	0	0	0	0	350	0	350
0	0	0	0	0	0	0	1	1
0	0	0	0	0	0	0	3,200	3,200
0	0	0	0	0	0	2,997	3,201	6,198
0	350	350	0	0	0	0	350	350
0	0	0	0	0	0	250	0	250
0	0	0	0	0	0	1,000	0	1,000
0	0	0	0	0	0	200	0	200
0	0	0	0	0	0	0	1,300	1,300
0	0	0	0	0	0	0	1,250	1,250
0	350	350	0	0	0	1,450	2,900	4,350
0	0	0	0	0	0	1,500	0	1,500
0	**350**	**350**	**0**	**0**	**0**	**5,947**	**6,101**	**12,048**

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	0	0	0	0	0	700	0	700
0	0	0	0	0	0	400	0	400
0	0	0	0	0	0	1,100	0	1,100
0	0	0	0	0	0	2,750	0	2,750
0	0	0	0	0	0	600	0	600
0	**0**	**0**	**0**	**0**	**0**	**4,450**	**0**	**4,450**
0	0	0	0	0	0	0	2,847	2,847
0	0	0	0	0	0	0	965	965
0	0	0	0	0	0	0	965	965
0	0	0	0	0	0			
0	0	0	1,500	0	1,500	1,500	0	1,500
0	0	0	1,500	0	1,500	1,662	1,930	3,592
0	0	0	0	0	0	200	0	200
0	0	0	0	0	0	0	1,600	1,600
0	0	0	0	0	0	200	1,600	1,800
0	0	0	0	0	0	0	2,080	2,080
0	0	0	0	0	0	0	703	703
0	**0**	**0**	**1,500**	**0**	**1,500**	**1,862**	**9,160**	**11,022**
0	0	0	0	0	0	1,575	0	1,575
0	**0**	**0**	**0**	**0**	**0**	**1,575**	**0**	**1,575**
0	0	0	0	0	0	5,000	0	5,000
0	0	0	0	0	0	450	0	450
0	0	0	0	0	0	3,000	0	3,000
0	0	0	0	0	0	14,000	0	14,000
0	0	0	0	0	0	6,300	0	6,300
0	0	0	0	0	0	10,000	0	10,000
0	0	0	0	0	0	2,500	0	2,500

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	0	0	0	0	0	8,000	0	8,000
0	0	0	0	0	0	7,400	0	7,400
0	0	0	0	0	0	0	3,073	3,073
0	0	0	0	0	0	0	1,000	1,000
0	400	400	0	0	0	0	400	400
0	301	301	0	0	0	0	301	301
0	150	150	0	0	0	0	150	150
0	1,000	1,000	0	0	0	0	1,000	1,000
0	2,000	2,000	0	0	0	0	2,000	2,000
0	2,040	2,040	0	0	0	0	2,040	2,040
0	0	0	6,000	0	6,000	6,000	0	6,000
0	0	0	11,000	0	11,000	11,000	0	11,000
0	0	0	15,000	0	15,000	15,000	0	15,000
0	0	0	3,500	0	3,500	3,500	0	3,500
0	0	0	4,000	0	4,000	4,000	0	4,000
0	0	0	2,000	0	2,000	2,000	0	2,000
0	5,891	5,891	41,500	0	41,500	93,150	9,964	103,114
0	**5,891**	**5,891**	**41,500**	**0**	**41,500**	**98,150**	**9,964**	**108,114**
0	0	0	0	0	0	400	0	400
0	0	0	0	0	0	0	4,779	4,779
0	0	0	0	0	0	0	215	215
0	0	0	0	0	0	562	0	562
0	0	0	0	0	0	417	0	417
0	0	0	0	0	0	500	0	500
0	0	0	0	0	0	506	0	506
0	0	0	0	0	0	384	0	384
0	0	0	0	0	0	960	0	960

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	0	0	0	0	0	0	291	291
0	0	0	0	0	0	6,700	0	6,700
0	0	0	0	0	0	5,500	0	5,500
0	0	0	0	0	0	10,400	0	10,400
0	0	0	0	0	0	2,138	0	2,138
0	0	0	0	0	0			
0	0	0	0	0	0	0	2,995	2,995
0	300	300	0	0	0	0	300	300
0	1,200	1,200	0	0	0	0	1,200	1,200
0	1,500	1,500	0	0	0	33,584	4,786	38,370
0	0	0	0	0	0	200	0	200
0	0	0	0	0	0	0	500	500
0	0	0	0	0	0	200	500	700
0	0	0	0	0	0	1,500	0	1,500
0	0	0	0	0	0	12,200	0	12,200
0	0	0	0	0	0	2,500	0	2,500
0	0	0	0	0	0	0	1,868	1,868
0	0	0	0	0	0	16,200	1,868	18,068
0	0	0	0	0	0	0	6,260	6,260
0	**1,500**	**1,500**	**0**	**0**	**0**	**50,384**	**18,408**	**68,792**
0	0	0	0	0	0	0	2,830	2,830
0	**0**	**0**	**0**	**0**	**0**	**0**	**2,830**	**2,830**
0	0	0	0	0	0	637	0	637
0	0	0	0	0	0	250	0	250
0	0	0	0	0	0	500	0	500
0	0	0	0	0	0	0	257	257
0	0	0	0	0	0	36,500	0	36,500

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	0	0	0	0	0	20,000	0	20,000
0	0	0	0	0	0	9,200	0	9,200
0	0	0	0	0	0	15,800	0	15,800
0	0	0	0	0	0	6,600	0	6,600
0	0	0	0	0	0	5,300	0	5,300
0	0	0	0	0	0	1,800	0	1,800
0	0	0	0	0	0	0	34,900	34,900
0	0	0	0	0	0	0	1,972	1,972
0	0	0	0	0	0	0	1,972	1,972
0	0	0	0	0	0	0	1,034	1,034
0	0	0	0	0	0	0	469	469
0	0	0	0	0	0	0	587	587
0	0	0	0	0	0	0	1,300	1,300
0	400	400	0	0	0	0	400	400
0	1,000	1,000	0	0	0	0	1,000	1,000
0	228	228	0	0	0	0	228	228
0	2,041	2,041	0	0	0	0	2,041	2,041
0	820	820	0	0	0	0	820	820
0	0	0	2,000	0	2,000	2,000	0	2,000
0	0	0	1,800	0	1,800	1,800	0	1,800
0	0	0	3,114	0	3,114	3,114	0	3,114
0	0	0	6,400	0	6,400	6,400	0	6,400
0	0	0	0	3,400	3,400	0	3,400	3,400
0	0	0	0	2,200	2,200	0	2,200	2,200
0	0	0	0	400	400	0	400	400
0	0	0	0	6,738	6,738	0	6,738	6,738
0	0	0	0	5,191	5,191	0	5,191	5,191

FY 1996 ENVIRONMENTAL MANAGEMENT BUDGET REQUEST
(dollars in thousands) [1]

Technology Development		Technology Development	Nuclear Material and Facility Stabilization		NM&FS		EM Totals	
Program Cuts	Uncosted Cuts	Total Cuts	Program Cuts	Uncosted Cuts	Total Cuts	Program Reductions	Uncosted Reductions	Total Reduction
0	0	0	10,735	0	10,735	10,735	0	10,735
0	4,489	4,489	24,049	17,929	41,978	120,636	64,909	185,545
0	0	0	0	0	0	700	0	700
0	0	0	0	0	0	418	0	418
0	0	0	0	0	0	748	0	748
0	0	0	0	0	0	1,866	0	1,866
0	0	0	0	0	0	3,000	0	3,000
0	0	0	0	0	0	2,000	0	2,000
0	**4,489**	**4,489**	**24,049**	**17,929**	**41,978**	**127,502**	**64,909**	**192,411**
0	850	850	0	0	0	0	850	850
0	650	650	0	0	0	0	650	650
0	2,300	2,300	0	0	0	0	2,300	2,300
0	8,614	8,614	0	0	0	0	8,614	8,614
0	12,414	12,414	0	0	0	0	12,414	12,414
0	**12,414**	**12,414**	**0**	**0**	**0**	**0**	**12,414**	**12,414**

PRIVATIZATION

Senator DOMENICI. I think that would be good to have.

Now, take your privatization project idea and pick some site or some piece of a site and tell us how it would work.

Mr. ALM. Well, let us take the advanced mixed waste treatment facility. In that particular situation, we have let the contracts. One contractor was British Nuclear Fuels Limited, which is an American subsidiary of a British reprocessing operation. They will build a process to segregate the waste. And some of the waste, as I recall—I forget exactly how they are going to treat it. I think they will be incinerated. Some of the waste that is very low in radio activity would also be vitrified. The waste would then be sent to the WIPP.

The project would take the waste that is currently stored on the Idaho site, and they would be retrieved—they would be retrieved by the contractor, which is an important point. So they do not have to depend on the Government providing the material. So this is a large project.

Now, we have two projects, as we discussed before, for spent fuel storage. These projects are much less complex. They really involve constructing a building, plus certain associated equipment characteristics to handle the waste.

So that sort of spans the——

Senator DOMENICI. Do they give you a turnkey job under the contract?

Mr. ALM. Well, we do not have a contract. We have one in the advanced waste treatment facility. And the answer is yes. And we have a contract, where we agree to pay for the waste at a unit cost. And the BNFL will put up their own money and will build, own, operate, and ultimately decommission this building.

Senator DOMENICI. And that approach, you can see a way to make it work in a number of areas in the country?

Mr. ALM. I think so, Senator. Privatization of this kind for project finance has become very pervasive worldwide. Many sewage treatment plants, water treatment plants, powerplants, and cogeneration plants are built under these project financing arrangements. So they are not a new phenomenon. It is just that we are applying them to the DOE program in a substantial way.

Senator CRAIG. Mr. Chairman.

Senator DOMENICI. Please.

Senator CRAIG. On the example that Al has just used with British Nuclear Fuels Limited, they currently do something very similar to this. I mean they have a track record in Europe, do they not, of being able to design, operate, and manage this type of facility?

Mr. ALM. Yes; at the Sellafield facility in northern Great Britain, they have vitrifiers. And they vitrify their high-level waste from the reprocessing. The vitrifier they are using here, I believe, is a Duratek vitrifier, which is somewhat different. But they do have a lot of experience.

VITRIFICATION

Senator DOMENICI. Well, I just wanted to make sure that what I understand is correct about vitrification. I understand vitrifica-

tion, as a general proposition applied in a broad way, has not been proven that it is very, very precise as to what kind of waste it has worked on and that it is not large, large quantities. Is that correct or not?

Mr. ALM. Well, vitrification can be a tricky technology. There is no doubt about that. But I would think that BNFL, with the experience they have had and their technical expertise, really believe that they will be able to handle this project. They had bugs that they encountered when they first put in their facilities at Sellafield, and worked them out.

Senator DOMENICI. Well, a site like Hanford is vested with many problems that make vitrification almost an impossibility. We do not even know what is in those tanks until we start taking it out, is that right? They have dumped all kinds of things there. So there is no homogeneous stream anywhere.

Mr. ALM. No; there is not. What would have to be done—we are characterizing the waste at Hanford, and will continue to do so for a substantial period of time. The plan at Hanford is to extract the waste. These wastes, you know, we have evaporated most of the liquid. So the wastes you have are either salt cake or very heavy sludge, some of it, like concrete. So we would have to sluice the waste to get them out of the tank, put them into a tank for the contractor. The contractor would then have to separate the waste. And there are various separation techniques, like ion exchange.

The low-level fraction would be treated by one vitrifier. And that material would be stored on site. The high level, the separated material, would be vitrified separately and would be, obviously, stored on site until a repository was opened, at which time it would be sent to the repository.

Senator CRAIG. Mr. Chairman, one last question.

Senator DOMENICI. Sure.

Senator CRAIG. As it relates to the advanced mixed waste treatment facility, how much waste is there out there that this facility could service—assuming the technology works and that we get it there—that serves as a qualifier, if you will, headed to the waste isolation pilot plant?

Mr. ALM. The number 63,000 metric tons sticks in my head, but I will provide it for the record.

[The information follows:]

ADVANCED MIXED WASTE TREATMENT PROJECT (AMWTP)

Under the contract with British Nuclear Fuel Limited, Inc. (BNFL), 65,000 cubic meters of waste from the Idaho National Engineering and Environmental Laboratory (INEEL) will be processed. This is the amount of post-1970 retrievably stored transuranic waste and alpha-contaminated waste at the INEEL. The contractor's overall schedule for processing this waste must support the Consent Order/Settlement Agreement requirement to ship all of this waste out of the State of Idaho by a target date of December 2015 and a deadline of December 2018. In addition, the contract with BNFL provides DOE with an option to direct the contractor to process up to 120,000 cubic meters of additional waste from the INEEL and other DOE sites. Based on our current estimates, there are approximately 5,000–10,000 cubic meters of existing alpha contaminated waste from other DOE sites that could be processed at the AMWTP, as well as future waste generated as a result of environmental restoration and D&D activities across the complex.

Mr. ALM. The wastes that the contract is designed to deal with right now are the wastes that are stored in buildings. And that is a finite amount.

Senator CRAIG. Right.

Mr. ALM. Whether or not this technology might be used for further pits and trenches is a decision in the future.

Senator CRAIG. OK. Thank you.

Senator DOMENICI. Senator Allard, did you have any additional questions?

Senator ALLARD. No; thank you, Mr. Chairman.

Senator DOMENICI. Well, frankly, I was unaware, Senator, of the change in the compliance relationship that your State has entered into. From what I am hearing, it is probably good for Colorado and good for the U.S. Government that it becomes a more reasonable schedule as to how we get things done, with compliance being more reasonably stated. And I compliment the State of Colorado. We want to get these jobs done, but sometimes the States are making it very, very difficult for us to get them done. There is just no doubt about it.

Senator ALLARD. Thank you.

Senator DOMENICI. And your understanding is as he said about that situation?

Senator ALLARD. Yes; I just toured the Rocky Flats within the last 30 days. And they are obviously moving ahead. And you can see there is cleanup occurring. And I am very hopeful that we will proceed along in a very timely fashion. And I was encouraged by what I saw.

Senator DOMENICI. Well, I just recently visited Oak Ridge. I have not had a chance to get to your site or to Senator Craig's. But I will try before the year is out to see if I can see two or three more. I would like to take a look for myself. I know a little bit about some of the facilities.

Senator ALLARD. Well, if we can facilitate your visit at all, let us know.

GENERAL ACCOUNTING OFFICE REPORT

Senator DOMENICI. Well, we would go with you.

Have you seen the General Accounting Office Department of Energy contract management critique?

Mr. ALM. Yes, sir; I have.

Senator DOMENICI. I do not know that I want to go through all of the suggested shortcomings, but might I just ask you, did you take seriously some of the analysis and conclusions that they have come up with?

Mr. ALM. I did, indeed. As a matter of fact, I meet from time to time with Vic Rezendes, who is in charge of that part of GAO. And this is one of the topics I wanted to talk to him about—our follow-up. We take all GAO reports very seriously.

Senator DOMENICI. OK. Well, I think we do everything we can to be helpful. And we do everything we can to inquire as astutely as we can. But when they put some pretty good people on it—which they have not always done, but I think this is a good group—do you agree with that?

Mr. ALM. Yes, sir; it is a very capable group.

Senator DOMENICI. Then clearly we have to insist that you give us answers on it, or we will find this being used against anything we are trying to do somewhere. So, if you take that seriously, that will be helpful to us.

Mr. ALM. I will be glad to send you a letter, just telling you about what our followup is.

Senator DOMENICI. That would be very helpful.

[The information follows:]

GENERAL ACCOUNTING OFFICE REPORT ON DEPARTMENT OF ENERGY CONTRACT MANAGEMENT

The General Accounting Office (GAO) report is an update of a December 1992 report which identified contract management as a "high risk" area within the Department of Energy (DOE). The thrust of this update is that DOE has made a number of significant improvements to its contract management, but sustained management focus is needed to ensure that improvements will continue. The DOE considers the management issues raised by the General Accounting Office to be significant and fully recognizes the need to take prompt, definitive action to improve the management of its contracts. We agree with the GAO's conclusion that contract reform must remain a high priority within DOE and that "start-up" problems should be addressed during our implementation phase. Accordingly, I assure you that I, along with the senior management of the Department, am fully committed to improving contract management within DOE.

The Department already has taken a number of aggressive actions that address the concerns raised by the GAO. I would like to highlight several recent key initiatives that underscore the Department's commitment to improving its contract management activities.

The Contract Reform Project Office, under the auspices of the Deputy Secretary, will be continued to assure a high-level commitment of the Department's management to contract reform. This office is nearing completion of its Contract Reform Self-Assessment. The Self-Assessment will identify lessons learned in implementing performance-based contracting and specific recommendations to improve the effectiveness of DOE's reform efforts.

The Office of Procurement and Assistance Management will soon issue final regulations to implement significant policy recommendations of the Contract Reform initiative. Key changes to its procurement policies include: implementation of performance-based contracting; restrictions on reimbursement of costs for fines, penalties, third-party liabilities and property loss or damage; requirements for contractor make-or-buy plans; and increased protection of the environment, safety and health. The rulemaking, which has already undergone public review and comment pursuant to a Notice of Proposed Rulemaking, now is undergoing final Departmental coordination.

The Office of Environmental Management (EM) has developed draft guidelines for developing performance criteria and incentives for contracts supporting EM programs. The guidelines now are undergoing internal Departmental review and coordination.

The Office of Policy (PO) has initiated important changes to the Department's management systems to ensure that the Department's strategic goals and objectives cascade to programmatic strategic goals and objectives and are reflected in contract performance objectives. Such initiatives include: development and institutionalization of the Department of Energy Strategic Management System, and development of a new Departmental policy on Performance-Based Management in its operations, including contractor performance. The policy currently is undergoing internal review and approval.

In addition, I want to reiterate that the Department considers contract reform an on-going management initiative, and that we have begun a second phase of actions. Several of the key initiatives of this phase include the following:

—The Office of Procurement and Assistance Management is developing new policies governing the establishment and payment of fees and incentives under performance-based management contracts. The new policies, which will amend the Department of Energy Acquisition Regulations, are undergoing final Departmental review and concurrence prior to publication in the Federal Register as a Notice of Proposed Rulemaking for public comment.

—On March 19, 1997, I initiated a comprehensive review of the Department's contracts for the management and operation of its major sites and facilities. The

focus of the review is to assess whether the performance objectives and incentives under these contracts are well-defined, rational, and appropriate. This review, which is under the direction of the Deputy Assistant Secretary for Procurement and Assistance Management, is a high-priority initiative and has already begun. We anticipate that the review will be completed in August 1997. Concurrently, I directed that future contracts be reviewed by Headquarters to ensure that performance objectives and incentives reflect lessons learned.

—The Office of Procurement and Assistance Management is undertaking several important studies and workshops relating to the administration of its site and facility management contracts. The objective of these studies is to identify key policy and practical issues that have emerged as a result of the Department's aggressive move to performance-based contracting. In addition, a study is underway to assess the appropriateness of the Department's Federally Funded Research and Development Centers.

FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

Senator DOMENICI. Senator Bennett asked me to submit four questions to you. Would you answer them as soon as you can? I do not think I am going to ask them here. These are regarding the Formerly Utilized Site Remedial Action Program. And I think you would will answer those as quickly as you can, will you?

Mr. ALM. I certainly will.

Senator DOMENICI. Senator Craig, did you have any other questions?

Senator CRAIG. No; only to close by thanking you, Mr. Chairman; and, Al, thanking you again. I enjoy working with you. As I mentioned, I appreciate your forthrightness. The projects we have at hand at the INEEL are critical, not just to Idaho but nationally, to try to bring environmental management into perspective and into reality and online and in cost. So I will look forward to working with you now and in the future.

Thank you.

Mr. ALM. Thank you, Senator.

WASTE ISOLATION PILOT PLANT

Senator DOMENICI. I guess, before I close the meeting up, I want to thank you, Senator, for your participation. It is good to have you on board on this subcommittee.

I do want to say, every time we look at how we are going to accomplish this cleanup, it ends up with substantial, of the transuranic waste at least—low-level transuranic—ending up at WIPP, the waste isolation pilot project. And I think it is kind of a unique situation, in that you have an overwhelming percentage of the people of the State supporting it, and the certainly overwhelming proportion of the people in the region supporting it.

Great expenditures have been made by the Federal Government, and I have been somewhat critical of the delays in this last application for licensing between the Environmental Protection Agency and you all. And I have signed a letter indicating my concern. I do not intend to talk about the Environmental Protection Agency with them not being here. If I want to talk to them about what I think they ought to be doing under the statute, I will bring them up here.

I would like to submit for the record, however—and we do not have it here, but we will get it—the letter which we sent to both your Secretary and EPA, and put it in this record.

[The information follows:]

LETTER FROM MEMBERS OF CONGRESS

CONGRESS OF THE UNITES STATES,
Washington, DC, April 16, 1997.

The Honorable CAROL M. BROWNER,
Administrator, Environmental Protection Agency,
Washington, DC.

The Honorable FEDERICO PEÑA,
Secretary, Department of Energy,
Washington, DC.

DEAR SECRETARY PEÑA AND ADMINISTRATOR BROWNER: It has recently come to our attention that contrary to the WIPP Land Withdrawal Act Amendments, legislation signed into law last year, that WIPP will not open in November 1997. The situation has become increasingly disturbing and does not reflect well on either DOE's or EPA's ability to perform the job as mandated by Congress. In addition to not meeting a clearly expressed deadline, it appears the lack of achievement reflects the internal inefficiency, lack of clarity, and poor policy decisions which have plagued both agencies, handling of the WIPP project. The fact that EPA and DOE cannot efficiently handle a project of such national importance, in many ways the symbol of both agencies' environmental management abilities, makes the present delays difficult to understand at times.

In addition, and contrary to the will of Congress, EPA has yet to formally notify the Congress that the WlPP time lines will not be met. EPA and DOE have known since late last year that the Agency would not complete its certification activities on time, which again could be construed as a direct rebuttal of Congressional authority.

A delay in the scheduled opening of WIPP dramatically increases the cost of cleaning up the nation's TRU waste sites. In addition, it establishes a highly undesirable precedent directly impacting on other national nuclear waste clean-up and disposal programs. It is frustrating the most technically and scientifically advanced nuclear waste disposal facility in the world, in which the construction and preparation has been substantially finished since 1992, has yet to open. Finally, a delay jeopardizes disposal agreements between DOE and various states such as Idaho, whose Governor recently wrote the President to express his grave concerns on this matter.

A fundamental problem appears to be EPA's inability to follow its own guidelines. Primarily, 40 CFR 191 and 194 contain guidelines for the regulatory process requiring EPA to evaluate the DOE Compliance Certification Application based on "reasonable expectations", not the worst case standards currently being employed. EPA's decision to not follow its own guidelines has had serious ramifications on the review process while causing DOE to meet standards of proof far exceeding those contemplated in the original EPA guidelines.

When the WIPP Land Withdrawal Act Amendments were drafted, at EPA's suggestion, Congress distinguished between issuance of the application's completeness and the need for additional technical or clarifying information that might arise during the year-long review of the application. Specifically, Congress provided only 45 days from the date of submission of the complete application (October 29, 1996) for EPA to seek additional information from the DOE for completeness. Requests after that deadline were specifically allowed through a provision allowing the EPA "to request at any time additional information from the Secretary (of Energy) to certify, pursuant to subparagraph (B), whether the WIPP facility would comply with the final disposal regulations." Even though EPA suggested the language that draws the distinction, EPA has refused to separate the two issues, insisting that its requests for technical and clarifying information are indicative of an incomplete application. We believe this is a stalling tactic intended to delay a certification decision regarding the WIPP.

A particularly glaring case of EPA's failure to use the reasonable expectation standard while combining the completeness and technical sufficiency issues is vividly clear in the request for additional materials dealing with parameter evaluations, parameter variance determinations, and confirmatory performance assessments. In essence, EPA appears to be preparing to duplicate and rerun all of the computer codes which Sandia National Laboratories developed and perfected over the years. It is doubtful that EPA can complete the process in a reasonable time frame. In fact, duplication of DOE's previously completed work does not add to the body of knowledge which contently exists. However, it does bring to light the following question: Is EPA overfunded to the degree that it can arbitrarily expend time and resources to duplicate DOE's previously completed jobs?

We propose that the EPA evaluate the views of the National Academy of Sciences and also seek valuable insights from the Nuclear Regulatory Commission's process of making similar regulatory decisions. We strongly suggest that the two agencies clearly differentiate between completeness and technical sufficiency in any further requests for the information needed for a completeness determination. In addition, EPA must follow the Congressional mandate and begin the interactive review process leading to a regulatory decision. We see no scientific, legal, or technical reasons for EPA to duplicate DOE's computer codes. We do find strong and compelling reasons to follow "reasonable expectation" guidelines issued in 40 CFR 191 and 194 in reviewing the protection of human health and safety guidelines. Finally, we would ask both agencies to report to Congress the timetable for completion of the regulatory process, recognizing that it is already five months behind schedule.

We can no longer accept the ambiguous and arbitrary nature of DOE's or EPA's handling of the WIPP, particularly in light of Congress's clear intent with the WIPP Land Withdrawal Act Amendments signed into law last year. We strongly encourage both agencies to redouble your efforts to complete those activities necessary to begin receiving waste in this important disposal facility.

Sincerely,

JOE SKEEN,
DAN SCHAEFER,
JOE MCDADE,
JERRY LEWIS,
DUNCAN HUNTER,
MIKE CRAPO,
LINDSEY GRAHAM,
DOC HASTINGS,
ZACH WAMP,
HELEN CHENOWITH,
Members of Congress.

PETE DOMENICI,
STROM THURMOND,
FRANK MURKOWSKI,
LARRY CRAIG,
DIRK KEMPTHORNE,
U.S. Senators.

Senator DOMENICI. I think the administration, in the past, through the Secretary of Energy, has committed to this project and said they support it. So what concerns me is that we ought to have those who work for the President trying to get the job done. And I am not suggesting so far that EPA is not trying to. They had indicated a great degree of cooperation, and I think it worked out very well in setting new standards, which have been challenged. And the hearing is going to take place today, I think, in one of the courts here in Washington, DC. I think three court judges are going to hear that today.

Hopefully they have been as careful as men and women can be, and DOE will prevail, and our Environmental Protection Agency. But I may, before I go to markup on this, have to get both the Department and the Environmental Protection Agency up here together and just ask them where we are going.

How much money have we spent on the WIPP, does anybody remember? For more than 10 years, $250 million or $300 million a year. It is a pretty good project. We ought to have some pretty good engineering from what I can tell.

Did you have anything else you wanted to add?

Mr. ALM. No; I just wanted to say that I appreciated this opportunity and I appreciate, really, the support that this committee has given me. My job is a very challenging and an awesome job. And I really feel that the expenditure of these funds—and they are a large amount of money—and it is very, very important that these

funds are spent in the most productive way possible. And I certainly commit to that end.

ADDITIONAL COMMITTEE QUESTIONS

Senator DOMENICI. Well, I think you have exhibited that and indicated that. You saw me, for those young people, indicate just some relative expenditures. But for cleanup now, we are going to spend about one-half of what we are going to spend for all of the medical and science research on health in the whole of our country. That is a $12.5 billion to $13 billion enterprise. And we are going to spend $7.5 billion, almost $8 billion, on this cleanup. So it is very important, in terms of making sure we have money for other things by getting this job done sooner rather than later.

Thank you very much.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTION SUBMITTED BY SENATOR DOMENICI

FISCAL YEAR 1998 BUDGET REQUEST

Question. Does the budget request for fiscal year 1998, exclusive of the privatization initiative, meet DOE's legal and regulatory compliance requirements?

Answer. The EM budget request for fiscal year 1998 is expected to provide sufficient financial resources to meet the Department's legal and regulatory compliance requirements, and commitments to the Defense Nuclear Facilities Safety Board. As the program resources become more limited, innovation and close collaboration with regulators and stakeholders will be required to achieve the objective of meeting our compliance requirements in the most practical and efficient manner possible. We will work closely with regulators and the DNFSB to assure that we are able to reach agreement on how to achieve this objective.

PRIVATIZATION

Question. It appears that there are three elements central to DOE's ability to be successful in the privatization initiative: (1) DOE must be able to accurately characterize the waste stream being delivered to the private contractor for processing, (2) DOE must be able to prepare tight, well-defined construction and procurement contracts and provide firm management oversight in order to limit Federal liability, (3) DOE must provide a stable, predictable regulatory environment. Could you discuss what DOE has done or plans to do to ensure success in each of these areas.

Answer. First, each privatization contract will define the waste to be processed. DOE will develop these definitions in such a way that there is sufficient specificity to allow a contractor to price the work to be done while also allowing DOE an appropriate level of flexibility. During processing, DOE will verify that the waste being provided to the contractors is consistent with the requirements of the specific contract. An example of this approach is the waste "envelopes" identified in the Hanford Tank Waste Remediation System (TWRS) privatization contracts. These envelopes were developed using existing characterization information for the wastes to be processed and thus provide assurance that DOE will be able to provide the contractors with waste that meets the specifications set forth in the contracts. In implementing this approach on TWRS, DOE will provide waste that is within these limits. Prior to providing a batch of waste to the contractor(s), DOE will verify that the composition of the batch is within the appropriate envelope and, if needed, make any adjustments required to bring the waste into specification.

Second, DOE is developing tight, well-defined construction and treatment contracts. These contracts will be specific about interfaces with the Department, including any materials (e.g., waste) or services (e.g., effluent treatment) that the Department will be providing. The contracts also will clearly define the respective responsibilities of the Department and the contractor with respect to safety, health and environmental requirements (e.g., who is responsible for obtaining any required permits) and business/finance issues (e.g., specifying the timing/basis for paying the contractor for the goods or services called for in the contract).

Third, DOE's primary strategy for achieving a stable regulatory environment is to transition, to the extent practicable, to external regulation of contractor activities. These external regulators include the Occupational Safety and Health Administration, Environmental Protection Agency, Nuclear Regulatory Commission, as well as state agencies such as the Washington State Department of Ecology. Where regulatory oversight continues to be provided by the Department, systems will be put in place that will help ensure that the requirements placed on the contractor are well-defined and appropriate for the work to be performed by the contractor.

An example of the approach is the Regulatory Unit that will report to the Manager of the Richland Operations Office, and will provide nuclear, radiological, and process safety regulatory oversight of the Hanford Tank Waste Remediation System privatization contractor(s). This unit is working closely with the Nuclear Regulatory Commission to assure that the requirements developed parallel those of NRC.

Question. How long will it take the Department to have experienced personnel in place to oversee and manage specific contract performance?

Answer. DOE has experienced personnel in the line organizations to manage and oversee privatization projects. There are certain skills, such as finance and insurance, in short supply among Federal staff. However, this problem has been addressed by procuring outside services. For example, with respect to the Hanford Tank Waste Remediation System contract, the Department has procured financial advice from a firm with broad experience in worldwide project finance. In addition, the Department must address increasing workloads in areas such as workforce transition, cost estimation, and legal counsel.

In an effort to augment the management capability of the privatization program, the Secretary also intends to appoint a senior individual to guide and coordinate the implementation of the Department's privatization initiatives. This individual will report directly to the Deputy Secretary/Chief Operating Officer. Further, the Office of Environmental Management, in coordination with other appropriate DOE offices, will strengthen training programs for DOE personnel involved in privatization initiatives, enhance DOE cost estimating capabilities, and expand and supplement DOE expertise in reviewing privatization solicitations and contracts.

PROJECT MANAGEMENT ACTIVITIES

Question. Has any thought been given to having another government agency, such as the U.S. Army Corps of Engineers, perform project management activities? If not, why?

Answer. No. The Office of Environmental Management does not see the need at this time to employ the services of another governmental agency to perform project management activities at our sites. We believe that our current federal and contractor personnel provide us with the experience needed to manage these activities. The Department has a very good project management training program to supplement the staff's existing profit management expertise as well as train entry level employees through our senior-level project management staff. A recent independent assessment of Office of Environmental Management field sites by the Corps of Engineers found the quality of the baseline technical scope, estimate documentation, project schedules, and the relationships between the technical scope and cost estimates to be good. As we continue to projectize the Environmental Management program our staff will continue to improve these aspects of our project management.

FUTURE USE PROJECT

Question. A significant factor in reducing cleanup costs is the ultimate use of the area in question. What progress has been made in injecting a sense of reality into the land use issue? What are the potential savings if more realistic land use assumptions were used?

Answer. Given the importance of land use to DOE's work, the Department has undertaken a number of planning efforts to ensure that land use considerations are properly weighed in its decisions. The Future Use Project represents the Department's most comprehensive effort to evaluate future use options at DOE sites. As part of the Future Use Project, twenty DOE sites worked with affected governments and communities to develop future use recommendations that could guide environmental management as well as reuse decisions.

The Project culminated in the release of *Charting the Course,* a report that delineates future use recommendations and provides site maps. The recommendations designate parcels according to six land use categories: agricultural; residential; recreational; industrial/commercial; open space; and storage and disposal. At the time of publication, sixteen DOE sites had completed future use plans and corresponding site maps. In total, the recommendations called for open space and industrial/com-

mercial uses for the vast majority of land considered. Less than one percent of the land evaluated was selected for residential and agricultural uses, which require more stringent cleanup levels. (Furthermore, in all cases, recommendations only called for residential use in non-contaminated areas.)

The Baseline Environmental Management Report analysis validates that DOE's current land use goals are realistic and do not call for "cadillac" cleanups. Furthermore, the Future Use Project recommendations were generated with significant public input and demonstrate that affected communities support realistic land use standards.

PRIVATIZATION

Question. The fiscal year 1997 budget included $330 million for privatization projects and the fiscal year 1998 budget requests $1.006 billion for privatization. What are DOE's plans for this program in future years?

Answer. The Department's fiscal year 1997 budget and fiscal year 1998 budget request include twelve privatization projects. The President's fiscal year 1998 budget request is for $1.006 billion for the privatization program. For the outyears, the President's budget includes $800 million for the program in fiscal year 1999; $600 million in fiscal year 2000; $600 million in fiscal year 2001; and $0 in fiscal year 2002. Of the $600 million expected to be requested in fiscal year 2000 and fiscal year 2001, $64 million in fiscal year 2000 and $464 million in fiscal year 2001 is set aside as a reserve. Whether new projects are undertaken from this reserve, or whether additional budget authority will be requested, will depend on the amount previously appropriated for existing privatization projects.

Question. Tell the committee how DOE determined that the financing initiative which is proposed in the 1998 budget was the best approach?

Answer. To improve the cost effectiveness and schedule for the work of the Environmental Management program, the Department has been considering alternatives to the traditional Management and Operating (M&O) contracting method. Increasingly, the Department has been using fixed-price contracts and other incentive-based contracting methods to reduce its costs and obtain the most effective contracts. The Department believes that privatization will, in appropriate circumstances, be very effective in reducing costs and accelerating schedules. In effect, the private sector will provide the funding and assume many of the risks that were formerly borne by the Department. The competitive process alone should sharply reduce the costs to the Department of the contracted products or services. This approach should also substantially reduce the Department's need to build and maintain its own facilities to produce the needed product or service. The effect will be to reduce the Department's life-cycle costs for the project and place the performance risk on the contractors. Several small privatization projects conducted to date have demonstrated that significant savings can be realized through this approach. Additionally, several studies and project analyses have been conducted that indicate a benefit to the Government from privatization. For these reasons, we have made privatization a key element in our plans to accelerate cleanup of the DOE complex.

Question. Isn't this the kind of work that the Federal government should undertake, and not shift risk and responsibility to the private sector?

Answer. Under privatization, the Department remains responsible and accountable to the public for successful cleanup activities. However, DOE is seeking ways to partner with private industry with demonstrated expertise in similar projects to more efficiently and cost effectively accomplish our environmental projects. Increased performance risk on the contractor is expected to spur improvements in cost, quality, and schedule. Similar privatization approaches have been used with success by the Department of Defense.

ESTIMATED SAVINGS FROM CANDIDATE FISCAL YEAR 1998 PRIVATIZATION PROJECTS

[Millions of dollars]

Project name	Site	Fiscal year 1998 funding	Preliminary life cycle cost estimates [1] (escalated at 2.7 percent annually)		Preliminary cost savings estimates [1]
			M&O	Privatization	
TRU waste treatment	OR	77	585	455	130
TWRS phase 1	RL	427	5,450	3,954	1,496
TRU transportation services	CAO	29	854	758	96

ESTIMATED SAVINGS FROM CANDIDATE FISCAL YEAR 1998 PRIVATIZATION PROJECTS—Continued

[Millions of dollars]

Project name	Site	Fiscal year 1998 funding	Preliminary life cycle cost estimates [1] (escalated at 2.7 percent annually)		Preliminary cost savings estimates [1]
			M&O	Privatization	
INEL IAW treatment	ID	3	500	404	96
Power burst facility deactivation	ID	8	11	8	3
Spent nuclear fuel dry/store	ID	108	166	133	33
EM waste disposal	OR	85	298	170	128
Waste pits remedial action (OU–1)	OH	30	170	160	10
FEMP silo 3 waste treat	OH	11	26	24	2
Building 779 decon. and decomm	RF	23	47	25	2
Decommission building 886	RF	13	40	14	26
Spent nuclear fuel dry/store	SR	192	1,415	1,262	153
Total		1,006	9,562	7,367	2,195

[1] Cost estimates include both capital and operating data.

Question. What other privatization approaches were considered?

Answer. In working to improve the cost effectiveness and schedule for the work of the Environmental Management program, the Department generally considered several different basic contracting approaches. DOE and its predecessors have always relied on private sector contractors to carry out a significant portion of the Department's work. The traditional model was the Management and Operating (M&O) cost plus fee approach. Other models DOE has used include the M&O plus performance fee; the Management and Integrating (M&I) approach, fixed.

Studies and analyses that indicate that privatization of specific projects should prove to be cost effective include the following:

—Three independent feasibility studies completed for the DOE Idaho Operations Office all determined that the Advanced Mixed Waste Treatment Facility was a feasible and cost-effective project to be completed by the private sector.

—A Systematic Look at TWRS Privatization, prepared by Pacific Northwest Laboratory, Richland, Washington, January 1995. This was the preliminary feasibility study for TWRS privatization and took a first look at issues surrounding: a workable project scope, site interfaces, and regulatory drivers. A conclusion from the study was that the TWRS project scope should be segregated into manageable phases and that Phase I, the pretreatment and immobilization function, could in principle be privatized.

—Argonne National Laboratory report, "Estimating the Impact of Key Programmatic Risk Allocation Decisions on Phase I Bids and DOE Cost" was developed to facilitate the TWRS contract negotiations and analyzed the allocation of major privatization risks between DOE and vendors. The conclusions supported DOE negotiations with a clearer understanding of the connection between risk sharing and the availability of reasonable financing. A key conclusion of the analysis was that shifting the technical and performance risk from the contractor(s) to DOE (essentially what progress payments would do) would increase DOE's total costs substantially.

—Cost effectiveness analyses also were performed, in accordance with OMB Circular A–94, on privatization projects. These analyses specifically compared the estimated costs of privatization to accomplishing the same work under the traditional Management and Operating contractor approach.

Question. What evidence, e.g., studies or analysis, supports the approach presented in the budget request? What evidence, e.g., studies or analysis, supports the conclusion that using private sector financing will cost the government less than if the government financed the fixed-price contracts through progress payments?

Answer. As discussed below, numerous studies indicate projected cost savings from privatization of specific projects. Although private sector financing is generally more expensive than government financing, the privatization approach is intended to obtain improvements in technical, cost, and schedule performance that outweigh the increased financing costs. A key element of EM privatization is that a contractor is generally paid only for successfully completed services or products that meet the requirements specified in a contract.

Although progress payments under fixed-price contracts may be acceptable in certain circumstances, such progress payments significantly weaken pressures for strong performance. Progress payments prior to completed services or products, increase the government's risk because such payments do not necessarily provide payment for satisfactory performance of waste treatment services, for example. Instead, they provide payment for what may be acceptable interim deliverables that may or may not result in a system capable of providing the product or service being procured. Once progress payments have been made for what may ultimately be an nonviable service/product, there is little likelihood of recovering the payments without invoking a Termination for Default. And if the service/product is provided by a limited liability corporation (LLC) without parent corporation or other appropriate financial guarantees, the Department's recourse in the event of a Termination for Default is limited to the total assets of the LLC. These assets may be extremely limited. Thus, progress payments can result in a major (disproportionate) shift of performance risk and costs from the contractors to the DOE.

Also, when a substantial portion of the project financing is contractor-provided equity, the contractor is most motivated to be a diligent steward of those funds and to make correct, enabling decisions and efficiencies in order to obtain return of that capital. The pressures of rewards for satisfactory performance coupled with the harsh penalties for unsatisfactory performance encourage participants at all levels to strive for the former. Under private financing for the contractor, the financing group serves as an interested third party for review and judgement of the project from its start through completion. If the contractor gets into difficulty, his financial backers usually will have the option and certainly will have the motivation to take effective corrective action, even to the extent of taking over the facility and installing an alternate/new manager to run the operations.

Studies and analyses that indicate that privatization of specific projects should prove to be cost effective include the following:

—Three independent feasibility studies completed for the DOE Idaho Operations Office all determined that the Advanced Mixed Waste Treatment Facility was a feasible and cost-effective project to be completed by the private sector.

—A Systematic Look at TWRS Privatization, prepared by Pacific Northwest Laboratory, Richland, Washington, January 1995. This was the preliminary feasibility study for TWRS privatization and took a first look at issues surrounding: a workable project scope, site interfaces, and regulatory drivers. A conclusion from the study was that the TWRS project scope should be segregated into manageable phases and that Phase I, the pretreatment and immobilization function, could in principle be privatized.

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—Cost effectiveness analyses also were performed, in accordance with OMB Circular A–94, on privatization projects. These analyses specifically compared the estimated costs of privatization to accomplishing the same work under the traditional Management and Operating contractor approach.

Question. What savings are expected to be realized from the privatization approach and what is the basis of the estimate?

Answer. Privatizing projects is expected to be much more cost effective than pursuing a traditional Management and Operating (M&O) contract approach. Significant savings should be realized from the competitive process alone. The savings expected for each privatization project approach are shown in the attached tables.

Many of these estimates are based on comparison of privatization bids to detailed cost estimates by Management and Operating contractors. Most estimates are based on detailed estimates, feasibility studies, or comparative estimates based on analogous costs from other sites. In some cases, the estimates include cost factors based on professional cost engineering judgement.

Question. How did DOE establish baseline costs for individual projects in order to determine anticipated savings?

Answer. Baseline costs were developed through a variety of methods, as shown in the attached table.

BASE OF ESTIMATE

Project	Field office	Basis of estimate		Comments/explanation
		M&O	Privatization	
Prefiscal year 1997 privatization projects:				
Lundry	ID	2	1	Fixed price contract
Pit 9	ID	3	1	Privatization Contract awarded in October 1994. Independent cost estimate performed by ERM Inc.
Laundry	RL	4	1	Life Cycle Cost Analysis verified privatization savings in May 1992. Privatization Contract awarded in August 1992.
Thermal treatment	RL	5	1	M&O Estimate based on different waste streams so direct comparison of savings is not appropriate.
M-area mixed waste	SR	4	1	Vendor: GTS Duratek.
Fiscal year 1997 EM privatization projects:				
Advanced mixed waste	ID	4	1	M&O detailed estimate; privatization fixed price contract.
TRU sludge waste treatment	OR	3	3	Independent Cost Estimate performed for both M&O and Privatization (Jacobs Engineering).
Broad spectrum LLMW	OR	4	4	Parametric cost estimates; using private sector estimates and costs for M&O onsite operations.
Tank waste remediation system—Phase 1	RL	5	1	Developed using M&O costs for same facility.
Fiscal year 1998 EM privatization projects:				
TRU transportation	CAO	2	4	M&O contract awarded to Westinghouse in fiscal year 1995. Privatization estimate developed by DOE project managers (Independent estimate by CTAC to be completed mid April).
Low activity waste treatment	ID	4	6	Feasibility study/cost estimate by October 1997.
Power burst facility deactivation	ID	5	6	Draft REP by December 1997.
Spent nuclear fuel dry/store	ID	5	6	Detailed estimate in process. Draft REP by September 1997.
Silo 3 (OU–4)	OH	5	6	M&O to level 4 by November 1997. Privatization to level 1 by February 1998.
Waste pits remedial action (OU–1)	OH	5	5	Privatization estimate to Level 1 by July 1997.
EM waste disposal	OR	5	4	Peer review done on feasibility study.
TRU solid waste treatment	OR	3	3	Independent cost estimate performed for M&O and privatization (Jacobs Engineering).

Tank waste remediation system—Phase 1	RL	5	1	Developed using M&O costs for same facility. Currently not-to-exceed contract price with firm fixed prices by January 1998.
Building 779 D&D	RF	4	4	Bottoms-up cost estimate by the M&I; privatization assumed to be percentage of M&I.
Decommission building 886	RF	4	4	Bottoms-up cost estimate by the M&I; privatization assumed to be percentage of M&I.
Spent nuclear fuel dry/store	SR	5	6	M&O and privatization based on generic spent fuel facility estimates from ID, modified to reflect a concept recommended by the Research Reactor Task Team Report.

Note: Key-Basis of cost estimates
1=Firm fixed price contract.
2=Cost reimbursement contract with contractually binding performance incentives.
3=Validated bottoms-up estimate/independent cost estimates/peer review.
4=Detailed estimate.
5=Budgetary estimate/conceptual estimate/feasibility study.
6=Best professional judgement.

Question. Rather than asking for $1.006 billion to conduct a large privatization experiment that is estimated to cost the taxpayer over $8 billion, wouldn't it be more prudent to use a smaller, more well-defined set of projects on which to test the privatization concept?

Answer. The Department has been experimenting with privatization since 1993. The initial projects such as the Hanford laundry and the Idaho laundry were smaller and have realized significant savings compared to the Management and Operating (M&O) contractor approach.

The privatization projects included in the Department's fiscal year 1998 budget request range from small, straight-forward projects to large, technically complex projects such as the Tank Waste Remediation System. In all cases, the Department has defined the product or service to be delivered by the project. We believe the advantages of the selected privatization projects outweigh the risks since the taxpayer will only pay for these products or services upon successful performance by the contractor. If these projects were conducted using the traditional M&O approach, funds would be expended for essentially all costs incurred, whether the project is successful or not. Finally, we simply cannot afford to continue our traditional contracting methods and expect to make substantial, cost effective progress in our cleanup over the next decade. The privatization acquisition strategy is an essential component of our path towards remediating our sites.

Question. What steps have been taken or are contemplated to ensure proper oversight will be conducted of the privatized contractors? For example, while most would agree that DOE should not meddle in the day-to-day operations of the privatized contractors, what specific actions are you prepared to take to ensure that contracts are well drawn, that appropriate monitoring is occurring, and that necessary quality assurance processes are in place to ensure that the treated waste it receives meets specifications?

Answer. To manage and oversee the privatized projects, the Office of Environmental Management is establishing a leadership team with experience in project financing, management, legal, procurement, and financial issues to help share and direct the program. The team will review all draft Requests for Proposals to ensure lessons learned from prior privatization projects are incorporated and ensure that information is shared across the complex. Qualified field project managers and procurement specialists will scope the work to be performed, review proposals for technical and financial adequacy, monitor progress and structure reviews of the scope, bids and progress of privatized projects. In addition, the experience that field project managers bring to the job is that they have been, or will be, trained in all aspects of the privatization program and its unique challenges. Contractor project managers and staff with proven track records of performing work similar to the DOE projects will be sought.

The project manager is usually the most important ingredient in a successful project. DOE will carefully review project managers proposed by contractors, and will reserve the right to require the contractor to make a change under certain conditions.

DOE will ensure that management control is maintained, and that the government is well informed about the progress of the work. DOE will conduct senior level reviews for complex projects during scope of work development, conceptual design, and final design, at critical junctures during construction, at delivery of first product or service, and at other times as desirable. In addition, other mechanisms to improve project management will assure that regulatory, technical, safety, and health projects requirements are clearly defined and the respective roles of parties in changing or approving project requirements is clearly articulated. The overall goal is to manage the contracts, not the contractors.

As in the case with the Tank Waste Remediation System at Hanford, moving to subsequent phases of multiple-phased procurements will require DOE authorization to proceed based upon an evaluation of contractor technical, financial, and regulatory approaches, and a determination of their viability.

Management actions later in the projects will focus on ensuring that product specifications and acceptance procedures are clearly defined and implemented; waste feed is provided in the right amounts at the right time (where applicable); private contractor products are reviewed; and all efforts are integrated. Management of the contracts will require establishing and maintaining the technical and programmatic baselines; establishing and managing contracts; authorizing and funding work; establishing a quality assurance and control program and environmental, safety and health programs that will be contractual requirements; and communications with external organizations and stakeholders.

Question. Why did DOE favor privatization projects for selection that had capital components over projects that involved only operating funds?

Answer. The Department has already successfully privatized a number of operations (as opposed to capital) projects such as contaminated laundry services at Hanford and Idaho National Engineering and Environmental Laboratory. Experience with these projects led EM to privatize small waste management projects such as low level radioactive waste treatment at M Area at the Savannah River Site. These projects provided a cost-effective means of obtaining needed services. The Department will continue to look for similar opportunities to privatize operations activities when it is cost effective. Privatizing operations activities differs from privatizing capital projects in that they do not require up-front budget authority. Rather they are executed as a matter of routine business.

Privatization provides a vehicle for the Department to get out of a portion of the construction and facility business. The facilities used for privatized work will be contractor financed and owned. It will allow the Department to purchase a product or service without having to build new facilities that would become another liability at a time when we are trying to reach closure at our sites. The contractor will be responsible for decontamination and decommissioning of facilities in compliance with applicable requirements.

Question. Was it to defer outlays beyond 2002 so that more projects could be started in the near term?

Answer. No. These projects are being requested now because deferring them will cause compliance problems or result in unfundable outyear budget "spikes." If the Department were not pursuing privatization of the projects, EM would have requested additional funding to proceed with these projects using its Management and Operating/Management and Integration contractors. Instead, by using a privatization approach outlays will not occur until the contractor begins to deliver the product or service that meets contract specifications. Substantial outlays will not begin until 2002, mainly due to the fact that the two largest projects (Advanced Mixed Waste Treatment and Tank Waste Remediation System) do not begin operations until 2002 or beyond. This is an advantage since private sector financing will be at risk during this period of time, which provides a major incentive for contractors to bring facilities on-line and deliver services that meet contract specifications as soon as possible. If the traditional Management and Operating approach was used for these capital-intense projects, it is clear that schedules would be extended, costs would be greater, and the incentive to succeed would not be nearly as great. Enabling necessary work to commence sooner through privatization will help accelerate the pace of cleanup and reduce mortgages.

Question. Doesn't the privatization initiative give DOE greater control and discretion than if the proposed projects were line items, since funds can be used for different projects without reprogramming action?

Answer. The fiscal year 1998 budget request presents the privatization projects we intend to fund and the level of funding for each. We recognize that the funding associated with these projects is very significant. The Department has submitted proposed authorization language to establish controls for privatization projects, similar to line-item controls. We are willing to work with your Committee and the Congress to develop additional appropriate funding controls for these projects.

Question. Given that DOE has promised to consult with the Congress, wouldn't it be better to treat the projects as line items where Congressional control would be greater?

Answer. The Department does not object to the treatment of privatization projects as line items.

Question. Does the Federal government accept any liability for the cost estimate of the contractor since it has legal responsibility to dispose of the waste? Since DOE has the legal obligation to dispose of the wastes, what happens if a contractor fails to perform?

Answer. In general, DOE does not intend to accept liability for cost estimates of contractors who perform work under fixed-price contracts. It is possible, however, that in particular cases, DOE and the contractor might agree to some contractual provisions which would allocate risks for erroneous cost estimates under a fixed-price contract (e.g., if specified contingencies arise). It is also possible that grounds for contract claims might be raised by contractors in certain recognized circumstances (e.g., impossibility of performance). But as a general principle, DOE does not intend to accept liability for erroneous contractor cost estimates in fixed-price contracts because DOE believes that under such contracts the contractor should bear the burden of performing within the price, time frame and other requirements agreed to by the parties.

With regard to any responsibility by DOE to ultimately assure that waste for which DOE is legally liable is disposed of, DOE would retain the right to terminate a contractor for default if it does not meet its contractual obligations and to engage

another contractor to complete the necessary work. In such a case, DOE would have the right to assess damages against the defaulted contractor for reprocurement costs that DOE might incur.

Question. Now the budget request for fiscal year 1998 includes 11 new privatization projects. How were these projects selected for inclusion in the 1998 budget? Do DOE regulators and stakeholders agree with the approach DOE is proposing to use for these projects?

Answer. The 11 new projects selected for the fiscal year 1998 request were selected from a list of over 40 candidates. The projects were selected after considering several factors, including cost effectiveness, cost engineering data, project definition/characterization (i.e., is there a definable end product or service) and stakeholder/regulator issues. When the Department's Congressional budget request was submitted, these 11 projects appeared to have the characteristics required of good firm fixed-priced contract candidates. As the fiscal year 1998 budget was formulated, regulators and stakeholders were made aware that these 11 projects were to be included as privatization candidates and were generally supportive. As the competitive process for these projects progresses, each project will continue to be evaluated as new information becomes available that may affect the cost, scope or regulatory requirements of the project.

Question. Which of the 11 projects were included in the EM program plan for initiation in fiscal year 1998?

Answer. Twelve projects were included in the EM fiscal year 1998 Congressional Budget Request (CBR). Of the twelve projects, the following eleven were included for initiation in fiscal year 1998: Contact Handled Transuranic Waste Transportation, Carlsbad; Spent Nuclear Fuel Dry Storage, Idaho; Environmental Management/Waste Management Disposal, Oak Ridge; Silo 3 Residue Waste Treatment, Ohio; Decommissioning Building 779, Rocky Flats; Decommissioning Building 886, Rocky Flats; Power Burst Facility Deactivation, Idaho; Waste Pits Remedial Action, Ohio; Low Activity Waste Treatment, Idaho; Spent Nuclear Fuel Transfers & Storage, South Carolina; and Transuranic Solid Waste Treatment Project, Tennessee.

The twelfth project, the Tank Waste Remediation System (Washington) was initiated in fiscal year 1997 and additional funding was requested in the CBR for this project.

Question. Have any projects been moved up in time simply to take advantage of the privatization funds requested?

Answer. No, the privatization projects in the budget request were proposed in fiscal year 1998 for several reasons. First, most of the projects were proposed in order to meet regulatory milestones. Delaying these projects would likely adversely affect the program's ability to meet compliance agreement milestones and could expose the Department to significant fines and penalties for noncompliance.

Additionally, several privatization projects that are not compliance-driven were proposed in order to reduce program life-cycle costs and achieve other important program goals. Specifically, three of fiscal year 1998 privatization projects involve decontamination and decommissioning of facilities. The selection of these projects was not driven by the need to satisfy compliance milestones. These projects—the Idaho Power Burst Facility deactivation, the Rocky Flats Building 779 decommissioning, and the Rocky Flats Building 886 decommissioning—were selected because of their strong mortgage reduction potential. The privatization funding will substantially reduce life-cycle costs.

Another project—the Savannah River Site spent nuclear fuel transfer and storage facility—was not driven by regulatory milestones but rather by its mortgage reduction potential and its importance to implementing the foreign research spent nuclear fuel program, a key element of the Administration's non-proliferation policy. Managing spent nuclear fuel in the proposed dry storage facility will be significantly more cost-effective than maintaining it in the present aging wet storage facilities. Additionally, the project is needed to meet commitments made in the May 1996 Record of Decision for Foreign Research Reactor Spent Fuel that the fuel will be prepared for interim dry storage in a "road ready" form for shipping and disposal in a geologic depository. Finally, removing the fuel from wet storage is consistent with recommendations in the 1994 Action Plan to Resolve Spent Nuclear Fuel Vulnerabilities.

Question. Why is only the capital portion of the projects reflected in the budget request? Doesn't this fail to show the true Federal obligation since it will cost $2.8 billion to construct the fiscal year 1997 and 1998 projects, and it will cost an estimated $5.8 billion to operate them?

Answer. Only the $3.33 billion capital portion of the projects is reflected in the budget request because the privatization account only funds the capital portion of privatization projects. The $5.8 billion in operating outlays will be funded out of the

operating budget The fiscal year 1998 Congressional Data Sheets for the privatization projects do include the total project cost for each of the projects. The total project cost includes both the capital and operations costs for the total life cycle, and is presented in the Data Sheets by year.

Question. Of the $639 million being requested for the 11 projects, how much will actually be spent in fiscal year 1998?

Answer. None of the funding being requested for the 11 projects in fiscal year 1998 will be paid out in fiscal year 1998. All of the funds will be obligated to the 11 projects when the contracts are awarded. However, payments under the contracts will not occur until the contractor begins to deliver a product or service that meets the contract specifications or if the government terminates the contract for convenience.

Question. Which of the projects could be deferred into fiscal year 1999 or beyond?

Answer. The Department believes that the President's budget request is the appropriate level to fund privatization in fiscal year 1998 and to provide assurances to the private sector of the Department's commitment to privatization. Deferral would increase outyear needs and affect budget caps under recent budget agreements.

Insufficient funding for privatization in fiscal year 1998 would increase both the short- and long-term costs of the Environmental Management Program, would disrupt the progress that has been made in accelerating the cleanup of name of the Department's contaminated sites, and could subject the Department to significant fines and penalties for failure to meet milestones in compliance agreements and other legal requirements in 1998 and later years. Moreover, deferral of substantial funding for the Department's privatization program from fiscal year 1998 would be expected to cause serious problems because of the difficulty of obtaining major increases in outyear funding under the statutory caps on discretionary spending under the Bipartisan Budget Agreement. This situation will be exacerbated significantly if the Committee on Appropriations also rejects the Department's request for full up front funding for construction projects in the Defense Assets Account.

We are willing to work with you to identify the impacts on any funding reductions below this level.

Question. Which of the 12 projects are required to meet compliance agreements? Are all contained in the Ten Year Plan?

Answer. Eight privatization projects included in the fiscal year 1998 budget all involve important regulatory milestones that would be adversely impacted by delaying the projects. As described below slowing the pace of these privatization projects would likely adversely impact compliance agreement milestones and potentially result in significant fines and penalties for noncompliance:

Carlsbad Area Office TRU Transportation.—Site-specific treatment plans developed under the Federal Facility Compliance Act and the associated consent orders and agreements with the states and EPA (across the DOE complex) require disposal of transuranic (TRU) wastes. For example, the Idaho Settlement Agreement requires the Department to begin shipment of INEEL TRU waste to WIPP by April 30, 1999 and to have shipped no less than 3,100 cubic meters by December 31, 2012. Slowing down privatization might diminish DOE's ability to transport TRU wastes located at various sites to WIPP for disposal and pose compliance problems for INEEL as well as Oak Ridge and Rocky Flats. The WIPP is expected to begin receiving wastes in 1998.

Idaho Advanced Mixed Waste Treatment Facility.—The Idaho Settlement Agreement requires: treatment of TRU wastes to permit ultimate disposal outside the State of Idaho; facility construction completion by December 31, 2002; facility operation by March 31, 2003; and shipment of all TRU waste, currently estimated at 65,000 cubic meters in volume, at INEEL to WIPP or another facility by a target date of December 31, 2015, but in no event later than December 31, 2018. Slowing down privatization would affect waste treatment plans related to the privatized Idaho Advanced Mixed Waste Treatment Facility and would severely impact our ability to meet the 2002 milestone and could impact subsequent milestones. The extent to which these milestones are missed may also impact the Navy's schedule for shipping spent nuclear fuel to Idaho. This project does not require new budget authority in fiscal year 1998.

Idaho Spent Nuclear Fuel Dry Storage.—The Idaho Settlement Agreement requires DOE to commence spent fuel loading into dry storage by July 1, 2003, and all spent fuel to be transferred from wet storage at the INEEL by December 31, 2003. This entire project is a fiscal year 1998 privatization project. Delaying this project may compromise our ability to meet the 2003 milestone.

Fernald Waste Pits Remedial Action.—This proposed fiscal year 1998 privatization project is to excavate, process, treat and load for off-site shipment low-level radio-

active waste from eight waste pits. Enforceable milestones from the EPA-approved Remedial Action Work Plan include the initiation of operations (i.e., loading of waste) by March 1, 1999; and completion of operations (including above-ground decontamination and decommissioning) by May 31, 2005. Delaying this project will cause non-compliance with the 1999 milestone.

Oak Ridge TRU Waste Treatment.—This proposed fiscal year 1998 privatization project is to meet the compliance requirements of the Tennessee Department of Environment and Conservation Commissioner's Order that the DOE initiate treatment of TRU waste by June 2002.

Oak Ridge Broad Spectrum Low-Level Mixed Waste.—The Site Treatment Plan developed under the Federal Facility Compliance Act for the Oak Ridge Reservation (ORR) with the State of Tennessee requires a complete Statement of Work for treatment of low-level mixed waste by September 30, 1998. DOE is proposing to use privatization as a means of obtaining the needed treatment capability.

Oak Ridge EM/WM Disposal.—The Federal Facility Agreement enforceable milestones for ORR CERCLA cleanup are completion of a Remedial Investigation/Feasibility Study by July 1997, submittal of a Proposed Plan by October 1997, and issuance of a Record of Decision by April 1998. This fiscal year 1998 privatization project provides on-site waste disposal capacity for these mandated cleanup activities.

Richland TWRS Phase 1.—The Tri-Party Agreement among DOE, the State of Washington, and EPA requires immobilization of all tank waste by 2028. Delays in this project as a result of insufficient funding would subject the Department to fines and penalties for missed TPA milestones for the treatment of the tank wastes.

It should be emphasized that privatization is a key element of the Environmental Management program's strategy to accelerate cleanup of its sites. Privatization of specific projects will reduce taxpayer costs and achieve the desired results more quickly. If privatization funds are not available to complete the designated twelve projects, they will need to be funded under the traditional budget authority. This will have a negative effect on other projects. By delaying these other projects, the Department will incur significant additional costs, lengthen completion schedules, and potentially cause other compliance problems. The privatization projects in the budget request were selected for their mortgage reduction, compliance, or non-proliferation benefits. All twelve of these projects are included in the Accelerating Cleanup: A Focus on 2006 Discussion Draft (Formerly the Ten-Year Plan). Specifically, three of the fiscal year 1998 privatization projects involve decontamination and decommissioning of facilities. The selection of these projects was not driven by the need to satisfy compliance against milestones. These projects—the Idaho Power Burst Facility deactivation, the Rocky Flats Building 779 decommissioning, and the Rocky Flats Building 886 decommissioning—were selected because of their strong mortgage reduction potential. The privatization funding will allow substantial acceleration of the work, thereby substantially reducing life-cycle costs.

Another project—the Savannah River Site spent nuclear fuel transfer and storage facility—was not driven by regulatory milestones but rather by its mortgage reduction potential and its importance to implementing the foreign research reactor spent nuclear fuel program, a key element of the Administration's non-proliferation policy. Managing spent nuclear fuel in the proposed dry storage facility will be significantly more cost-effective than maintaining it in the present aging wet storage facilities. Additionally, the project is needed to meet commitments made in the May 1996 Record of Decision for Foreign Research Rector Spent Nuclear Fuel that the fuel will be prepared for interim dry storage in a "road ready" form for shipping and disposal in a geologic repository. Finally, removing the fuel from wet storage is consistent with recommendations in the 1994 Action Plan to Resolve Spent Nuclear Fuel Vulnerabilities.

HANFORD TANK WASTE REMEDIATION SYSTEM (TWRS) PROJECT

Question. Briefly tell the committee about the Hanford Tank Waste Remediation System (TWRS) project which DOE is requesting $427 million for in fiscal year 1998. Explain the phasing of the project, the reason for each phase, and the options available to the Federal government at the end of each phase.

Answer. The mission of the TWRS project is to store, treat, and immobilize highly radioactive Hanford Site waste (including current and future tank waste and cesium/strontium capsule disposition) in an environmentally sound, safe, secure, and cost-effective manner. The TWRS privatization project for which DOE is requesting $427 million in fiscal year 1998 deals with the treatment and immobilization of tank waste.

The current approach to TWRS privatization is divided into Phase I and Phase II procurements. The current procurement is for Phase I, in which 6 percent to 13 percent of the tank waste will be treated and immobilized. Contracts for Phase I were signed on September 25, 1996 with Lockheed Martin Advanced Environmental Systems and BNFL, Inc. Phase I will be completed in 2007 to 2011. Phase II will be a full-scale production phase that will be initiated in 2004, completed in 2028, and in which the remainder of the waste will be treated and immobilized.

Phase I is divided into two parts, Part IA and Part IB. Part IA is the first 20 months of the Phase I contracts during which the contractors are preparing deliverables such as a technical report, a safeguards and security plan, a business and financial plan, and determining the fixed unit prices for treated waste during Part IB; Part IB is the remainder of the Phase I contracts during which facilities will be constructed and waste will be treated.

At the end of Part IA, the government has the option to authorize none, one or both of the contractors to proceed with Part IB, based on the DOE's evaluation of the contractors' ability to meet contract requirements in Part IB, provide best value to the Government, and perform Part IB services for a reasonable price. A key feature of the Phase I contracts is that the contractor(s) authorized to proceed with Part IB will be paid only for successfully completed waste treatment services; they will receive no "progress payments." The contractor(s) will be required to secure private financing (a combination of debt and equity) to cover their pre-operational expenses. This large front-end investment is expected to provide a substantial incentive to the contractor(s) to meet technical and schedule requirements.

With respect to Phase II, the government has made no commitments to a particular approach to procuring/contracting for this work. The selected approach will be based, in large part, on the lessons learned from Phase I of TWRS privatization as well as other privatization projects (both by DOE and other Federal agencies).

Question. What is the total capital cost of Phase IA and IB? Phase II? What is the estimated life cycle operating cost for each Phase and what is the increase in M&O costs over the life of the project? On what do you base these cost estimates?

Answer. The attached table provides the current capital and expense estimates for the TWRS privatization, and M&I support, scope of work. The costs for Phase I and Phase II are based upon cost estimates developed in fiscal year 1996. The M&O cost estimates are based upon the fiscal year 1995 Multi-Year Work Plan. For comparability, the M&O and privatization costs are provided both in constant fiscal year 1997 dollars, and year of expenditure dollars. DOE recognizes that these estimates (as well as any estimate of cost savings to be realized through TWRS Privatization) are subject to considerable uncertainty. The actual savings from TWRS Privatization will be better know as Phase IB gets underway and is completed.

[Amounts in billions]

	Phase I				TWRS privatization			M&O
	Privatization contractor	Requires M&O support	Extension private contractors	Extension M&I support	Phase I	Phase II	Total	
Capital BA	$1.45	.....	.....	.....	$1.45	$8.5	$10.05	([1])
Expense BA	2.5	0.9	2.6	0.5	6.5	13.0	[2] 19.50	([1])
Total BA, escalated dollars	3.95	0.9	2.6	0.5	7.95	21.5	29.45	$40.4
Total BA, constant fiscal year 1997	3.2	0.6	1.8	0.3	5.9	15.0	20.9	26.1

[1] The capital and expense breakout is not available for the M&O.
[2] In Phase IA, all of the expenditure, $54M, is expense.

Question. What are the expected savings using the privatization approach for TWRS? What evidence, e.g. studies or analysis, supports the estimates of expected savings?

Answer. As shown previously, in the response to Questions 32 and 33, the Department has estimated that the total life-cycle cost of the elements of the remediation program under a competitive, privatized approach would be approximately 27 percent less than the traditional Management and Operating (M&O) cost-plus contractor approach. The basis of the privatization cost estimate is the independent cost estimates of Phase I and Phase II performed for DOE–RL in fiscal year 1996. As

noted in the response to the previous question, the basis for the M&O estimate was the fiscal year 1995 Multiyear Work Plan.

The 27 percent cost savings estimate is for Phase I and II. A previous DOE estimate of 28 percent cost savings was for Phase I only. We recognize that these estimates are subject to considerable uncertainty. The actual savings from privatization will be better known as Phase I gets underway and is completed.

Question. Tell the committee about the waste in the tanks. How homogeneous is the waste? How important is waste characterization to the success of processing the waste in the tanks?

Answer. The tank waste at Hanford exhibits great variability. To deal with this lack of homogeneity, DOE has defined four waste composition "envelopes" for Phase I of TWRS privatization. Each of these envelopes specifies the compositional range of a particular type of tank waste to be provided by DOE to the contractor for treatment. Waste treatment will be initiated in 2002.

The DOE is committed to provide waste feed within the feed envelope limits. To reduce DOE's risks, the feed composition limits are generally conservative. Over 50 percent of the Low Activity Waste (LAW) feed will be derived from tanks which have been characterized extensively having both chemical and radionuclide analyses. The additional waste characterization required to support Phase I will be completed by 2002. Process testing for retrieval and delivery activities are in progress. Methodologies currently being implemented at West Valley Nuclear Services and the Defense Waste Production Facility at the Savannah River Site will serve as a baseline for the feed validation strategy.

Question. Do you believe that the waste in the tanks has been fully characterized? How many tanks are there at Hanford and how many characterization samples, relevant to the privatization initiative, have been taken from each tank?

Answer. By the end of fiscal year 1996, DOE had sampled and analyzed 93 of 177 tanks. By the end of fiscal year 1997 DOE will have completed sampling and analysis of about 111 tanks (63 percent). In addition, DOE has completed tank contents estimates for all tanks based on fill history and chemical process records.

Sampling and analysis of wastes from these tanks supports a wide range of programmatic activities which include privatization. For example, sampling activities support establishing that wastes are safely stored, interim stabilization of tanks, evaporator operations, and privatization. Tank samples from these tanks are used to establish waste dissolution and washing parameters necessary to meet the four waste feed "envelopes" discussed above.

DOE is now obtaining characterization data to close the remaining safety issues (e.g., flammable gas) and on obtaining detailed chemical information of tank wastes to meet contractual (privatization) obligations.

Question. What are DOE's plans for additional characterization of the waste in the tanks at the Hanford site?

Answer. Characterization activities needed to privatize treatment of all Hanford tank waste will be completed by 2002.

Question. How much of the $170 million appropriated for fiscal year 1997 will actually be spent by the end of the fiscal year?

Answer. The Department only obligates funds for successful privatization when a contractor delivers a product/service of adequate quality in a safe manner. Because the privatized projects will not likely result in a final product in fiscal year 1997, it is unlikely that the Government will outlay funds in fiscal year 1997. Nonetheless, the contractors are already beginning work, investing their own capital. Using traditional funding methods, the Government would have paid for this activity even though it did not yet result in a final product.

Under privatization, the Department is required to have sufficient budget authority in advance to cover the privatized contractors' investment in facilities, equipment, interest, and return on equity during the construction period in the unlikely event that the Department would terminate the contract for its convenience. The privatization funding represents the Department's estimate of the contractors' cumulative investment and interest costs, and return on equity. This information was used to develop a schedule of estimated budget authority requirements.

Contractors authorized to proceed with Part IB of the TWRS privatization contracts will be paid only for successfully completed waste treatment services; they will receive no "progress payments." Thus, although the $170 million may be obligated to the contracts (if contractors are authorized to proceed with Part IB), none of the $170 million will outlay by the end of the fiscal year. Unless the contract is terminated for convenience by the government, the $170 million and subsequent year funds will not be spent until waste processing takes place. This is scheduled to begin in June 2002.

The $170 million is intended to provide a contingency reserve and to build the necessary funding reserve to pay for the service upon delivery. The funding level was established to provide a level amount over the necessary time period to pay the total costs. If the Department were to delay this authorization and appropriation until the outlay was required upon completion of the treatment, then the funding "spike" would be too high—it would exceed the budget agreement targets, when combined with the Department's base budget needs.

Question. How much funding is needed in fiscal year 1998 to cover work to be performed by the contractors? How much of the $427 million budget request will be spent in fiscal year 1998 for work on Phase I?

Answer. The President's fiscal year 1998 budget requests $427 million. In our September 3, 1996 letter to you, and Senators Murray, Domenici and Johnston, we indicated that these funds are needed to ensure that the Department has sufficient appropriation authority in advance to cover the privatized contractors' investment in facilities, equipment, interest and return on equity during the construction period in the event that the Department were to terminate the contract for convenience. Unless termination for convenience occurs, the $427 million and subsequent funds will not outlay until waste processing takes place. Under the current schedule, waste processing would begin in June, 2002.

Question. What will DOE do differently in the contracting and management of the TWRS project in light of the problems with the Pit 9 project in Idaho?

Answer. The TWRS privatization contract offers the government a number of advantages over the Pit 9 contract. The contractors are the primes to the Department rather than subcontractors to the M&O contractor. The roles of the Department, the site contractor and the privatization contractors are clearly defined. The TWRS contract clearly defines the safety, environmental, and regulatory responsibilities of the contractors and the Department, including specifying that the contractor must reimburse the Department for fines against the Department caused by the contractors.

After being authorized to proceed with Part IB of the contracts, the contractors will receive no progress payments; the contractors will receive payments only for waste treatment services at a pre-agreed price per unit of waste treated successively. Finally, in contrast to Pit 9, the contractors will have a large front-end investment which the Department believes will provide substantial incentive to meet both the technical and schedule requirements.

TECHNOLOGY DEVELOPMENT

Question. A recent Congressional Research Service report indicated that DOE had spent about $2.0 billion to fund 1,370 different technology development projects and that only 50 of those had been deployed or used for actual cleanup. They stated that another 12 technologies had been selected for deployment. Is this information accurate, and if so, how do you respond to what appears to be fairly poor results for the money invested in technology development?

Answer. The data furnished in response to the Congressional Research Service request represented technology projects, many of which were components of a technology or technology system. This information was taken from work in progress and was the best data available at the date it was compiled. We have subsequently refined these data, which currently indicate that Environmental Management's science and technology program has sponsored over 700 separate technologies and systems since its inception, over 100 of which have been implemented or selected for implementation.

Innovative or alternative technologies are being used and will continue to play a critical role in reducing risk, lowering the costs of cleanup, and accelerating the schedule for cleanup. Barriers, such as resistance to the use of new processes over traditional methods, must be overcome. We have established mechanisms that bring users, regulators, and other stakeholders into the decisionmaking processes in order to facilitate implementation of new technologies as they are successfully demonstrated.

Question. How will the Technology Development program need to be changed in light of privatization, which, because of risk reduction, tends to limit the use of new, more risky technologies?

Answer. Under a privatization setting, the technology development program can play a dual role: (1) to help develop market capabilities by providing new and improved technologies to the private sector that do not currently exist through technology demonstrations at DOE sites and reducing the business risks associated with applying innovative technologies; and (2) to improve DOE's capability to write and manage performance specification based contracts through technology demonstrations that establish performance data.

Question. Is a shift of priority to longer term research warranted? Explain why or why not.

Answer. We do consider that a program of longer term research should be part of the Environmental Management program. And, in fiscal year 1996, at the direction of Congress, an Environmental Management Science Program (EMSP) was established, in partnership with DOE's Office of Energy Research (OER), to target long-term basic research for environmental problems so that "transformational" or breakthrough approaches will lead to significantly reduced long-term environmental management costs and reduced risks to workers and the public. The EMSP bridges the gap between the broad fundamental research that has wide-ranging applicability, such as that supported by the OER, and needs-driven applied technology development conducted within the Environmental Management's technology development program. The Environmental Management program requires a balance between longer term research and technology development to support the EM cleanup mission.

Question. The Office of Science and Technology estimates that cost savings from the deployment of technologies developed through the Technology Development program could be as high as $35 billion. What is the basis of this estimate and how will the greater use of privatization affect projected savings?

Answer. The Office of Science and Technology's potential cost savings estimate of $22 to $34 billion represents a compilation of estimates gathered from our field offices on a sampling of innovative technologies. For this study, the life-cycle cost estimates of an emerging alternative technology were compared with that of a well accepted baseline technology to arrive at the potential cost savings to DOE. The Army Corps of Engineers reviewed our analyses of these 37 technologies and determined that substantial cost savings in the range of $20 billion can be realized from use of technologies.

The need for improved, cost-saving technologies would continue to exist under a privatization scenario or otherwise, and successful demonstrations of innovative technologies can help reduce the business risks associated with deploying a new technology.

Question. Why is it necessary to have a new $50 million effort to deploy proven technologies?

Answer. This initiative serves as a competitive catalyst to spur widespread application of innovative technologies, expediting cleanup and compounding cost savings. The initiative will fund the first application of a technology meeting a multi-site performance specification. These successful implementations sponsored by the initiative will enhance acceptance and widespread deployment of innovative processes by decreasing the cost of the life cycle of the EM program and reducing the business risks associated with using new technology.

Question. Setting aside the new deployment initiative, what is being done by DOE, other agencies of the Federal government, the private sector and regulators to bring about acceptance of these proven technologies?

Answer. Environmental Management's science and technology program has established processes and mechanisms among other agencies, the states, and stakeholders to facilitate acceptance of innovative technologies. For instance, through the Western Governors' Association, an Interstate Technology Regulatory Cooperation (ITRC) Work Group was formed consisting of the Departments of Energy and Defense, the Environmental Protection Agency and 26 states. This partnering represents a concerted effort to focus attention on removing barriers to the development and deployment of innovative and alternative environmental technologies. An ITRC success story is the Cone Penetrometer, which was certified because of a successful demonstration in California and is now accepted by the other participating states. This eliminates the time and costs associated with duplicative verification work. A similar effort is a Southern States Energy Board (SSEB) memorandum of understanding between 17 states and territories agreeing to share permitting data.

Another process is the Rapid Commercialization Initiative (RCI) interagency/interstate partnership including the Departments of Commerce, Energy, and Defense, the Environmental Protection Agency, the states represented by the Western Governors' Association, Southern States Energy Board, and the California Environmental Protection Agency. RCI provides services for demonstrating and verifying innovative technologies by providing a collaborative and collegial team to work to overcome barriers. In March 1996, ten RCI projects were selected in response to a solicitation for proposals from private sector technology holders. RCI is focussing on eliminating the barriers to implementation and facilitating the verification and permitting services for these ten technologies.

F AND H CANYONS AT SAVANNAH RIVER SITE

Question. What are DOE plans for the F and H Canyons at the Savannah River Site in South Carolina?

Answer. The current mission for the canyon facilities is to stabilize the nuclear materials at the Savannah River Site (SRS) as defined in the Department's February 28, 1995, Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 94–1, the Experimental Breeder Reactor-II slugs contained in a failed canister, and the Taiwan Research Reactor spent fuel. These materials require stabilization in order to eliminate potential environmental, safety and health vulnerabilities.

The Department is currently evaluating several strategies for the most efficient utilization of the canyon facilities to meet these missions as well as other likely and potential missions. The recommended strategy will be documented in a plan expected to be submitted to the Congress in July 1997 in response to Section 3142 of the fiscal year 1997 Defense Authorization Act.

Question. Has DOE studied the possibility of using the Canyons to expedite DOE's clean up effort?

Answer. Yes. As part of the Department's clean up effort, canyon facilities are currently being utilized to stabilize nuclear materials and have several potential future material stabilization and disposition missions, as described above. The Department is currently evaluating various canyon utilization strategies in the process of developing the plan to be submitted to Congress in accordance with Section 3142 of the Defense Authorization Act for the Fiscal Year 1997, as discussed above.

Question. The Committee understands that significant savings in both time and money may be possible by continued operation of both of the Canyons. Is this true? If it is, what are the potential savings and what needs to be done in fiscal year 1998 to pursue this option?

Answer. The Department's ongoing evaluation of canyon utilization strategies, cited above, includes consideration of the operating schedules and costs associated with implementation of the various strategies. Annual costs for fiscal year 1998 through fiscal year 2017 are being included in the evaluation.

WASTE ISOLATION PILOT PLANT (WIPP)

Question. What is the basis of EPA's recent notification that review of DOE's compliance certification application of the WIPP facility would be delayed at least 6 months?

Answer. The Environmental Protection Agency (EPA) has requested additional information that EPA needs to evaluate the compliance certification application submitted by the Department of Energy (DOE). DOE is providing the information and conducting the additional analyses requested by EPA, including verifying the performance assessment with parameter values selected by EPA. DOE and EPA have worked cooperatively to determine a target schedule for completing these efforts. The current schedule has the EPA issuing its final decision on certification in April 1998.

Question. How likely is it that EPA will complete certification activities by April 1998?

Answer. The Environmental Protection Agency (EPA) has established April 30, 1998, as the date the Agency will complete all of the administrative and technical review processes, and issue the rule on the Waste Isolation Pilot Plant's (WIPP) compliance with 40 CFR 191 and 194. The Department of Energy (DOE) is working with EPA on a daily basis to ensure that all information requested by EPA is provided to the Agency in a timely manner to facilitate meeting its schedule. DOE is confident that the Department will provide EPA with the requested information on schedule so as to allow EPA to meet the April 1998 date. EPA and DOE will continue to seek schedule efficiencies wherever possible.

Question. What are the potential impacts if EPA does meet the April 1998 date?

Answer. Delaying the Waste Isolation Pilot Plant (WIPP) certification decision from October 1997 to April 1998 results in a six-month slip in the WIPP opening from November 1997 to May 1998. The revised schedule does not impact the Department's ability to meet the schedules specified in the existing Idaho Settlement Agreement and the Rocky Flats Cleanup Agreement. The Department is confident that the May 1998 date for beginning disposal operations at WIPP is achievable. However, there may be unforeseen problems, such as litigation, that might need to be resolved before DOE can begin disposal operations at WIPP. If there is significant additional delay, DOE could be determined to have violated the Federal Facility Compliance Act of 1992, the Idaho Settlement Agreement and the Rocky Flats

Cleanup Agreement, and be subject to fines, penalties, and unilateral orders imposed by the States.

Question. What is the first waste shipment deadline and what impact does this delay have on that deadline?

Answer. The first transuranic (TRU) waste shipment for disposal at the Waste Isolation Pilot Plant (WIPP) will come from the Idaho National Engineering and Environmental Laboratory (INEEL); it will be closely followed by shipments from the Rocky Flats Environmental Technology Site (RFETS) and the Los Alamos National Laboratory. Only INEEL and RFETS have shipment deadlines which could be impacted by a significant delay in opening WIPP. Under the Idaho Settlement Agreement, the Department of Energy (DOE) is committed to ship waste from Idaho no later than April 1999 and to have 3,100 cubic meters of TRU waste shipped by December 31, 2002. Under the Rocky Flats Cleanup Agreement, DOE is committed to ship 930 drums (186 cubic meters) of TRU waste out of Colorado by September 30, 1998, and to ship an additional 670 cubic meters by September 30, 1999. DOE will meet these commitments with a May 1998 WIPP start date.

Question. Can DOE proceed without the compliance certification?

Answer. The Department of Energy (DOE) cannot proceed without the Environmental Protection Agency's (EPA) certification, a State RCRA permit, or a final environmental impact statement. The Waste Isolation Pilot Plant (WIPP) Land Withdrawal Act (Public Law 102–579), as amended, requires EPA to certify DOE's compliance with the radioactive waste disposal standards prior to any transuranic waste disposal at WIPP.

Question. What alternatives are available to DOE if EPA is unable the complete the review in time to assure WIPP can receive initial shipments in 1998 as currently planned?

Answer. Should the Environmental Protection Agency (EPA) not complete it's review of the Department of Energy's (DOE) Compliance Certification Application in time for DOE to declare the Waste Isolation Pilot Plant (WIPP) ready for waste disposal during fiscal year 1998, or decide that WIPP cannot be certified, some DOE sites having transuranic (TRU) waste would be out of compliance with the Federal Facility Compliance Act of 1992 (FFCAct) and other agreements such as the Idaho Settlement Agreement and the Rocky Flats Cleanup Agreement. One possible alternative is to renegotiate the existing compliance agreements at the sites that would be impacted. It should be noted that, therefore, the Department will be required to obtain the approval of its regulators before modifying any terms of its compliance agreements. Under the guidelines of the FFCAct, states are allowed to impose unilateral orders.

QUESTIONS SUBMITTED BY SENATOR GORTON

FAST FLUX TEST FACILITY

Question. Can you assure the Subcommittee that any funds used to evaluate Hanford's FFTF as a possible option for production of tritium and medical isotopes will not take money from Hanford's cleanup program?

Answer. Funds used to evaluate FFTF as a possible option for tritium production will not take money away from Hanford's cleanup program.

In January 1997, former Secretary O'Leary announced the decision to maintain the Fast Flux Test Facility (FFTF) in standby while any future role it may play in the Department's tritium production strategy is evaluated. The Department plans to make a final determination on the future of the facility by December 1998. Meanwhile, the Department will maintain FFTF in a standby state.

Given that tritium production is not Environmental Management (EM) mission-related, it was decided that the Office of Nuclear Energy (NE) should manage the FFTF program and funding. The funding for FFTF is divided between deactivation and surveillance/maintenance activities. To ensure that funding for cleanup activities such as deactivation remains under the control of the EM program, only the funding for FFTF surveillance and maintenance will be transferred to NE. Despite the continued standby status of FFTF, there are deactivation activities that need to be done in fiscal year 1997 and fiscal year 1998, independent of the plant's standby status. Funding that was intended for those FFTF deactivation activities that will not be performed because of the standby decision will be used at the other non-defense cleanup activities.

A reprogramming request was submitted to Congress to reprogram $31.1 million of fiscal year 1997 funds for FFTF surveillance and maintenance from EM to NE. To fund the required studies needed to support a decision on FFTF for tritium pro-

duction, the Office of Nuclear Energy plans to reprogram $1 million in fiscal year 1997 from the NE Advanced Radioisotope Power System program to the Termination Costs program budget line.

PERFORMANCE-BASED CONTRACTS

Question. Please explain how the shift to the performance-based contracts at cleanup sites such as Hanford has already reduced costs and accelerated cleanup. Can DOE document specific cost savings resulting from accelerating cleanup?

Answer. Shifting to performance-based contracts at Hanford, as well as other sites, has resulted in more specific Statements of Work which define, from the outset, the performance expectations of the Department's contractors. Under performance-based contracts, the focus is on desired outcomes and results and the contractor's success is measured against specific performance criteria rather than the vague, subjective evaluations of contractor performance relied on in the past. Under performance-based contracts, the contractor is provided monetary incentives to accelerate project schedules, reduce baseline costs, and deliver high quality products.

Many of the results of implementation of contract reform at the Department are not quantifiable. For example, the transfer of risk from the Department to the contractor cannot be specifically measured. However, in many cases we have already realized significant cost savings or expect to in the future under projects funded within the performance-based contracts. For example:

—At Hanford, accelerated the Spent Nuclear Fuel Stabilization Project for a total project cost reduction of $300 million.

—Completed construction of the Hanford Environmental Restoration Disposal Facility (ERDF) three months ahead of schedule and approximately $20 million below the original estimated cost.

—At Hanford, the Plutonium Uranium Extraction facility (PUREX) was costing $35 million a year to maintain in a safe condition. The facility is being completely deactivated to reduce the annual surveillance and maintenance cost to approximately $1 million.

—At Hanford, the early transition of Building 308 from an operational mode to a surveillance and maintenance mode resulted in a decrease in annual surveillance and maintenance costs from approximately $1.1 million to less than $200,000.

—At Hanford, complete an accelerated stabilization of the B-Plant Canyon Facility to a low surveillance and maintenance state with a cost savings of $100 million over the fiscal year 1995 baseline.

—At the Savannah River Site, a performance incentive for acceleration of canister production at the Defense Waste Processing Facility is expected to significantly lower outyear costs by decreasing the number of years of operation (currently $450 million per year).

It should be noted that the Department has experienced some implementation problems with its performance-based management contracts. In March 1997, the Secretary directed a complete review of performance-based contracts throughout the Department. The results of this review are expected in August.

CONTRACT REFORM AND MANAGEMENT IMPROVEMENT

Question. The Department has made great strides promoting contractor reform. The latest example is the Hanford Management and Integration contract which is 100 percent at risk. The new Hanford contracting team gets paid only if it meets an established set of cleanup, health, and safety, and economic development milestones. Consistent with contractor reform, what has the DOE done to change its own management of the cleanup mission?

Answer. In recognition of the need to improve its management practices in the face of declining budgets, the Office of Environmental Management has engaged in a serious review of its management practices to determine the most cost efficient and effective means of accomplishing its cleanup mission.

Figuring prominently in management changes to meet the challenges of an accelerated cleanup schedule is the shift of the majority of management responsibility and accountability to the field where the work is performed.

Field Project Officers will be assigned to each project, except those few where Headquarters must retain the lead. Responsibilities of Headquarters Program Managers will be shifted from detailed project management to a greater emphasis on planning, policy coordination and analysis of cross-cutting issues.

To support these management changes, the Office of Environmental Management is developing an Integrated Planning, Accountability and Budgeting System designed to eliminate redundancy and reduce the number of independent systems. En-

vironmental Management activities will be "projectized" to clearly define connections between the planning, budgeting, and management performance-based contracts, elements of the Environmental Management structure. Projects will be tracked from planning through budgeting and execution through the integrated system.

A systems engineering approach will be applied to optimize projects across the Department and establish the most effective methods for achieving desired and state objectives. Other management initiatives will be outlined in the Environment Management Draft 2006 Plan.

STABLE FUNDING FOR THE ENVIRONMENTAL MANAGEMENT PROGRAM

Question. Is it the Administration's intention to request stable funding for the defense Environmental Management program for the next several years to ensure that the federal facility compliance agreements such as the Tri-Party Agreement are met?

Answer. The Department of Energy will request sufficient funding for the Environmental Management program to comply with our legal obligations, reduce the mortgage cost of EM facilities, and addresses all urgent risks while still focussing on both risk and efficiencies. The funding level for the EM program will be consistent with the programmatic and budgetary priorities of the Department and Administration.

PRIVATIZATION

Question. I have been a longstanding advocate of privatizing DOE's cleanup program. However, with the budget restraints we face, some reduction in DOE's privatization funding may be needed, but I am concerned about cutting the program too much so that we undermine the privatization concept.

Of the $1 billion DOE fiscal year 1998 request for privatization, what is the minimum adequate amount needed to ensure the program goes forward and we meet our stakeholder obligations?

Answer. The Department believes that the President's budget request is the appropriate level to fund privatization in fiscal year 1998 and to provide assurance to the private sector of the Department's commitment to privatization. We are willing to work with you to identify the impacts on any funding reductions below this level.

TANK WASTE PRIVATIZATION PROJECT

Question. Specifically for Hanford's tank waste privatization project, what is the minimum adequate amount necessary?

Answer. The President's fiscal year 1998 budget requests $427 million. In our September 3, 1996 letter to you, and Senators Murray, Domenici and Johnston, we indicated that these funds are needed to ensure that the Department has sufficient appropriation authority in advance to cover the privatized contractors' investment in facilities, equipment, interest and return on equity during the construction period in the event that the Department were to terminate the contract for convenience. Unless termination for convenience occurs, the $427 million and subsequent year funds will not be spent until waste processing takes place. Under the current schedule, waste processing would begin in June, 2002.

As discussed in the September 3, 1996 letter, the $427 million figure is a DOE estimate made prior to contract award, and is based on a number of assumptions including an effort to provide level funding to avoid large spikes in funding in the outyears. The actual amount required in fiscal year 1998 will be established when the Department makes the next procurement decision in May of 1998. At that point the contractor(s) will have established their expenditure schedules which will be the basis for establishing the minimum Budget Authority (BA) schedules for the TWRS privatization contract(s).

FISCAL YEAR 1998 BUDGET REQUEST

Question. Many external bodies, including the National Academy of Sciences, have criticized the Department for its lack of investment in a long term science strategy for developing technologies for environmental cleanup. What do you believe is the proper balance in a $6 billion program for long term research and development activities that is focused on developing scientifically credible answers to problems for which you do not yet have a cost effective solution?

Answer. We believe that a stable funding level of approximately $50 million a year is necessary for the Environmental Management Science Program (EMSP) to be successful. The program is not designed to fund all the scientific research nec-

essary for a successful Environmental Management Program. It is designed to: "bridge the gap" between existing broad fundamental research that has wide-ranging applicability, such as that performed in DOE's Office of Energy Research and the U.S. Environmental Protection Agency, and needs driven applied technology development, conducted in EM's Office of Science and Technology, and focus the nation's science infrastructure on critical DOE environmental management problems.

The National Academy of Sciences in its 1996 report titled "Building an effective EM Science Program", provided this view of the funding: "The committee notes that DOE's first-year investment in the EMSP is modest compared to many private-sector R&D efforts—the budget department's investment ($50 million) represents about 0.8 percent of EM's annual budget, and the total EM investment in R&D (in fiscal year 1996) represents about 6.6 percent of its budget. By comparison, "high-technology" manufacturing firms (e.g., computing, electronic, communication, instrumentation, and pharmaceutical firms) spend between about 7 and 12 percent of net sales on R&D."

PARTNERSHIPS WITH LOCAL GOVERNMENTS

Question. What are your plans for working closely with local governments to build a mutually beneficial partnership to confront the challenges of cleanup and downsizing associated with the Department's larger defense nuclear facilities?

Answer. We recognize that local governments play a critical role in helping the Department confront its challenges at its sites. A number of DOE Headquarters and field managers met with local government officials last month to discuss how to build more effective partnerships. The meeting provided an opportunity for affected local governments and DOE managers to further establish how local governments can more effectively be involved in site decisions and actions. As a follow-up to that meeting, the Assistant Secretary for Environmental Management will participate in conference calls and meetings with affected local governments to ensure their participation in the Ten-Year planning process and other critical initiatives.

Second, the Office of Environmental Management is funding the International City/County Management Association and the Energy Communities Alliance to assist in arranging "peer exchanges" among local governments. These meetings will help affected local governments, that are located near major DOE facilities, to meet with local government managers that have already confronted similar concerns such as base closure, long-term institutional controls, facility reuse, and other issues of local interest.

Third, DOE is involving local governments in a number of different advisory boards that focus on cleanup, worker and community transition, and other concerns. In particular, local government officials are key members of the 12 Site Specific Advisory Boards we have established at all our large DOE sites. These boards were established to provide direct access to DOE decision makers and ensure local government concerns are taken into account in all DOE's major decisions. Furthermore, DOE provides direct assistance to locally-driven community reuse organizations and surrounding counties affected by DOE downsizing.

Finally, local government officials are also involved in shaping the direction and implementation of the National Dialogue on Nuclear Waste and Materials. This Dialogue is designed to provide a comprehensive overview of the major decisions DOE will need to make in the next several years to local government officials and other stakeholders. We envision special forums tailored to meet the specific needs of local governments.

QUESTIONS SUBMITTED BY SENATOR BENNETT

FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

Question. As you know, a great deal of concern has been expressed regarding the effectiveness of the FUSRAP program and the perceived delays in administering the program. What steps is DOE taking to accelerate and complete the cleanup of the contaminated sites located in urban and residential areas?

Answer. The Formerly Utilized Sites Remedial Action Program (FUSRAP) has been making considerable progress and as of the end of fiscal year 1996, cleanup has been completed at 23 of the 46 sites currently included in the program. The FUSRAP program continues to demonstrate its effectiveness, in terms of completing the cleanup of designated contaminated sites and vicinity properties located in urban and residential areas. The two sites completed in fiscal year 1996, brought the percentage of sites completed to 50 percent. This number will increase as the

program continues to focus on cleanup. Two additional sites are planned for completion in fiscal year 1997 and one in fiscal year 1998.

Support costs for FUSRAP have been dramatically reduced, thereby increasing the percentage of funds available for cleanup rather than studies. The Department's prime contractor for FUSRAP (Bechtel National, Inc.) has reduced staffing while increasing the percentage of work being performed using fixed-price subcontracts. Bechtel's contract with the Department expires in June, 1998. The Department is preparing to solicit bids for a performance based contract, with incentives, to be awarded in the spring of 1998. Innovative approaches are currently used, such as the total-service, fixed-price contract at the Wayne site, to accelerate cleanup, reduce costs and shift financial risk from the Department to the private sector. The fiscal year 1998 Congressional budget request, with an increase of over $100 million, will accelerate cleanup of urban waste sites, consistent with the Administration's initiative.

The greatest challenge ahead is balancing the desires of our local stakeholders with the technical and financial constraints of a national cleanup program. While we are actively trying to reach resolution on the appropriate path forward, the Department has aggressively continued to make "on the ground" progress. We continue to foster a collaborative decision making process with our stakeholders and citizens groups to reach agreement on efficient and effective cleanup strategies.

Question. Please explain the Department's commitment to clean up FUSRAP sites so these properties can be returned to the local communities for productive use.

Answer. The Department is committed to clean up FUSRAP sites in a manner that maximizes the number of properties which can be released for beneficial use. For the majority of FUSRAP sites and vicinity properties, which are privately owned, cleanup is consistent with the current or anticipated future land use. Cleanup options for the remaining seven properties owned or leased by the Department will continue to consider stakeholder preferences for productive future use of these areas as part of the decision making process. This is consistent with the administrative changes to Superfund to consider reasonably anticipated future land use in selecting remedies.

Question. Please provide an analysis of the estimated savings in fixed overhead, maintenance, and life cycle costs, should cleanup of FUSRAP sites be accelerated by at least 20 percent.

Answer. For this reason, the Department is requesting an additional $107 million in fiscal year 1998 through fiscal year 2002 to help achieve completion of the program by 2002 (approximately 14 years sooner than originally projected) and greatly reduce the total cost of the program. If the Department were to reduce the projected length of the program by 20 percent (approximately three and a half years), we estimate that the total potential savings would be in the range of $50 to $70 million (i.e., $15 to $20 million for each year that the program is accelerated).

Question. Does DOE support the proposal currently submitted by Envirocare to amend it's FUSRAP contract in an effort to finish the clean up of the contaminated waste piles located in Wayne, New Jersey this year by engaging in three months of sustained work?

Answer. In general, the Department supports any proposed concept which will accelerate FUSRAP cleanup activities without incurring additional risk or cost. The Department is obligated, however, to assure that the proposal can be legally implemented under existing Federal contracting regulations and that the proposal is in the best interest of both the government and the local community. The Department plans to make a determination on the acceptability of the proposal in the next few months.

NATURAL RESOURCE DAMAGES BUDGETARY IMPLICATIONS

Question. Mr. Secretary, I am concerned with the budgetary implications of the Department of Energy's environmental liabilities. I raise some questions today that cut across committee jurisdiction, but I believe these issues need to be addressed. As you know, the federal government's responsibility for the costs of cleaning up environmental contamination has received much attention recently here on Capitol Hill and in the press. The General Accounting Office has estimated the Department's cleanup liability to be as great as $350 billion. (U.S. General Accounting Office, Consistent Relative Risk Evaluations Needed for Prioritizing Cleanups, GAO/RCED–96–150, June 1996). The Department of Energy's responsibility for natural resource damages under CERCLA, however, is also a matter of great concern to me.

The Department recently released a report to Congress, as required by Section 3154 of the National Defense Authorization Act for Fiscal Year 1997 estimating its natural resource damages. (U.S. Department of Energy, Estimate of Potential Natu-

ral Resource Damage Liabilities at U.S. Department of Energy Sites, February 1997). The Department stated that it did not conduct its estimate in accordance with the natural resource damage assessment regulations promulgated by the Department of the Interior (DOI) (43 C.F.R. part 11), as directed by Section 3154. (Estimate of Potential Natural Resource Damage Liabilities at U.S. Department of Energy Sites, page 2).

Although CERCLA does not require natural resources damage assessments to be conducted in accordance with the DOI regulations, assessments that are conducted in accordance with the regulations carry a rebuttable presumption of validity in administrative or judicial proceedings. 42 U.S.C., § 9607(f). Therefore, assessments for natural resource damages claims filed against the Department by state and tribal trustees will most likely be conducted in accordance with these regulations. The DOI regulations have been defended and supported by the administration in litigation and throughout the CERCLA reform legislative debate.

Based on private party experience, if the Department conducted this study in accordance with the DOI regulations, which are applied by trustees in actions against private parties, including the assessment of damages for past use and non-use values using contingent valuation and damages for off-site contamination, it is certain that the Department's estimate would be much higher and could, in fact, be hundreds of billions of dollars.

Do you believe the Department of Energy should receive differential, and in fact preferential treatment, as opposed to private parties in the natural resource damage assessment and claim process?

Answer. No, I do not believe that the Department of Energy should receive preferential treatment, as opposed to private parties, in the natural resource damage assessment and claim process.

The Department did not use the Department of the Interior (DOI) regulations in preparing its report because the regulations contemplate a lengthy, detailed assessment process that would not be appropriate at most DOE sites. As noted in the report, the Department could conduct detailed ecological surveys at each DOE facility and attempt to estimate potential natural resource damage liabilities in accordance with the DOI regulations. The time and cost required for such an effort would be large, the results would still be uncertain, and collecting these data in this form could invite claims that otherwise might not be asserted. Furthermore, a premature estimate of this type unintentionally may generate unrealistic expectations concerning potential liability that may be mitigated in light of DOE's efforts to minimize its potential natural resource damage liability. Perhaps most importantly, until the final remedy for a site is selected, the Department cannot effectively appraise the natural resource injuries that are likely to remain once the response action is completed. In fact, it would be difficult for the Department to complete the preassessment screening process under the DOI regulations (a condition precedent to assessment) until remedy selection has occurred because it is impossible to determine whether the remedy will fully address all potential injuries. The Department believes that scarce resources are better focused on addressing natural resource injuries as part of the response action process rather than conducting costly, premature assessments under the DOI regulations that would divert funds from response actions that may remedy potential injuries.

The Department does not agree with the assertion in the question that, had the Department based its estimate on the DOI regulations, "it is certain that the Department's estimate would be extremely high and could, in fact, be hundreds of billions of dollars." As noted in the Department's report, any estimate of DOE's potential natural resource damage liability at this stage is necessarily uncertain and of limited value for current planning purposes. The natural resource damages claims that DOE ultimately pays could be either considerably higher or lower than the estimates presented in its report because of the inherent uncertainties.

SCOPE AND METHODOLOGY OF NATURAL RESOURCE DAMAGES ESTIMATE

Question. The report submitted to Congress by the Department, as required by Section 3154 of the National Defense Authorization Act for Fiscal Year 1997, excludes nine sites from its estimate that are not covered by the Baseline Environmental Management Report (BEMR). (See Estimate of Potential Natural Resource Damage Liabilities at U.S. Department of Energy Sites, pp. 12–13). These sites however, are some of DOE's most contaminated.

Further, the Department's report estimates natural resource damages based on a ratio of response costs and natural resource damages derived from a Department of Justice (DOJ) Compendium of natural resources damages claims against private parties. (Compendium of Natural Resource Damages Cases under CERCLA, U.S.

Department of Justice, September 1995). The Department's report notes that the DOJ Compendium excludes several sites where large natural resource damages claims are currently pending in the courts. (See Estimate of Potential Natural Resources Damages Liabilities at U.S. Department of Energy Sites, p.13).

Recent trends in natural resource damages litigation indicate that trustees are unwilling to settle for relatively small amounts and instead are proceeding with claims at larger sites with historical contamination. Consequently these claims, including the pending claims that are excluded from the DOJ compendium, are up to $1 billion.

Given the recent litigation trends cited above, what is the proper ratio of clean up costs to natural resource damages if the sites excluded from the BEMR and from the DOJ Compendium are considered in the Department's estimate? Using the ratio, please provide us with your best estimate of the contingent valuation of natural resource damages at those sites that are excluded from the Department's recent report.

Answer. For a variety of reasons including those referred to in the question, the Department believes that any estimate of the Department's natural resource damage liability necessarily is uncertain. The large claims currently being litigated are not included in the Department of Justice Compendium because this Compendium includes only completed cases for which judgments or settlements include natural resource damage recoveries or covenants not to sue for natural resource damages. The Department did not include in the BEMR the response action cost estimates for certain areas that have become contaminated with hazardous substances and may not be cleaned up because: (1) no feasible remediation approach is available; (2) the risks posed by the contamination do not warrant response actions using existing technologies given the ecological injury that these technologies would cause; or (3) the contaminants will attenuate naturally over time. Therefore, response action costs for these areas could not be included in the Department's estimates of response action costs at its facilities to which the ratios between natural resource damage recoveries and response action costs at private sector sites were applied. However, these areas were not excluded from the Department's report on natural resource damages. The report in fact acknowledged that these areas may give rise to potential natural resource damage liabilities.

The Department continues to believe that a methodology based on private site experiences is a credible approach in the absence of natural resource damage claim experience at DOE sites. The Department and the General Accounting Office both used identical ratios (5.95 percent and 9.41 percent) derived from the Department of Justice Compendium. For the reasons discussed in the report, the Department continues to believe that the estimate contained in the report of $1.4 billion to $2.5 billion is a more reasonable estimate of its potential natural resource damage liability than that of the General Accounting Office ($2.3 billion to $20.5 billion).

The Department will continue to monitor the natural resource damage potential at its sites and will monitor private settlements. If it appears that the Department's natural resource damage liability will change significantly from current estimates, the Department will promptly inform the appropriate committees of Congress and will change the estimate of natural resource damage liability included in the footnote to DOE's consolidated financial statements.

Question. The recent natural resource damages estimate submitted by the Department to Congress, as required by Section 3154 of the National Defense Authorization Act for Fiscal Year 1997, acknowledges that contamination at some sites, such as Oak Ridge, extends beyond the Department's boundaries. (Estimate of Potential Natural Resources Damage Liabilities at U.S. Department of Energy Sites, p. 14). Oak Ridge is one of the sites excluded from DOE's Baseline Environmental Management Report (BEMR) and from this recent natural resource damages estimate.

For sites where such off-sites contamination exists, can you identify the non-federal trustees for the potentially affected resources? Please provide your best estimate of the contingent valuation of natural resource damages at sites where off-site contamination exists.

Answer. The 1996 Baseline Environmental Management Report covers all sites that are part of the Environmental Management program, including all elements of the Oak Ridge Reservation and sites managed by the Oak Ridge Operations Office. Hence, it is factually incorrect to assert that any sites were "excluded." It is correct that costs were not included for remediation of certain sites for which no feasible remedial technology exists. Estimated cleanup costs are included in the Baseline report for all problems for which a feasible remedial action technology could be identified. Estimated cleanup costs could not be determined for more than seven sites for which no feasible remedial technology could be identified. Moreover, as the Baseline report indicates explicitly on page 3–10: "[T]he Base Case does not include cost esti-

mates for potential liabilities due to natural resources damages claims. There is the potential that claims for natural resources damages could be filed against the Department of Energy after selection of the remedial action at some of the Department's sites. If any such claims result in payment of a damage claim, this liability would be additive to the costs estimated in the report."

If off-site contamination exists near a DOE site, the non-federal trustees for the potentially affected resources usually would be the State and possibly one or more Tribes. The Department has not separately estimated the contingent valuation of natural resource damages at sites where off-site contamination exists. However, the Department of Energy's estimates include non-use values based on contingent valuation to the extent such values are accounted for in the cases included in the Department of Justice Compendium of private sector NRD cases (which served as the basis for extrapolating and estimating dollar amounts for potential claims against DOE). The estimates for cleanup of contamination beyond the boundaries of DOE sites that are included in the BEMR are included in the response cost estimates utilized in the report to estimate the Department's potential natural resource damages.

As stated in its recent report, any estimate of the Department's potential natural resource damage liability at this stage is necessarily uncertain and of limited value for current planning purposes. The Department has concluded that the best way to reduce the potential for natural resource damage claims from releases at its facilities is to: incorporate resource values in land use planning; work closely with the trustees to identify concerns; work closely with stakeholders, trustees, and regulators in integrating remedy and restoration; and mitigate resource injury in implementing response actions.

NATURAL RESOURCE DAMAGES REFORM

Question. Mr. Secretary, the recent DOE report estimating its natural resource damages notes that scarce resources should not be diverted from response actions to pay for costly natural resource damage assessments. (Estimate of Potential Natural Resources Damage Liabilities at U.S. Department of Energy Sites, p. 6). I agree that CERCLA's natural resource damages provision impedes the prompt and effective cleanup of sites to protect human health and the environment. CERCLA, as amended in 1986, bars the filing of claims for natural resource damages at federal facilities and sites on the National Priorities List until a cleanup remedy is selected. 42 U.S.C. § 9613(g).

It is important to note, however, that some assessment of the damage to natural resources is required for a response action that addresses injuries to those resources. Moreover, CERCLA directs the trustee, not the responsible party, to prepare a natural resource damage assessment and to file claims. 42 U.S.C. § 9607(f).

Please explain what CERCLA reforms natural resource damages provision do you support that would preclude claims for restoration costs beyond cleanup.

Answer. The Department supports the legislative proposal on natural resource damages, drafted by the Administration, and sent to the House and Senate in October, 1996. This legislative proposal would clarify that natural resource damage claims would be focused on restoration costs rather than monetized values and would enhance coordination and integration of remedy and restoration decision making. Such coordination and integration of remedy and restoration decision making should minimize the potential for claims for restoration costs after completion of the response action.

NATURAL RESOURCES DAMAGES BUDGETING

Question. In response to questions submitted at the Armed Services Committee hearing held on January 30, you stated that natural resource damages will be budgeted for as a component of cleanup costs to the extent that natural resource concerns are addressed during the cleanup process. Further the study recently released by the Department estimating its natural resource damages asserts that the Department has an obligation to address natural resource injuries in its response action. (Estimate of Potential Natural Resources Damage Liabilities at U.S. Department of Energy Sites, p. 3).

Private party experience indicates that natural resource damages claims, which are brought by trustees and include damages for lost use and non-use values and off-site contamination and are calculated using contingent valuation, are often greater than cleanup costs and are imposed regardless of the effectiveness of remediation to protect human health and the environment.

How does the Department intend to budget for claims that are successfully brought by state and tribal trustees for injuries to natural resources that are not addressed during the cleanup process? Will the money to satisfy these claims come

from the Department's operating budget or from the Federal Judgment Fund? If the money comes from the Federal Judgment Fund, how does the Department intend to budget for reimbursement to that Fund? How does the Department intend to budget for claims for injuries to natural resources brought by federal contractors?

Answer. In accordance with the October 1993 opinion by the Comptroller General any successful claims against the Department as a result of litigation for natural resource damages after completion of the cleanup process likely would be paid out of the Judgment Fund rather than the Department's operating budget and would not be separately budgeted for by the Department. Any funds to reimburse the Fund would have to be separately authorized and appropriated by Congress.

Federal contractors are not natural resource trustees and, therefore, are precluded from bringing claims for injuries to natural resources claims.

QUESTIONS SUBMITTED BY SENATOR BYRD

FEDERAL ENERGY TECHNOLOGY CENTER

Question. The Federal Energy Technology Center, and especially its Morgantown office, has been working closely with the environmental management program, and particularly the Office of Science and Technology. What is the current estimate of fiscal year 1997 funding level provided from the EM program to the FETC?

Answer. The following is the estimated funding level for the Federal Energy Technology Center (FETC) for Environmental Management (EM) activities in fiscal year 1997.

Environmental Management Activities Performed by FETC

[Dollars in thousands]

	Fiscal year 1997
Program funding:	
Decontamination and decommissioning	$5,043
Private Industry Program	$39,778
University Program	$13,573
Other directed activities	$42,295
Total program funding	$100,689
Program direction funding:	
Salary and benefits	$3,265
Travel	$214
Support services	$1,048
Contractual services	$82
Total program direction	$4,609
Total FETC EM activity	$105,298
Full-time equivalents (FTE's)	48

An additional 16 FTE's will transfer to FETC in fiscal year 1997 to support the Center for Acquisition and Business Excellence. Funding for salaries and personnel related expenses will transfer from Headquarters to FETC in the monthly financial plan based on the actual costs of the employees transferred and the effective date of each transfer.

Question. What is your estimate of projected program activities in fiscal year 1998.

Answer. The following is the funding level projected for the FETC for EM activities in fiscal year 1998.

Environmental Management Activities to be Performed by FETC

[Dollars in thousands]

	Fiscal year 1998
Program funding:	
Decontamination and decommissioning	$9,600
Private Industry Program	$40,066
University Program	$19,000

	Fiscal year 1998
5Other directed activities	$8,375
Total program funding	$77,041
Program direction funding:	
Salary and benefits	$3,980
Travel	$214
Support services	$1,048
Contractual services	$86
Total program direction	$5,328
Total FETC EM activity	$82,369
Full-Time Equivalents (FTE's)	48

Fiscal year 1998 funding for FETC does not reflect the additional 16 FTE's that will transfer to FETC in fiscal year 1997 to support the Center for Acquisition and Business Excellence. Funding for salaries and personnel related expenses will be transferred from Headquarters in the initial fiscal year 1998 Financial plan to cover personnel related costs for the 16 FTE's.

TEN-YEAR PLAN

Question. What impact do you anticipate the shift to a 10 year clean-up program for DOE's nuclear waste problems will have on the role of FETC in helping develop solutions?

Answer. The successful completion of the 2006 Plan (formerly called the Ten-Year Plan) vision requires the identification and deployment of innovative technologies. The Science and Technology Program is focused on developing, demonstrating, and implementing those new technologies for use in environmental management. Identifying and deploying innovative technologies and processes for cleanup throughout the complex will be key to the Department's ability to reducing the EM mortgage and accelerating site cleanup, thereby reducing the risk to workers, the public, and the environment. It is anticipated that the Federal Energy Technology Center, which includes the Morgantown office, will continue to play an important role in helping to develop solutions for cleanup challenges throughout the Department.

FEDERAL ENERGY TECHNOLOGY CENTER

Question. What are the focus areas that FETC has been selected to lead within the EM program?

Answer. In fiscal year 1997, the Federal Energy Technology Center (FETC) has lead responsibility for the following environmental management program activities:

—Decontamination & Decommissioning Focus Area. FETC manages this national program to develop technologies to decontaminate, decommission, deconstruct, and dispose of the 7,000 radiologically contaminated buildings and equipment in the DOE complex.

—Private Industry Program. Under this program, FETC contracts with private sector organizations to develop cleanup technologies for use within the DOE complex.

—University Program. FETC manages a program of applied R&D which supports technology development efforts through university grants and cooperative agreements.

—Environmental Management (EM) Center for Acquisition and Business Excellence (CABE). FETC was recently designated as the CABE as part of the EM redeployment initiative. The CABE will support the establishment of consistent acquisition strategies across the EM organization, consistent processes in business management, and the field offices in acquiring services required to carry out the EM mission.

—EM Inter-Governmental and Public Partnership Service Center (IGPPSC). It is anticipated that the FETC will be designated as the IGPPSC by the end of May 1997. Its purpose is to facilitate the meaningful and timely public and tribal partnership in all of EM's key decisions and site programmatic efforts. It supports DOE Headquarters in communicating inter-governmental and public partnership policy and guidelines and ensuring their consistent application and will provide technical and business expertise and assistance in matters relating to inter-governmental and public partnerships.

The above represent the major portion of FETC's EM activities. However, the FETC also has numerous small, directed activities carried out on an ad-hoc basis for the EM programs. Approximately $5 million per year of EM science and technology program projects are being conducted primarily as a pass-through to the Pittsburgh site support contractor.

FETC also has a management link to the Western Environmental Technology Organization (WETO) in Butte, Montana. Last year DOE privatized the facility by selling it to MSE, Inc. Two FETC employees reside in Butte and coordinate DOE activities with WETO. WETO has 200 MSE, Inc., employees who conduct R&D in various cleanup technologies. Other than overseeing the base contract with MSE, Inc., the impact of this activity on the FETC is minimal.

Question. Do you anticipate the mix of focus areas shifting in fiscal year 1998?

Answer. We do not expect any shift of the focus area mix at this time.

Question. What strengths does FETC offer the EM program that are not readily available elsewhere?

Answer. The Federal Energy Technology Center (FETC) has been involved in the Environmental Management (EM) program since 1992, when FETC was invited to assist in EM's technology development program effort. Five core strengths of the FETC organization formed the basis for this partnership with EM: (1) the ability to do innovative contracting with the private sector, using Federal employees for all management and administrative functions; (2) knowledge of private sector business operations and a proven record of working with the private sector; (3) knowledge of environmental and waste management technologies and engineering practices, albeit for DOE's fossil energy programs; (4) the ability to do cradle-to-grave performance, cost, and environmental assessments of innovative technology; and (5) a nonconflicted status—FETC is not a problem holder, develops no cleanup technologies internally, and therefore has no bias for particular cleanup technologies.

Question. Given the strengths FETC can bring to the environmental management program, is this a partnership that the Department will continue to support?

Answer. The Department expects to continue to support the partnership with FETC. Private sector contractors are given the opportunity to help solve the DOE site problems. Private sector solutions can contribute significantly to the success of the Environmental Management cleanup program.

Question. One of the successes in FETC's participation in the environmental management program has been its use of the capabilities at the International Union of Operating Engineers Hazardous Materials Center in Beckley, West Virginia. How has this partnership benefitted the EM program?

Answer. The purpose of the partnership with the International Union of Operating Engineers (IUOE) is to promote cooperation among the skilled workers who will use innovative environmental technologies, the DOE field sites that use the technologies and the technology developers who are marketing their products. The IUOE has been working with ten separate technology developers, Florida International University, and numerous sites to identify interface and training requirements during the development of the technology, thus enhancing the efficacy of the technology and acceptance by site workers. Tangible benefits of this partnership to the Environmental Management program are reduced human exposure during cleanup efforts and cost reductions in applying innovative technologies. At least seven of the technologies evaluated by the IUOE are scheduled for use at DOE sites.

Question. What level of funding has been provided for this agreement (with the IUOE)?

Answer. The agreement with the IUOE is a financial assistance award that is funded in annual budget periods, based on an agreed to work scope for the budget period. To date, $6,900,350 has been provided to the IUOE. The total estimated value of the Cooperative Agreement is $11,910,823, with an expected fiscal year 1998 funding level of approximately $3 million.

Question. What is the duration of the agreement (with the IUOE)?

Answer. The duration of the agreement with the IUOE, which began September 28, 1995, is five years and will expire September 28, 2000.

FEDERAL ENERGY TECHNOLOGY CENTER

Question. A newly evolving role for FETC in the environmental management program is the Department's support for establishment of a Center of Excellence for Acquisition at FETC. This center will conduct three functions for the entire environmental management organization—establishment of consistent acquisition strategies; consistent business management practices; and support to the DOE field offices as they carry out the 10-year plan to clean up the contaminated sites.

How many additional jobs will be brought to FETC as a result of this center? Are these positions supported in the proposed fiscal year 1998 budget for EM?

Answer. There are 14 FTE positions that will be filled with current Environmental Management staff located in Washington, D.C. These positions are supported in the fiscal year 1998 budget.

Question. Are the dollars necessary to support these additional personnel being provided to FETC in fiscal year 1997?

Answer. As each employee is selected and transferred to the FETC Center for Acquisition and Business Excellence, funding for salaries, benefits and related expenses are provided to FETC from the losing organization based on the salary requirements for the number of months remaining in the fiscal year.

Question. What is the plan for fiscal year 1998?

Answer. In fiscal year 1998, funding will be transferred from the losing organization for each employee who has accepted a position at FETC during fiscal year 1997.

QUESTIONS SUBMITTED BY SENATOR MURRAY

PRIVATIZATION

Question. While the DOE has addressed labor concerns in the TWRS privatization contract, contract, I hear continuing concerns about how this new policy might affect other workers across the complex or on other privatization projects at Hanford. Does the DOE have a Department-wide policy on how labor issues will be addressed under privatization? If not, does it intend to formulate one in the very near future?

Answer. The Department does not yet have a comprehensive policy on how labor issues will be addressed under privatization. However, the Department has committed to develop workforce privatization policies. We are encouraging workers, communities, unions, and other stakeholders to use the comment period on the recently published draft report of the Privatization Working Group to recommend proposed policies and to identify their concerns. The Department will form a task force which will be comprised of selected members from the Privatization Working Group and other appropriate HQ and field representatives to consider comments received and develop appropriate policies.

Question. Please explain in detail how the DOE arrives at its conclusions that privatization will always save the taxpayer money. It seems that savings are totally dependent upon how risk is allocated; how capital is raised (can't the government almost always borrow capital at a lower rate?); and whether a technology is tested and tried or whether it is a riskier new process/product.

Answer. The Department has not concluded that privatization will always save the taxpayer money. Numerous projects have been considered that were rejected as candidates for privatization because of the risks represented by unknowns (such as unclear definition of end product, regulatory uncertainty, insufficient scope definition, etc.). For projects that have a well-defined scope, clear product or service requirements, a path forward for the regulatory approach, stakeholder acceptance, and are competitively bid, it is expected that the competitive forces of the marketplace reward efficiency, challenge new players to participate and often lead to innovative approaches and technologies.

Savings are heavily dependent on how risk is allocated. The terms and conditions of the contract determine the degree of mutual benefit by allocating risk and reward. If the contract shifts too much risk to the private sector, costs can increase to the extent that either the privatization would not save money for the Government or private sector interest in the procurements may be eroded. If, on the other hand, the Government does not shift enough risk to the private sector, a contract can limit the ability to minimize costs.

The cost of government financing is expected to be less than the cost of capital required by the private sector that may be raised from debt financing. Therefore, DOE must ensure the projects are attractive to the financial community. The availability of debt financing and the interest rate charged for that debt is primarily a function of how risks are allocated.

The Department will establish realistic, well-defined, and equitable allocations of the financial risks in each privatization project. A careful balancing of these factors will result in the protection of the Government's interests, broad participation by qualified contractors, and reliance on the expertise of the private sector in accordance with best commercial practices.

Privatization is cost-effective where the improvements in cost, technical, and schedule performance outweigh the differential cost of financing.

TECHNOLOGY DEVELOPMENT

Question. I strongly support the idea of moving new technology to market after the national labs or other parts of the federal government have helped finance such technology. However, I am concerned about the lack of progress in achieving this goal. Please explain how the DOE intends to make changes in the program to get technology deployed.

Answer. Innovative and alternative technologies that reduce risks, lower cleanup costs, and accelerate schedule are already contributing to DOE cleanup projects. To optimize use of new technologies, where maximum benefits can be derived, the Department is proposing a technology deployment initiative to serve as a catalyst to spur widespread application of innovative technologies. The initiative will fund the first application of a technology meeting multi-site performance specifications. Successful implementation of these technologies will enhance acceptance and widespread use of new processes by reducing the business risks associated with using new technology.

FAST FLUX TEST FACILITY

Question. Several DOE studies indicate the FFTF could provide a less expensive, less controversial source of tritium for the years prior to operation of an accelerator. I understood the DOE intended to submit a reprogramming request to ensure cleanup monies were not being used to keep this important machine in hot standby. What is the status of that request?

Answer. A reprogramming request has been submitted to Congress to reprogram $32.1 million of fiscal year 1997 funds for the Fast Flux Test Facility (FFTF) at Hanford, Washington. The Department plans to maintain the FFTF in a "standby" state to permit a thorough evaluation of the facility as a possible tritium production source and to review the feasibility of using the facility for medical isotope production.

The Department's fiscal year 1997 budget authority includes $39.7 million for the Advanced Reactors Transition Program at Hanford. The Advanced Reactors Transition Program is within the Office of Environmental Management's (EM) Nuclear Material and Facility Stabilization decision unit of the Energy Supply, Research and Development Appropriation. The Department's proposal is to reprogram $31.1 million of these funds, which are required for surveillance and maintenance activities at the FFTF and the Fuel and Materials Examination Facility, to the Office of Nuclear Energy, Science and Technology's (NE) Termination Costs decision unit of the same appropriation. Actions which would irrevocably preclude restart of the facility would be deferred until a decision is made on the future use of the facility. Cleanup activities at the Hanford site, that are not related to standby status of the FFTF, but are funded as part of the same line item (such as building 309 and nuclear energy legacies deactivation), will not be affected by the decision to continue the facility in "standby".

The Department also intends to reprogram $1.0 million from NE's Advanced Radioisotope Power Systems decision unit to the NE Termination Costs decision unit to conduct further detailed technical evaluations. These evaluations will be conducted to gain greater understanding of technical and cost issues related to a potential role for the FFTF in tritium and medical isotope production.

TRITIUM SUPPLY

Question. In addition, I had understood the DOE intended to submit authorizing legislation to address needed changes in law to allow use of commercial nuclear reactors for tritium production in order to gauge congressional support for this second track of the "dual track strategy" for tritium production. What is the status of that legislation?

Answer. Proposed legislation to amend the Atomic Energy Act to allow the use of commercial nuclear reactors has been submitted with our draft fiscal year 1998 authorization bill.

QUESTIONS SUBMITTED BY SENATOR LAUTENBERG

FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM (FUSRAP)

Question. The President's requested budget increase of $107 million for the FUSRAP program demonstrates a strong commitment to completing the work at the sites in New Jersey, including the Wayne Interim Storage Site. DOE has committed to completing the cleanup program by fiscal year 2002. It is disappointing, however,

that despite several years of effort, DOE has still not completed a Record of Decision for the Wayne site.

Please describe the status of DOE's informal dispute with the Environmental Protection Agency over (1) cleanup levels at Wayne, and (2) the timing of the Record of Decision for Wayne. When, in DOE's opinion will these disputes be resolved? What issues remain to be resolved?

Assuming that the President's fiscal year 1998 budget request is approved by Congress and that budget levels remain constant, please indicate how resources would be devoted to the cleanup of the Wayne site between fiscal years 1998 and 2002.

In order to determine appropriate funding levels for the Wayne site and the FUSRAP program overall, the Committee needs information on the prospects for recovering costs for cleanup from the potentially responsible parties. Please provide information on the status of cost recovery efforts for the Wayne site.

Answer. The Department and Environmental Protection Agency (EPA) are in the process of developing a mutually agreeable solution to their informal dispute. The informal dispute is focused on the schedule for the decision documents for the sites. In the interim, the Department is committed to making progress toward cleanup at these sites. The Department anticipates that the informal dispute can be resolved within the next 3 to 6 months. Senior managers from both agencies recently met on April 18, 1997, to assure the progress continues to be made towards resolution. The Department of Energy's site manager and the EPA Region II project manager are working together to develop a mutually acceptable schedule for issuing Proposed Plans and Records of Decision for the Wayne and Maywood sites which would resolve the matter. Development of the milestone schedules will consider the physical work being done in the field, the need for additional studies to support the remedy selection process, and assumptions regarding available funding.

Assuming the fiscal year 1998 Congressional budget request is approved, and these funding levels remain constant, the Wayne site will be completed in the fiscal year 2000–2001 time frame. The fiscal year 1998 budget request and outyear funding projections have been planned at the State, rather than site level. Outyear funding projections for the four remaining FUSRAP sites in New Jersey are anticipated to be approximately $60M per year through fiscal year 2002. Since final remedy decisions have not been reached, some adjustments to the outyear funding may be required to accommodate the specific scope of work and the final agreed to cleanup schedule.

The Department is engaged in active negotiations with a potentially responsible party for the Wayne site. While we are hopeful that cleanup costs will be recoverable, there is no certainty as to the amount which may be recovered or when these funds may become available. In accordance with Justice Department policy and agreement of the parties, details on the outgoing discussions are confidential.

QUESTIONS SUBMITTED BY SENATOR ALLARD

ROCKY FLATS

Question. Is it not true that Rocky Flats contains one of the nation's largest stockpiles of plutonium with most of it in forms that are not proven to be stable or currently in a condition safe for shipment or long term storage?

Answer. Rocky Flats does have one of the largest inventories of plutonium, but a significant portion of that inventory is being or will be shipped to other sites for storage and disposition. All of the current Rocky Flats inventory is considered sufficiently stable to meet risk goals for the immediate future. Operations are planned or in progress which will further stabilize and repackage portions of the inventory for long term storage and for safe shipment to other sites for processing, storage and disposition. These operations are being undertaken to responsibly reduce long term hazards posed by the material to any local resident as well as to workers.

Question. Is it not true that Rocky Flats physical safety infrastructure is old and decaying and by DOE's own estimates contains 5 of the 10 "most dangerous buildings in America" as identified in the 1994 Plutonium Vulnerability Study including the first and second most dangerous buildings?

Answer. The Rocky Flats physical plant is aging, but not all of it is needed for the current cleanup mission. Those systems and facilities which are needed are being maintained and upgraded to assure the continued safety of the site. Five Rocky Flats facilities were identified in the cited report to be among the 14 facilities posing greatest plutonium "vulnerabilities" as compared to other plutonium facilities. Much has been done since 1994 to reduce the risks to workers and the public posed by plutonium in these buildings. Improvements including building structural

and physical system upgrades and repairs, decontamination of sites and facilities, stabilization or repackaging of materials, relocation of stored material to the safest available storage locations, shipment of some materials off-site, and analysis and engineering evaluations to assure that the public and workers are adequately protected and that the changes reduce risk in the most cost-effective way possible.

Question. Is it not true that the primary contaminant pathway of concern for plutonium is by air into the human respiratory system and that minute amounts of plutonium could create significant health concerns in this way?

Answer. The potential for significant health consequences from internal exposure to plutonium is the reason for the basic design and operational controls that are in place and that are intended to prevent the release of plutonium to working areas of the environment. Our design and controls provide multiple barriers to such releases, monitor for releases, and provide for structured responses which further enhance protection even if one barrier is accidentally degraded. We evaluate the adequacy of protection even for severe accidents which might exceed by a significant degree any ever experienced in the area.

Question. Is it not true that the prevailing wind direction from Rocky Flats is westerly, toward the Denver population area, the nations's 24th largest metropolitan area with 2.2 million people, and that winds in excess of 100 miles per hour frequently occur over the plant in the direction of Denver which has its city hall and State Capitol less than 15 air miles away?

Answer. The proximity and growth of the Denver metropolitan area has been a significant factor in the Department's commitment to remove plutonium from the site and to decommission the site on an accelerated schedule.

Question. Is it not true that Rocky Flats sits directly in watersheds serving 400,000 people and while mitigations have been implemented is it possible that a release from the site could contaminate these sources?

Answer. The Department has taken a number of measures to minimize the potential for any releases from the Rocky Flats site that could pose a risk to human health and the environment. The Department continues to clean up past chemical and radiological contamination, prevent releases and contamination of groundwater, routinely monitor water sources on the site and in adjacent areas, and to work cooperatively with both the Colorado Department of Public Health and Environment and with the Environmental Protection Agency to plan both cleanup and effluent controls.

Question. Is it not true that given these conditions a plutonium release from Rocky Flats could have potentially drastic consequences on the actual or perceived public health and safety and/or the Denver metropolitan area economy and property values?

Answer. The Department is committed to preventing any releases of plutonium from the Rocky Flats site. Independent studies performed by the State of Colorado confirm that no significant effects are apparent beyond the borders of the site from over 40 years of experience of the plant. Public risks have declined rather than increased in recent years. Still, we are seeking to eliminate the potential for a release by accelerating site deactivation. Perceptions are sometimes difficult to influence, but we are working hard to ensure that the facts are made available, so that the public can accurately understand the risks.

Question. Is it not true that if there was a release of plutonium it could expose the government to billions of dollars of unbudgeted liabilities?

Answer. A significant release of plutonium that caused physical injury of persons or damage to property could expose the Government to potential liability, the amount of which would depend on the extent of the resulting injuries and damage. Under the Price-Anderson Act, as amended, Congress has legislated that the Department of Energy shall indemnify its contractors for any "public liability" resulting from a "nuclear incident" (as defined therein)—i.e., a release of radioactive or other toxic materials resulting in "bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of or use of property." 42 U.S.C. §§ 2210.d, 2014. q & w. Neither the Department of Energy nor the Government as a whole has specifically budgeted for such a contingency.

ROCKY FLATS LAND USE

Question. Is it not true that a responsible closure strategy and regulatory agreement exists which is supported by the environmental regulators and the state and local elected officials and that a symbol of the Colorado community's commitment to reasonableness and speed of the closure is that a residential cleanup standard is not required even though the site lies in a desirable urban area?

Answer. The land uses for the Rocky Flats Environmental Technology Site in Colorado are prescribed by the Rocky Flats Cleanup Agreement signed by the Department of Energy (DOE), the Environmental Protection Agency, and the State of Colorado in July 1996. The preamble of the agreement states that cleanup decisions and activities are to be based on open space use and limited industrial use of the Rocky Flats site. These future land uses are consistent with the views of most of the local governments. The Cities of Broomfield and Westminster, adjacent to the site, have expressed concern about the long-term land use restrictions. Also, the Citizen Advisory Board has expressed concerns about the cleanup standards.

Specific future land uses and post-cleanup designations at the Rocky Flats site are, and will be, developed in consultation with local governments and stakeholders. The Rocky Flats Local Impacts Initiative, a coalition of local governments, workers, community-based interest groups, private sector interests, and surrounding landowners and citizens, is currently working with DOE and local development agencies to encourage business development at the Rocky Flats site. The Rocky Flats Future Site Uses Working Group, a coalition representing a broad spectrum of interests and stakeholders, has also developed recommendations regarding future use of the Rocky Flats property. Residential development at Rocky Flats has not been recommended by this group, nor by any other planning groups. Commercial and industrial uses of developed portions of the site are being considered and would be beneficial. Even though commercial development in undeveloped portions of the property has not been ruled out, preservation of this area as open space is consistent with DOE policy, the Rocky Flats Future Site Working Group recommendations, and the Jefferson County Planning Department recommendations. The Jefferson County Board of Commissioners has also adopted a resolution stating its support of maintaining, in perpetuity, the undeveloped Rocky Flats buffer zone as open space. The open space designation assumes no development will occur in these areas.

LABOR UNION AGREEMENTS WITH CONTRACTORS

Question. Is it not true that the labor unions have agreements with the contractor which support the site closure and contain compromises to increase productivity and efficiency?

Answer. Yes. The labor unions and contractor have agreed on a variety of innovative and flexible work assignment guidelines that will allow union members to work across the traditional work assignment boundaries. We expect that implementation of these guidelines will support site closure and promote increased site productivity and efficiency.

TEN-YEAR PLAN

Question. Is it not true that Rocky Flats can be safely closed in 10 years or less (by the end fiscal year 2006) to an open space configuration with all plutonium or waste shipped off site or stored (for future off-site disposal) in newly constructed safe facilities?

Answer. The Department is in the process of compiling and evaluating draft "2006 Plans" (formerly known as the Ten-Year Plans) submitted by our Operations Offices on February 28, 1997, for development of a discussion draft of the "EM 2006 Plan. It is expected that the majority of sites will complete cleanup in ten years. We recognize that for large sites such as Hanford, the Savannah River Site, and the Idaho National Engineering and Environmental Laboratory, site closure will take substantially longer than ten years due primarily to the large quantities of high-level and transuranic waste requiring management. We are currently evaluating scenarios which could lead to Rocky Flats being safely closed by 2006. When completed, the draft document, which is scheduled for release soon along with draft documents, will present our analysis of whether Rocky Flats closure is envisioned by 2006.

Question. Is it not true that this 10 year closure scenario also provides the government with the lowest life cycle cost for the closure?

Answer. One major reason "The 2006 Plan" vision was established by Assistant Secretary Al Alm was the pressing need to complete as much cleanup as possible over the next decade to reduce both economic and environmental long-term liabilities. While we are presently evaluating the February 28, 1997, draft "Site 2006 Plan" submittals, we anticipate significant reductions in site life-cycle costs and acceleration of site completion dates as part of the discussion draft of the 2006 Plan compared to previous estimates. Complex-wide, life-cycle costs calculated under the 2006 Plan process will be the lowest published to date.

Question. Is it not true that this 10 year closure would reduce the Rocky Flats current outlays of over $600M/year, in 10 years, to substantially less than $50M/

yr long term management and monitoring cost, freeing up this funding for other pressing needs at DOE or other agencies?

Answer. As part of the draft "Site 2006 Plan" submittals to Headquarters, two potential planning cases were examined—one at a $5.5 billion and the other at a $6.0 billion per year budget starting in fiscal year 1999. In developing two planning cases, EM has been able to analyze the impacts of different funding levels on site life-cycle costs and projected site closure dates. Although these scenarios are not exhaustive of all possible planning scenarios, they serve to highlight the major issues related to alternate funding scenarios and EM's ability to meet the "2006 Plan" vision. These analyses will be part of the discussion draft of the "2006 Plan" document scheduled to be released soon to the public for review and comment.

Question. Is it not true that this 10 year closure can be achieved by increasing funding to Rocky Flats over the current plan by less than 2 percent of the proposed annual EM budget?

Answer. As discussed in response to your previous question, the Department is currently analyzing two planning cases to determine the impacts of different funding levels on site life-cycle costs and projected site closure dates. The Department is also exploring various options to further accelerate site closures within the constraints of the two planning cases.

One option would be to adjust the two planning cases based upon each site achieving specific performance enhancement targets. Another option being considered is to not only assume performance enhancements at each site, but to also make some minor reallocations of resources within the $6.0 billion planning case to a few selected sites to further accelerate site closure. One site which was assumed to receive a minor reallocation for purposes of analysis was Rocky Flats. When the analysis is completed, it will be presented in the discussion draft of the "2006 Plan".

SUBCOMMITTEE RECESS

Senator DOMENICI. The subcommittee stands in recess until April 24, at 9:30 a.m.

[Whereupon, at 11:05 a.m., Tuesday, April 22, the subcommittee was recessed, to reconvene at 9:30 a.m., Thursday, April 24.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1998

THURSDAY, APRIL 24, 1997

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 9:32 a.m., in room SD–124, Dirksen Senate Office Building, Hon. Pete V. Domenici (chairman) presiding.

Present: Senators Domenici, Bennett, Craig, Reid, Byrd, Murray, Kohl, and Dorgan.

DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

STATEMENT OF PATRICIA J. BENEKE, ASSISTANT SECRETARY OF INTERIOR FOR WATER AND SCIENCE

ACCOMPANIED BY ELUID L. MARTINEZ, COMMISSIONER

OPENING STATEMENT

Senator DOMENICI. The hearing will please come to order. Let me just say for all witnesses we have kind of a fractured morning, but I consider the testimony and the questions to be important. So I am going to try to get this done in spite of a couple of other commitments Senator Reid has a couple of appointments that he must attend, so he is going to go first here for a few minutes. Then, I am going to go until 10:30 or 10:45—if we are not finished I am going to recess for a while and go to a closed hearing related to the treaty that we are talking about. I should not be there too long. If I do get tied up too long, I will excuse the witnesses or call and excuse you. Otherwise, the witnesses will have to wait until I return, which may be 11 o'clock or 11:30, something like that.

Senator Reid, would you care to proceed?

STATEMENT OF HARRY REID

Senator REID. Mr. Chairman, thank you very much. As I indicated to you, I have to go to a meeting at the White House at 10 o'clock. We are going to work on your budget, on our budget. We hope to make some progress there. So I have to leave here about a quarter of, so I appreciate very much your allowing me to be out of order here just for a few minutes.

Mr. Chairman, both of these panels are extremely important to the country, the West, and especially Nevada. I have enjoyed my

working relationship with Secretary Beneke. The Bureau of Reclamation, of course, we in Nevada are very aware and cognizant of the Bureau of Reclamation. The first reclamation project in the history of the country was in Nevada, the Newlands project, which has been good, but not all good. We have had some problems with it over the years. We are working to rectify some of those as we speak. The Bureau of Reclamation, I should indicate to Mr. Martinez that one of his predecessors as Commissioner of the Bureau of Reclamation was a Nevadan, Bob Broadbent, who did a very fine job. He left here to go back and run McCarren Airport, which is the seventh or eighth busiest airport in the world. He has just announced his retirement, and all of his good training he says came from his work as Commissioner of the Bureau of Reclamation.

We look forward to this testimony, I will have my staff here, with your permission, Mr. Chairman, of this panel and the second panel. I have some questions I would like to submit in writing, and I will do that recognizing the importance of the Bureau of Reclamation and the Corps of Engineers to the State of Nevada and how closely we have had to work with them these past few years. The problems with the Corps have been exacerbated by the fact that in southern Nevada, the Las Vegas area, it is growing by from 6,000 to 7,000 people a month, and that has created tremendous problems in that arid area. The Corps has been involved in projects approaching $1 billion there now.

Thank you, Mr. Chairman, for allowing me to go out of order. As I indicated, with your permission I will submit my questions in writing.

Senator DOMENICI. Thank you, Senator Reid. Also let me thank you for your diligence on this subcommittee. I look forward to working with you. I mean, your genuine interest in some of these areas is going to make our joint and mutual job a lot easier. I appreciate that very much.

I have some opening remarks, but frankly I think I am just going to put them in the record, in the interest of time. I want to welcome you. Obviously, Eluid, it is nice to have you here. I hope with all the work you have got you have plenty of time to spend in New Mexico for one reason or another, just for your own health and well-being. It is a great place when you are all confused and confounded up here, it is a wonderful place to go. I hope you get a chance to do that every now and then.

And Patty, it is really great to see you back. We worked together for many years on the Energy Committee. You are doing a good job at Interior. I look forward to your testimony.

PREPARED STATEMENT

I understand we are going to proceed in the following manner, Assistant Secretary of Interior Beneke is going to go first, Commissioner Martinez second, and then we will proceed to the Corps witnesses. Please proceed.

[The statement follows:]

PREPARED STATEMENT OF SENATOR PETE V. DOMENICI

I want to welcome everyone to the hearing today. We have a lot of territory to cover this morning. Therefore, the committee will need the help and understanding of the members in order to get through it in an orderly manner.

First, we will hear from the Department of the Interior and the Bureau of Reclamation. Patricia Beneke, Assistant Secretary of the Interior for Water and Science will testify in support of the President's budget request for the Bureau of Reclamation and the Central Utah Project Completion project. The Commissioner of the Bureau of Reclamation, Eluid Martinez will then present his summary of the specific programs included in the fiscal year 1998 request for the Bureau of Reclamation.

Following the Bureau of Reclamation, the committee will turn to the U.S. Army Corps of Engineers and will hear from Assistant Secretary of the Army for Civil Works, H. Martin Lancaster; Lt. Gen. Joe N. Ballard, Chief, U.S. Army Corps of Engineers; and Maj. Gen. Russell Fuhrman, the Director of Civil Works for the Corps of Engineer.

Before calling on Assistant Secretary Beneke, I should say that both agencies have large increases proposed in their budgets for next fiscal year. The Bureau of Reclamation has included $143 million to initiate the California Bay-Delta Ecosystem Restoration program, a program with a total cost in the billions of dollars. In the Corps of Engineers budget, $330 million is being requested to transition to full funding of capital asset acquisition. While I'm sure both of these requests have merit, they will have to be given careful consideration before committing large sums to them in 1998. If you exclude these major initiatives from the budget, the funding levels for the remaining on-going projects and activities of both the Bureau and Corps are at about the same level as the current fiscal year.

We must also keep in mind that the non-Defense discretionary allocation for the Energy and Water Subcommittee has consistently been below the President's request for the past several years. That obviously means that the subcommittee has had to find reductions, while still trying to accommodate member requests. Fiscal year 1998 will probably be no different—I am sure others have noticed the large increase and have ways to use the additional resources. Therefore, it will be essential that the Subcommittee receive a good increase over the current fiscal year in order to formulate an acceptable bill.

The subcommittee is meeting at an appropriate time. The flooding in the Northern Great Plains highlights the importance of the flood control projects constructed by the Federal government. I received Annual Flood Damage Report for fiscal year 1995 from Secretary Lancaster recently which indicates that the value of the flood damages prevented by Corps projects and emergency response totaled $26.8 billion in fiscal year 1995, significantly above the $16.2 billion 10-year average for Corps projects and operations. So, these are important programs not only to the people in the local areas affected, by to the Nation as a whole.

STATEMENT OF PATRICIA J. BENEKE

Ms. BENEKE. Thank you very much, Mr. Chairman. I am pleased to appear again before the subcommittee to testify in support of the President's fiscal year 1998 budget for the Bureau of Reclamation and the central Utah project.

The budget request for the Department reflects the administration's continued commitment to address natural resource issues by working in geographically based partnerships not only across jurisdictional boundaries within the Federal Government, but also with the States, tribes, local communities, and affected stakeholders.

This approach is reflected in several major initiatives in the Department's fiscal year 1998 budget, including restoration of the Everglades in south Florida, implementation of the President's forest plan in the Pacific Northwest, and restoration of California's bay-delta. This morning, in the interest of time, I would like to highlight only one or two key elements in Reclamation's budget, and then also briefly mention the budget request for the central Utah project, for which my office has implementation responsibility.

CALIFORNIA BAY-DELTA

The President's budget request contains the full $143.3 million authorized last fall in the Bay-Delta Environmental Enhancement and Security Act. The authorization became effective last November when California voters approved a $995 million bond issue to cover State cost sharing for activities to restore the bay-delta and for other water resource activities in California. The President's budget proposes to place this $143.3 million in a new account under the Bureau of Reclamation for use by a number of participating agencies based on plans being developed by a consortium of Federal and State agencies, CALFED, with extensive stakeholder input. The administration's proposed appropriation language requires the Secretary of the Interior to approve those plans. The funds would be used to match non-Federal funding under the terms of a cost-sharing agreement which is expected to be finalized this summer.

The CALFED staff, working with participating agencies and based on extensive stakeholder input, has developed a preliminary fiscal year 1998 program that covers habitat acquisition and restoration, improvements to fish screens and passage, and exotic species management. All provide early implementation benefits.

These preliminary plans are outlined in this material, which I would request be submitted and included in the committee's record. We will keep the subcommittee apprised as the fiscal year 1998 program is finalized.

[The information follows:]

[CLERK'S NOTE.— The information referred to can be found in the Energy and Water Subcommittee files.]

OTHER PRIORITY PROGRAMS

Ms. BENEKE. I would like also to note two other issues which are priorities of both the Commissioner and myself that are reflected in the budget. The 1998 budget submission includes adequate funding for operation and maintenance, and in addition includes an increase of about $22 million for the dam safety program.

CENTRAL UTAH PROJECT

I will now turn briefly to the central Utah project. Consistent with the Central Utah Project Completion Act, the Secretary has delegated to my office responsibilities for completion of this project and funding of fish, wildlife and recreation mitigation and conservation. Ron Johnston, the program coordinator, is here today to help answer any questions that the subcommittee might have regarding the project. I would like to report that I recently signed a record of decision for the Wasatch County water efficiency and Daniel replacement projects which permits the district to proceed with construction of that feature.

The overall fiscal year 1998 request for the central Utah project completion account provides $41.2 million for use by the district, the commission, and the Department to implement titles II through IV of the Central Utah Project Completion Act.

PREPARED STATEMENT

That completes my statement today. Again, it is a privilege and an honor to be here before the subcommittee, and I would be pleased to answer any questions.

[The statement follows:]

PREPARED STATEMENT OF PATRICIA J. BENEKE

I am pleased to appear before this Subcommittee again as Assistant Secretary for Water & Science to testify in support of the President's fiscal year 1998 budget for the Bureau of Reclamation and the Central Utah Project.

The budget request for the Department of the Interior, including these programs, reflects the Department's and the Administration's continued commitment to address natural resource issues by working in geographically-based partnerships that cross not only the jurisdictional boundaries within the Federal government but also involve the States, Tribes, local communities and affected stakeholders.

This approach is reflected in several major initiatives in the Department's fiscal year 1998 budget, including actions to restore the Everglades in South Florida, to implement the President's Forest Plan in the Pacific Northwest and to restore California's Bay-Delta. Because finding for the Bay-Delta Restoration Program is included in the Bureau of Reclamation's budget request, I will discuss it in more detail this morning. Eluid Martinez, the Commissioner of the Bureau of Reclamation is appearing with me today. His testimony will address details of the fiscal year 1998 budget request for the Bureau of Reclamation. This morning I would like to highlight only one or two key elements in Reclamation's budget and also discuss the request for the Central Utah Project, for which my office is responsible. Ron Johnston, Program Director for the Central Utah Project (CUP) Completion Act Office is also with me today.

CALIFORNIA BAY-DELTA RESTORATION

The President's fiscal year 1998 budget request contains the full $143.3 million authorized last fall in the Bay-Delta Environmental Enhancement and Security Act. The historic 1994 Bay-Delta Accord recognized that a comprehensive package of actions is required to strike a fair balance among competing uses, restoring and protecting the Bay-Delta ecosystem while providing the reliable water supply on which the State's long-term economic health depends. Under the Accord, CALFED—a consortium of the Federal and State agencies with management and regulatory responsibilities in the Bay-Delta—has been charged with finding a balanced solution to the four main problems in the Bay-Delta: uncertain water supplies, aging levees, declining fish and wildlife habitat, and threatened water quality. Working with stakeholder groups, CALFED has begun the process of defining and analyzing options which can result in a comprehensive, long-term restoration program.

Last fall, the Congress passed and the President signed the California Bay-Delta Environmental Enhancement and Water Security Act, which authorizes $143.3 million a year for three years in additional Federal spending for Bay-Delta ecosystem restoration. The authorization became effective in November 1996, when California voters approved a $995 million bond issue to cover State cost sharing for activities to restore the Bay-Delta and for other water resources activities in California. The President's budget proposes to place the $143.3 million in a new account under the Bureau of Reclamation, for use by a number of participating agencies based on plans to be developed by CALFED with extensive stakeholder input. The Administration's proposed appropriation language requires the Secretary of the Interior, in consultation with other Federal agencies, to approve those plans. These funds would be used to match non-Federal funding under the terms of a cost-sharing agreement which is expected to be finalized this summer.

CALFED staff, working with participating agencies and based on extensive stakeholder input, has developed a preliminary fiscal year 1998 program that covers habitat acquisition and restoration, improvements to fish screens and passage, and exotic species management that provide early implementation benefits. We will keep the Subcommittee apprised as the fiscal year 1998 program is finalized.

BUREAU OF RECLAMATION

Aside from the request for the Bay-Delta Restoration initiative, the budget request for the Bureau of Reclamation totals nearly $764 million, a decrease of almost $12 million. The request includes adequate funding for operations, maintenance and

rehabilitation, which continues to be a high priority for both the Commissioner and me. The request also includes $96.1 million for the dam safety program, an increase of $22 million over last year's enacted level. Within this request for the dam safety program, $15.6 million is allocated to fully fund the Federal share of cost for modifications of Horse Mesa Dam in the Salt River Project. The request also includes funding for several key projects: Central Arizona Project, $61 million; Colorado River Basin Salinity Control, $25 million; Garrison Diversion Unit, $23 million; Water Reclamation/Reuse projects, $32 million; Central Valley Project, $121 million; Columbia Basin Project and Columbia/Snake River Salmon Recovery, $23 million.

I would like to report that the Bureau continues its notable efforts to reinvent itself and to fully implement its new mission as a water resources manager. Reclamation's water management mission places a greater emphasis on water conservation, recycling and reuse; developing partnerships with its customers; States and Tribes; finding ways to bring various interests together to address everyone's needs; transferring title and operation of some facilities to local beneficiaries; and achieving a higher level of responsibility to the taxpayer. All these changes have one goal—to meet the increasing water demands of the West while protecting the environment and the public's investment. The process of implementing change requires persistence, adequate financial and human resources and a clear focus on the goal. The President's fiscal year 1998 budget reflects the Administration's continued commitment to achieving that goal and acknowledges the successes which Reclamation has achieved to date as it evolves from a traditional civil works agency into a modern water resources management organization.

CENTRAL UTAH PROJECT COMPLETION ACT

Consistent with the Central Utah Project Completion Act, the Secretary has delegated to the Assistant Secretary responsibilities for completion of the project and funding of fish, wildlife and recreation mitigation and conservation. As a result, we established a program coordination office in Provo, Utah, with a Program Director to provide oversight, review and liaison with the Central Utah Water Conservancy District, the Utah Reclamation Mitigation and Conservation Commission, and the Ute Indian Tribe and to assist in administering the responsibilities of the Secretary under the Act. Ron Johnston, the program coordinator, is here today to help answer your questions. I would like to report that I recently signed a Record of Decision for the Wasatch County Water Efficiency and Daniel Replacement Projects in the Heber Valley which permits the District to proceed with construction.

The fiscal year 1998 request for the Central Utah Project Completion Account provides $41.2 million for use by the District, the Commission and the Department to implement Titles II through IV of the Act, a decrease of $2.5 million from fiscal year 1997. The overall decrease reflects completion in early 1998 of a major contract for construction of the Diamond Fork Pipeline, and the Administration's efforts to bring the Federal budget into balance by 2002.

The request includes $21.2 million for the District to continue construction and implementation of the Wasatch County Water Efficiency Project, the Daniels Replacement Project, and other water conservation projects; to continue construction of the Diamond Fork and Spanish Fork Canyon/Nephi Irrigation Systems; and to continue implementation of the Uinta Basin Replacement Project and groundwater recharge and conjunctive use programs. In addition, the fiscal year 1998 request includes $2.3 million to initiate construction activities on additional replacement facilities for the Uinta and Upalco Units that serve Indian and non-Indian users in the Uinta Basin.

The request also provides $11.6 million for use by the Mitigation Commission for mitigation and conservation projects authorized in Title III of the Act and to complete other environmental commitments identified in Reclamation Planning documents. This amount is a decrease of $0.1 million from the fiscal year 1997 amount.

This completes my statement today. Again, thank you for providing me the opportunity to discuss with this subcommittee our fiscal year 1998 requests and the Commissioner and I will be pleased to respond to your questions.

STATEMENT OF ELUID L. MARTINEZ

Senator DOMENICI. Thank you very much, Madame Secretary. Commissioner, you may please proceed.

Mr. MARTINEZ. Mr. Chairman, I have submitted my full prepared statement for the record. I will try to summarize.

Reclamation's fiscal year 1998 budget is requested in a new programmatic structure that more appropriately reflects Reclamation's mission as a water resources management agency. It is more responsive to the planning and accounting and reporting requirements of the Government Performance and Results Act of 1993. Reclamation has produced a final draft strategic plan, and is now providing outreach to its customers and to Congress. The plan is also available on Reclamation's web page.

SUMMARY OF 1998 BUDGET REQUEST

The Bureau of Reclamation's request for fiscal year 1998 is for $907 million of current authority. Of this amount, $764 million is requested for ongoing programs. This represents a decrease of approximately $11.8 million from the fiscal year 1997 level. Reclamation's fiscal year 1998 request also includes an additional $143.3 million for a new California Bay-Delta Ecosystem Restoration Program.

I will highlight areas of our budget that may be of particular interest. Our budget request includes $32 million for water reclamation and reuse projects, which includes four continuing projects in California and one project in New Mexico. As you are aware, Congress authorized 16 additional water reuse projects through title XVI amendments late in the 104th congressional legislative session. We were unable to consider them for funding in the fiscal year 1998 formulation process, but will give full consideration to these new projects in our fiscal year 1999 budget formulation.

The Safety of Dams Program, which protects people and property downstream of Reclamation dams, continues to be one of our highest priorities. Upon becoming Commissioner in December 1995, I instituted an outside expert peer review panel of Reclamation's dam safety programs to evaluate our programs' strengths and weaknesses. That report has been submitted to Congress, and I have initiated implementing its recommendations. Our fiscal year 1996 appropriation for dam safety was $99 million, our 1997 appropriation was $74 million, and our fiscal year 1998 request is $96 million.

Reclamation has initiated a review, and as appropriate will make improvements to security at our facilities westwide. We have reprogrammed $5 million in fiscal year 1997 allocations for this effort, and are requesting $5 million to continue the effort in fiscal year 1998.

Our budget request includes $10.5 million for six loans westwide, five in California and one in Oregon.

We are requesting approximately $48 million for our Policy and Administration Program. This compares with a fiscal year 1997 appropriation of $46 million.

I would like to make the committee aware of our efforts to streamline our work force. Reclamation's fiscal year 1993 FTE's totaled 7,780 positions. Our fiscal year 1998 request is for 6,412 positions, representing an 18 percent reduction, or 1,400 positions.

PREPARED STATEMENT

Mr. Chairman, this concludes my comments. I am prepared to respond to any questions you have.

[The statement follows:]

PREPARED STATEMENT OF ELUID L. MARTINEZ

Mr. Chairman and Members of the Subcommittee, my name is Eluid Martinez, and I am the Commissioner of Reclamation. I appreciate the opportunity to appear before the Subcommittee this morning to discuss the Bureau of Reclamation's fiscal year 1998 budget request.

Established in 1902 to develop and manage water and related resources in the Western United States, the Bureau of Reclamation's mission was implemented through building a large infrastructure, including many large dams and miles of irrigation canals. Reclamation is now the second largest producer of hydroelectric power in the Western states and the fifth largest electric utility in the West. As the largest water wholesaler in the country, Reclamation is bringing water resources to more than 31 million people and irrigating approximately 10 million acres of land. Reclamation's 58 powerplants generate an annual 40 billion kilowatt hours of electrical energy, which is the equivalent of 68 million barrels of oil saved. This is enough electricity to serve more than 6 million homes.

Following a strategy of implementing Congressional directives through improved water resources management, the emphasis has changed from building large structures to implementing programs that use existing water supplies more efficiently to meet the increased population of the West. Bureau of Reclamation programs include a broad range of water uses, such as urban needs, water reclamation and reuse, irrigation, Indian self-sufficiency, fish and wildlife protection, endangered species recovery, environmental restoration, and recreation. At the same time, as Reclamation's infrastructure ages, projects are requiring more intense maintenance.

Reclamation's fiscal year 1998 budget is presented in a new programmatic structure, which is a departure from past presentations. The new structure better reflects the activities of a water resources management agency and is more responsive to the planning, accounting, and reporting requirements of the Government Performance and Results Act of 1993. For fiscal year 1998 the Bureau of Reclamation is requesting $907 million of current authority. Of this amount, $763.6 million is requested for Reclamation's ongoing programs, a decrease of $11.8 million from the 1997 enacted level. Reclamation's request also includes $143.3 million to be distributed among participating Federal agencies for a new California Bay-Delta Ecosystem Restoration program.

Before moving into the more specific financial data, I'd like to discuss several programs of interest.

WESTERN FLOODS

During the winter of 1996–97 Reclamation-served areas have been experiencing unusually heavy water inflow and snowpack. Heavy rains and premature thawing of heavy snowfalls have caused significant flooding in parts of the West, especially in Northern California. The President's March 19 supplemental request to the fiscal year 1997 budget includes $4.5 million to repair damage to Reclamation's facilities. The entire system of Federal facilities, including Reclamation's strategically placed multi-purpose dams, has saved surrounding communities from much flooding-related damage. Thanks in part to this Committee's prompt action on our request to perform emergency repairs following the gate failure at Folsom Dam, many critical areas of Northern California have been spared even more damage. We are continuing to monitor the current situation in the Dakotas.

PARTNERSHIPS

In keeping with the President's Reinventing Government Initiative, the Bureau of Reclamation has been soliciting "customer" input; asking whether some of the work could be accomplished as well or better without Federal involvement; looking for ways to cut costs or improve performance; and seeking cost sharing opportunities and ways to put customers first, cut red tape, and empower employees.

The Bonneville Power Administration will provide an estimated $48 million to fund power operation and maintenance costs in the Pacific Northwest Region. In addition, BPA is also providing funds for major replacements and additions at powerplants in the Pacific Northwest. Other partnerships include cost sharing of more than $10 million by non-Federal entities in investigations of water resources issues,

$3 million from the National Fish and Wildlife Foundation, $10 million from partners in Endangered Species Conservation and Recovery Projects, and $5 million under the Efficiency Incentives Program.

PERFORMANCE MEASUREMENT

Reclamation's staff has drafted a strategic plan with goals targeted through fiscal year 2002 consistent with the Government Performance and Results Act of 1993. We will be consulting with the Committee about this draft. Consistent with these five-year goals, performance indicators have been developed to monitor annual progress for key program areas, such as Water and Energy Management and Development and Facility Operation, based on the new programmatic budget structure. An annual performance plan, including the indicators, will be developed. The new structure will focus on objectives, which will facilitate program and budget decisions. We plan to work with the Committee to ensure that any new indicators meet the needs of Congress as well as the Administration.

SCIENCE AND TECHNOLOGY PROGRAM

The request for $7.8 million for the Science and Technology Program addresses high priority field-based needs related to facility and public safety, environmental quality and habitat condition, and reliability of future water supplies. Information derived from this program is of direct use to water users, aquatic ecologists, municipal and industrial water providers, and hydropower producers. Science and technology development is a functional component of all our resource management and facility operation activities. The request will allow Reclamation's funds to be leveraged an additional 1.5 times through partnership with other Federal and non-Federal entities. Priority needs for fiscal year 1998 include watershed and river systems modeling, fisheries management and aquatic ecology, hydroelectric infrastructure protection and enhancement, and program support for the Water Desalination Research and Development Act of 1996.

Now, I would like to focus on Reclamation's fiscal year 1998 Budget request.

Starting in fiscal year 1998, the Water and Related Resources Appropriation incorporates activities previously funded in the Construction Program, General Investigations, and Operations and Maintenance appropriations. Each project and program presentation describes the work to be done in terms of major program activities. The 1997 allotment of funds for each project and program is also presented in terms of the new structure.

Water and Related Resources

The fiscal year 1998 budget request of $666 million for the Water and Related Resources account funds five program activities. These are Facility Operations, Facility Maintenance and Rehabilitation, Water and Energy Management and Development, Fish and Wildlife Management and Development, and Land Management and Development.

The request includes $61.2 million for the Central Arizona Project, $128.9 million for the Central Valley Project, $24.3 million for the Mni Wiconi Project, $10 million for the Mid-Dakota Project, $23.4 million for the Garrison Project, $32.1 million for Water Reclamation and Reuse Projects, and $6 million for the Animas-La Plata Project.

The fiscal year 1998 request includes $32.1 million for water recycling, which includes funding for four projects that were authorized by the Congress in 1992. Because the 16 additional projects were authorized through Title XVI amendments late in the 104th Congressional legislative session, we were unable to consider them in our fiscal year 1998 budget formulation process. Reclamation is evaluating its water reclamation and reuse program. As part of this process we've published a draft white paper and solicited views on developing our program through public meetings.

Our budget request includes several proposals to extend the Administration's policy of fully funding the acquisition of capital assets to water resource projects and other projects that have been funded year-by-year in the past. This initiative is part of an overall effort to improve the way the Federal Government manages the planning, budgeting, and acquisition of capital assets. Full funding is requested for five projects—two would be funded up front and completion of three existing projects would be fully funded through a combination of fiscal year 1998 funds and advance appropriations.

Facility Operation and Facility Maintenance and Rehabilitation

Ensuring public safety and protection of the existing infrastructure, the delivery of water and power benefits, the conservation of natural resources, and the collec-

tion of revenues are among our highest priorities. The request of $275 million for Facility Operation and Facility Maintenance and Rehabilitation funds the direct operation, maintenance, and rehabilitation of Reclamation's projects. Reclamation's budget request includes funds necessary to help ensure the reliability and operational readiness of the facilities at Reclamation's projects. Reclamation regularly conducts preventive maintenance and performs scheduled minor and major maintenance on a recurring basis.

Some realignment of work has taken place as part of the development of the new structure. For example, the Safety of Dams program, formerly part of the Construction Program, has been properly moved to the Facility Maintenance and Rehabilitation Program. The Safety of Dams program, which helps to protect people and property downstream of Reclamation dams, continues to be Reclamation's highest priority, with a request of $96.1 million, which is included in the $275 million. Because of its expertise in the dam safety area, Reclamation also assists other Interior agencies with their dam safety programs. An independent, outside peer review of Reclamation's Safety of Dams program was performed in 1996 to evaluate the program's strengths and weaknesses. The report was transmitted to the Congress.

Water and Energy Management and Development Program

The $287 million request for the Water and Energy Management and Development Program funding provides for continued work on major projects, a number of smaller projects and programs, and applied research activities in the Science and Technology program.

For major construction projects close to completion, Reclamation is committed to seek sufficient funding so that project benefits can be realized and repayment of the Federal investment can be initiated. Each project is examined to determine if uncompleted portions should be either left uncompleted or completed by non-Federal entities. If the decision is made to have Reclamation complete the project, funding is requested to complete the project as quickly as possible, within budgetary constraints. Projects scheduled for completion in fiscal year 1998 include the Grand Valley Unit, CO; Dolores Project, CO; Colorado River Salinity Control Project (Title I), AZ; Umatilla, OR; Brantley Project, NM; and Belle Fourche, SD.

Land Management and Development

The $39.7 million request for Land Management and Development provides for Congressionally-mandated activities such as recreation management, hazardous materials containment and removal under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, and the Resource Conservation and Recovery Act of 1976, cultural resource activities including compliance with the Native American Grave and Repatriation Act, and land resource administration.

Fish and Wildlife Management and Development

The request of $95 million for this category includes funds for conservation, enhancement, and restoration of fish and wildlife resources. Restoration activities have become an increasingly important activity for Reclamation as more species have been added to threatened and endangered lists. The request includes $13 million for water purchases for the Columbia/Snake River Salmon Recovery Project, $4 million for fish screens at the Hamilton City Pumping Plant in California, and $13.3 million for endangered species recovery and habitat restoration in the Platte River Basin and the Colorado River Basin.

Central Valley Project Restoration Fund

The $39.1 million requested for this program will provide for habitat restoration, improvement, and acquisition, as well as other fish and wildlife restoration activities directed by Title XXXIV of Public Law 102–575. That Act provides for comprehensive and coordinated actions, while bringing long-term benefits to California's environment and economy. The program is financed by revenues from water and power users.

A program to continue acquisition of additional water supplies to supplement the quantity of water dedicated to fish and wildlife will require $9 million. Another $12.3 million is requested for programs to restore declining populations of anadromous fish, to avoid loss of juvenile fish resulting from unscreened or inadequately screened diversions, and to assess and monitor the effectiveness of various fish and wildlife restoration activities. Improvements costing $6 million, including $2 million from Water and Related Resources, will be made to the Coleman National Fish Hatchery, in coordination with the U.S. Fish and Wildlife Service.

California Bay-Delta Ecosystem Restoration

Reclamation's request includes $143.3 million for a proposed new program to implement the California Bay-Delta Environmental Enhancement and Water Security Act passed by the 104th Congress. Although requested by Reclamation, these funds will be distributed to Federal agencies participating in a consortium of Federal and State agencies known as CALFED. The agencies have management and regulatory responsibilities in the Bay-Delta area of California. Distribution of these funds will be made based on a program recommended by the CALFED group with substantial stakeholder involvement and approved by the Secretary of the Interior after consultation with other participating agencies. The funds have been requested in one account under the Reclamation budget as a way to manage ecosystem restoration and because Reclamation has experience in administering large projects.

Loan Program

Five ongoing loans, the Chino Basin Desalination Project, Temescal Valley Project, Castroville Irrigation Water Supply Project, Salinas Valley Water Reclamation, and Milltown Hill Project-Douglas County Oregon, are included in the $10.5 million request. San Sevaine Creek Water Project/San Bernardino County, is included as a "grandfathered" loan. These loans concentrate on better utilizing water supplies through reclamation and reuse.

Policy and Administration

The $47.6 million request funds overall program policy management; personnel and equal employment opportunity; safety and health management; budgetary policy formulation; information resources management; procurement and property policy; public affairs coordination; and organizational and management analysis.

Finally, Mr. Chairman, I am advised that the Central Arizona Water Conservation District (CAWCD) has expressed concern about Reclamation's fiscal year 1998 budget request for the Central Arizona Project and has recommended reductions. Reclamation is proud of its of its role in overseeing the investment of $3.2 billion through fiscal year 1996 in moving this project into an operating status. The major portion of the complex task of constructing the multi-faceted CAP has been accomplished, and project facilities are providing many of the intended water, power, flood control, fish and wildlife, and recreation benefits to the citizens of Arizona.

CAWCD is responsible for the repayment of the Federal investment allocated to the commercial power function and to water deliveries to the municipal, industrial and non-Indian agriculture. However Reclamation has broader responsibilities to Native Americans, to the citizens of Arizona, to the taxpayers that invested in the project, and to meeting Congressional directives. Included among those responsibilities are the delivery of project water to Indians, providing flood control, protection of fish and wildlife, development of recreation, and orderly completion of the project. The President's $61.2 million request for fiscal year 1998 represents the most cost-effective way to discharge these responsibilities. This level of funding would support scheduled work and pursuit of contractor claims and would avoid deferrals of necessary project activities. We would be pleased to discuss specifics with the Committee.

Mr. Chairman and Members of the Subcommittee, this concludes my prepared remarks. I would be happy to respond to any questions Members may have concerning the Reclamation program and our fiscal year 1998 Budget request.

Senator DOMENICI. Thank you very much, Commissioner. Madame Secretary, you have a statement besides the one you gave us?

Ms. BENEKE. Yes; I do.

Senator DOMENICI. I am not as certain as you are that we are going to be able to fund the new initiatives and some of those projects to the extent requested. As you know, this subcommittee has not been getting large allocations lately for nondefense discretionary programs like the Bureau and the Corps. So, we are under constant pressure.

WATER DEVELOPMENT

I am a little concerned as to both of the entities, the Corps and the Bureau, that it looks like under this administration we are moving rapidly away from any new development—traditional projects and more in the direction of the ecosystem restoration and

environmental projects. I have nothing against the latter, but it does seem to me that there are still some water supply or flood control projects that are needed in this country. So, we will be looking to try to create a little bit more balance in our appropriations than I believe is in the President's budget. I do not expect either of you to comment.

ANIMAS-LA PLATA PROJECT

I want to talk about two or three subjects that are important. First, let me talk about the Animas-La Plata project. I am fully aware that we take one step forward and two back on this project about every year that it is delayed. I wonder if you have any information about the impact of canceling Animas-La Plata on Indian water rights in New Mexico, particularly Navaho Indian water rights, and more specifically for their Navaho irrigation project to which we have committed 100,000 acre-feet of water.

I have heard from some water experts that cancellation of Animas-La Plata projects could indeed have an effect of dramatically reducing the commitment to New Mexico from the San Juan-Chama diversion. That if, in fact, this project is canceled and nothing done in its stead that will perfect the water rights that should have gone to the Navaho Indians in the State of New Mexico, that obviously there will be a reduction of all of those because the water rights of the two tribes in Colorado will have to be vested, and I would think that is a much bigger problem than has been spoken of by those who would like to see Animas-La Plata canceled. Are you aware of those different contentions, and does it concern the Bureau and the Department if those are real possibilities or probabilities?

Mr. MARTINEZ. Mr. Chairman, let me try to answer that question this way. From my perspective there are two issues if, in fact, Animas-La Plata is deauthorized and canceled. One is, the project is contemplated to provide distribution systems and storage to deliver water both in Colorado and New Mexico to Indian and non-Indian entities. To the extent that the project is not completed, those entities will have to look for other facilities to either divert or impound water.

With respect to water right issues, the Indian Water Rights Settlement Act for the Ute tribes settles rights on the Animas-La Plata project. To the extent that the project is not completed and the Indian Water Rights Settlement is not consummated, and if the Indians go back into court and are successful in obtaining larger quantities of water with earlier priorities, it might impact the water rights available both in Colorado and New Mexico to existing users. That could impact the contract for San Juan-Chama water ultimately, as well as users in New Mexico and Colorado.

Senator DOMENICI. I know this is a little more difficult, but has the Department done any evaluation as to what this means in terms of quantities, or are we just talking generalities at this point?

Mr. MARTINEZ. I think it would depend on if the Indian tribes resort to litigation. We would have to wait to see what the courts would determine would be the Indian rights in order to make an

assessment of what the impact would be to our contractors, but let me say there would be an impact.

Senator DOMENICI. Commissioner, let me say I am going to yield to Senator Murray, who has to be somewhere else. I assume she wants to make a statement now.

STATEMENT OF PATTY MURRAY

Senator MURRAY. Actually, Mr. Chairman, I really appreciate the accommodation. I do have to be at the White House in just a few minutes, but I do want to submit some questions for the record, particularly for the Corps on some turbine outage issues and some cost concerns I had. But I also want to just have the opportunity to thank the Bureau of Reclamation for their excellent response to my question regarding pesticide applications and notification procedures, and would like to continue to work with you on that as we proceed. I just wanted to personally say thank you for that response.

Senator DOMENICI. Senator, are these your questions you would like submitted?

Senator MURRAY. Yes, indeed.

Thank you.

STATEMENT OF BYRON L. DORGAN

Senator DOMENICI. Senator, it is great to have you here. How are you feeling?

Senator DORGAN. I am fine.

Senator DOMENICI. All right. The disaster has not affected you yet?

Senator DORGAN. Mr. Chairman, I was in a boat that ran over a car yesterday, which tells you where the water level is. Mr. Chairman, I appreciate very much the opportunity to be here. I am supposed to be at a meeting with the President at 10:15. I was hoping—it will not interrupt this—I was hoping perhaps at some appropriate point before I have to leave I could make a comment about the immediate flooding and also a couple of other things I am going to put in a statement that I will leave with the committee.

Senator DOMENICI. I would like to go ahead and yield to you now. I have set a schedule where I am going to until about 10:45, then go to the closed session, and if I am not finished I will come back for a little while after that. If you want to check in, you might want to come back later. But proceed at this point, please.

Senator DORGAN. Mr. Chairman, thank you very much. I just returned from North Dakota late last evening to be here for the votes today. Obviously, the flooding in the Red River Valley area of North Dakota is a 500-year flood. It is very severe, and it has been an enormous flood-fighting effort in our State and our region. It is going to require the attention of appropriators. Obviously the President has sent recommendations to us in the supplemental, and I expect it will require the attention of appropriators as well when we begin putting together the appropriations bill for the next fiscal year.

I will not give you a report here, but it is very serious. I have never been in a boat in the middle of a town of 50,000 people

where no one is home. The entire community is evacuated, an entire block of buildings has burned down. It is truly a disaster of significant proportions. And it is not just that town, it is east Grand Forks, MN, Ada, MN, and others.

WATER LEVEL AT DEVILS LAKE

Mr. Chairman, I am going to leave a statement for the record on a range of water issues that are very important to us in North Dakota. I want to mention one additional issue to the crisis that now exists in the Red River Valley, and it is related to it in a different way. We are expecting within minutes a new projection on the water level at Devils Lake, ND. It is a lake that has increased 16 feet in 3 years. It literally threatens to inundate a town of 8,000 people called Devils Lake. We just had a projection that was very ominous. There are projections now scheduled to be released this morning which we think are going to portray more bad news. This is an extraordinarily serious problem as well, and it comes from the same set of circumstances. The most recent projections result from the fact that in the last 3 months we have had 3 years' worth of snow in North Dakota.

But this problem has been developing for a number of years, and the President has made recommendations in his supplemental that are enormously important to us, and we are going to be visiting with you about them later today on the floor.

Senator DOMENICI. Senator, I hope we can visit in the office. I have studied the issue, and it needs more time. I think I have to talk over some issues with you.

Senator DORGAN. We are most anxious to do that. We are trying to get time with you, Senator Stevens, Senator Byrd, Senator Reid, and others. I will appreciate very much your attention to it. You and your staff have been interested and have studied it. I talked to your staff yesterday. I will leave a statement for the record. We have several people who are attending this hearing from the city of Devils Lake and who are also anxious about what we might hear in the next hours about increased flood projections on Devils Lake, ND.

PREPARED STATEMENT

Mr. Chairman, with that, I appreciate your letting me interrupt. I will leave a statement, and look forward to the meetings we will hopefully have later today and/or tomorrow on a more extended basis about Devils Lake and also the Red River Valley flooding.

[The statement follows:]

PREPARED STATEMENT OF SENATOR BYRON L. DORGAN

Mr. Chairman and Committee Members: As you know, the management of North Dakota's water resources is an essential part of North Dakota's future. It is the key issue in the minds of North Dakotans today. The Corps of Engineers and the Bureau of Reclamation play integral roles in that future as well. The Bureau of Reclamation is primarily responsible for the development of the Garrison Diversion Project. The Corps is playing a critical role in ongoing efforts to cope with a near millennial flood in the Red River Valley. It is directly involved in helping to prevent devastating flooding in the Devils Lake Basin and to promote long-term water control management in Lake Sakakawea, the Missouri River, and the Red River Valley.

Flood Prevention and Water Management

The Corps of Engineers plays a key role in the development of North Dakota's water resources and dealing with North Dakota's water problems. The needs for this aid have become dramatically apparent in the recent flooding in the Red River Valley and the Devils Lake Basin.

The Red River Valley is currently experiencing some of the worst flooding in our history. The devastation caused to the towns of Grand Forks, Fargo, Drayton, Pembina and Grafton to name a few can hardly be overstated. The Corps needs to make a long term commitment to bring these areas back to life through the reconstruction of water control structures. I expect to work closely with the Corps to develop and implement such a long term strategy in the future. One program currently in place is the Technical Resource Service. I am asking for a modest outlay of $200,000 to help begin the planning process for the recovery of the Red River Valley. But the larger challenge is to implement a long-term strategy for flood management in the Red River Valley. This is, of course, a small part of the overall recovery plan that may eventually run into the billions of dollars.

Garrison Diversion

Garrison Diversion is the backbone of the state's water development activities. It is a multi-purpose water project, but it is more. It incorporates much of our plans for improved water supplies across all of North Dakota, and with those plans, our hopes for long-term economic development.

Despite the images of rampant flooding, the climate of much of North Dakota is semi-arid. In many parts of the state, including several of our largest cities, both surface and ground water is inadequate in quantity and often in quality as well. By far, the major source of quality surface water in North Dakota is the Missouri River. That means an adequate supply of good water for North Dakota involves moving Missouri River water to many other parts of the state.

We are asking today for an increase in the appropriation for the Garrison Diversion project from the administrations request of $20.4 million to $27.5 million. This funding level is both appropriate and essential given the federal government's unfulfilled commitment to the project. The increased funds will go toward development of the Southwest Pipeline, the North Valley/Walhalla water system, and the Oakes Test Area.

Devils Lake Stabilization

The Corps is further tasked with the prevention of further flood damage in the Devils Lake Basin. The city of Devils Lake and surrounding communities, as well as agricultural producers, have suffered immensely as the lake has risen 16 feet and doubled in size in the last three years inflicting almost $100 million dollars in damages and counting. The Corps has played an indispensable role in providing technical assistance and planning for additional diking, protection of city resources, and the Emergency Outlet Plan for the lake.

The immediate challenge is to prevent the inundation of Devils Lake, a city of 8,000 people. A key component of this plan is to build an emergency outlet as outlined in the President's emergency supplemental request. I urge my colleagues to support $32 million in funding for this essential emergency flood fighting tool. It is a reasonable, cost-effective, and environmentally sound measure.

In addition the Corps is moving forward with a Devils Lake Stabilization Feasibility Study which will be essential in the development of the Devils Lake area. I recommend support of the budget request.

MISSOURI RIVER MANAGEMENT

Finally, the Corps of Engineers is primarily responsible for the maintenance of the Missouri River. The Corps is in the process of developing its revised Missouri River Master Manual, perhaps the most important document in setting forth the policies and practices that will affect the surrounding communities use and development of the river. Since the Garrison Dam was constructed, there has been a considerable increase in the problems experienced by those upstream from the dam.

Upstream, there has been a consistent problem with siltation and the destruction of surrounding agricultural lands. The Buford/Trenton irrigation district is a case in point. The irrigation district has suffered consistent erosion around its pumping plant intake. In order to mitigate this problem the Corps has developed a plan which would include the construction of a jetty to prevent further erosion and siltation around the intake. Last year, $750,000 was appropriated for the project. I was informed by the administration that this amount would be inadequate and a further $750,000 would be needed to finish the project. I ask my colleagues to add $750,000 so that construction can proceed.

A related problem at the Buford/Trenton site is the problem of consistent inundation of valuable agricultural lands due to rising water levels at Lake Sakakawea. The impact of ice flows and seepage within these areas has resulted in the loss of millions of dollars annually to the local community and is directly attributable to the construction of the dam making the federal government primarily responsible for damages. The 1996 Water Resources Development Act authorized the purchase of flowage easements within the area. The Corps has informed me that it is in the process of developing a real estate memorandum and will be able to purchase $5 million in flowage easements in fiscal year 1998. There is a great need within the community for some relief from the consistent floods that have made their land virtually unusable, especially for the high-value crops. Adding $5 million to the fiscal year 1998 budget will begin to address this need.

Mr. Chairman, the needs of North Dakota's water users are great. The responsibility of the federal government to the people of North Dakota is also great. I strongly urge you to strongly consider the needs of North Dakota and the essential work on the projects I have outlined. Once again, the key concerns are: (1) immediate and long term flood prevention in the Red River Valley, (2) development and completion of the Garrison Diversion Project, and (3) emergency flood prevention and long-term stabilization of the Devils Lake Basin.

Senator DOMENICI. Senator, let me just say a lot of that emergency money will come through this subcommittee, and we have already set about to look at it. Frankly, we had assumed that there was more funding needed than the President's request for the overall problem, part of which is your area. The supplemental with reference to the need to repair the damage and to do some things that will prevent that part, we already have contemplated that at a level that I am certain is commensurate with the nature of the problem and consistent with what we generally do as Americans when we have this kind of problem.

We have looked at it from a different vantage point, and we would like very much to share with you whether we think it is imminent or whether we think it can be put off for a time while other things are done, but I am totally aware of your interest and of the precarious nature of the situation. I would hope you would work with us to make sure that I have every bit of information that you have, and that you have every bit that I have, so that we can work together.

It ought to come out of this committee. We should not have to have it thrust upon us by another committee if it is right. And if it is not right, we ought to make that decision too.

Thank you very, very much.

Senator DORGAN. Mr. Chairman, let me make one additional point. I expect the President will be requesting additional money, perhaps today. You are quite correct that the numbers that we have seen so far will not meet the challenge of the magnitude of this disaster in the region itself. I fully expect that additional requests will be coming, perhaps even today.

Senator DOMENICI. I do not want to leave the impression that this subcommittee has all disaster relief. We do not have FEMA, which is a very big player and component. I am going to ask, since I have to be here for however long we are here, if Senator Craig would like to make a few comments, and then I will finish my questioning. Senator, would you like to make some, either one, or questions, whichever you prefer. Senator Craig, would you proceed.

STATEMENT OF LARRY E. CRAIG

Senator CRAIG. I will be brief, and then I can come back with questions, because I had planned to stay here until we leave, Mr. Chairman, for the closed session of the Senate. Let me say to my colleague that I think all of us have watched with amazement at what has gone on in your State. We have had, in Idaho, substantial flooding incidents in the last 2 years, but the scope and the magnitude of this one—we have had 100-year floods, so I am now a firm believer of the line on the map that says this is the 100-year floodplain, but I am amazed that you folks are looking at a 500-year level.

The good news, interestingly enough, I was amazed at the marvelous optimism of we Americans, but apparently it crested in the beleaguered city of Grand Forks yesterday or late last night. This morning it had dropped an inch or two, and on television folks out your way were talking with great optimism again, and I thought how marvelous and remarkable that all is. I am sure that this Congress will respond and help—we must.

ANIMAS-LA PLATA PROJECT

Patty, it is good to see you again. I enjoyed working with you on the Energy Committee, and we are pleased to have you with us today. I walked in just as the chairman was asking about the Animas-La Plata project and the concerns that we have for that. That is an issue that I have worked with my colleagues from Colorado with for a good long while, starting over in the House when Ben Nighthorse Campbell and I teamed up in the House Interior Committee to get that issue authorized. I know that it has taken different shapes and forms over the last good number of years, but I would hope that there still remains a firm commitment to participate and resolve the water right issues. I understand that at a meeting last June in the Secretary's office were supporters of the project who sought a secretarial decree to participate in what is now known as the Romer-Schoettler process. The Secretary told the group, which included the director of the Colorado Department of Natural Resources and the two tribal chairmen, that he knew any solution had to involve a structure or a storage facility. Is the Secretary still committed to that, to your knowledge?

Ms. BENEKE. The Secretary is committed to this process, the Romer-Schoettler process. We have been participating in the process, providing support, information, and technical assistance. We are very hopeful that this process will yield a broadly based consensus solution to the project. We know that there has been a lot of controversy associated with the project, but again we are hopeful that Governor Romer and Lt. Gov. Gail Schoettler can bring all of the interests together in Colorado for a consensus-based solution.

Senator CRAIG. I know when we first authorized this project, the intent was not to share existing water, but to multiply it in the basin by storage. I have to think that if that is possible, that remains an important part of that. Well, anyway, that is Colorado, but I did want you to understand that I remain supportive of that issue and will continue to.

BEAR RIVER AND BEAR LAKE DRAINAGE

Patty, I am very concerned with the situation that exists in the Bear River and Bear Lake drainage as it relates to water quality. This is a unique drainage in the sense that it involves three States. It is very seldom you find a river that starts in one State, runs into another and another, and then back into the State from which it started, but that is the character of this unique river down in southeastern Idaho and Wyoming and Utah. It is a drainage that has its problems right now based on the Clean Water Act, and wants to solve those problems. I have tried to work with them in defining those problems and bringing some solution, and I must say that there has been full participation to date by the Federal agencies involved.

The point is that we are now into the process and I guess my concern, and what I had hoped is that we could be assured of full cooperation from you and the Bureau to work with us to find a solution and finding mechanisms to address the solution.

Ms. BENEKE. Well, Senator, I am not personally familiar with that situation. It is something I would be happy to look into, and certainly we would like to work with you and with the folks out there to try to find a solution.

Senator CRAIG. I did not expect you to be familiar with it, and that is why I raised the issue. I say that because several years ago I asked all the interested parties, including the commission of the Bear River and the States involved and the interested groups, to form a task force. They have done so, and they are funding that and working with it. We have helped them get some resources, and will continue to do that, but I must say that it appears to me that everyone is at the table and there are solutions to the problem of this resource and we ought to work hard at doing that.

WESTERN WATER POLICY REVIEW COMMISSION

Mr. Chairman, another question. Patty, the Bureau of Reclamation budget request under environmental and interagency coordinated activities you have requested about $1.665 million. In that activity you propose to continue the Western Water Policy Review Commission. That authorization runs out this year. I guess I have two questions. First, how much of this request, of the $1.6 million, is allocated to the commission? And second, does the administration intend to seek a reauthorization of the commission?

Ms. BENEKE. I need to be corrected if I am wrong here, but my understanding is that there is not funding included in our budget request for the commission.

Senator CRAIG. There is not at this time?

Ms. BENEKE. That $1.665 million does not include funds for the commission, but the commission's work will be near to completion by the end of this fiscal year, as I understand it. However, they would like to have an opportunity to put their report out for public comment. So for that reason there may be some delay in getting the report up to the Congress. We are inclined to agree that it makes sense for it to go out for public comment. Again, I do not believe that any of the funding appears in this $1.665 million.

Senator CRAIG. And, therefore, it would not be your intent to reauthorize the commission?

Ms. BENEKE. Correct.

Senator CRAIG. Thank you. Thank you, Mr. Chairman.

Senator DOMENICI. Senator Bennett.

STATEMENT OF ROBERT F. BENNETT

Senator BENNETT. Thank you, Mr. Chairman. I apologize that I have two subcommittees meeting simultaneously, and I will have to leave, but I wanted to come down and say some nice things about Patty Beneke and the work that she is doing with my office and with Ron Johnston the Utah administrator of the central Utah project. They are working very hard to try to complete the central Utah project. As I say that, I have a little bit of a sense of incredulity, complete the central Utah project. When I was here as a Senate intern in the early 1950's, the Senator from Utah who sat in this seat who had the same name I do, my father, was working to try to complete the central Utah project. It has been going on for over 40 years. But I wanted to pay public tribute to Patty Beneke and Ron Johnston, and thank them, and thank you directly, Patty, for the excellent working relationship that you have with our office.

Ms. BENEKE. Thank you, Senator.

Senator BENNETT. Now, I understand on the first of May Secretary Babbitt will come before the Interior Appropriations Subcommittee, on which I also sit, and at that time I intend to raise some questions about the Endangered Species Act and how that act may be used to try to frustrate the progress on water development in Utah. I am hoping we can get closure to the water and land use issues out there. The fact that the Endangered Species Act is being used as a tool to try to threaten those projects, projects that have already received approval and are going forward, concerns me a great deal. So, I wanted to kind of give you the heads up on that.

Finally, Mr. Chairman, I have a formal question that I would like to submit to the record and to Ms. Beneke to have her respond to on the record, if I could do that.

Senator DOMENICI. If your staff will give it to our staff, we will be pleased to get it done.

Senator BENNETT. Here it is. With that, I apologize, but I have to be excused.

ANIMAS-LA PLATA PROJECT

Senator DOMENICI. Thank you very much. I want to follow up just a moment and ask the two Senators if they might just listen to this just for a moment, and then we will proceed to questions and go as rapidly as we can. You were not here, Senator Bennett, when the Commissioner of the Bureau of Reclamation indicated that if the Animas-La Plata project is canceled and something is not offered in its place, that it is entirely possible that not only the new water that was going to be preserved for the area would be affected, but that the Navajo irrigation project my be impacted as well. The Navajo agreement committed 100,000 acre-feet to the Navajos, of which they have 70,000, 60,000 under irrigation. Not only that would be in jeopardy, but the allocation for the city of Albuquerque as well. Years ago, a solemn pact was entered into be-

tween the city of Albuquerque and many communities up and down the Rio Grande in New Mexico for an allocation of water that was going to be diverted from the San Juan-Chama project across the mountains to provide water to Albuquerque. In fact, Albuquerque relies on it for its future water.

That was Senator Clinton P. Anderson's tiny, tiny piece of the Colorado River storage project which has brought billions of dollars of resources, growth and water to States other than New Mexico. Now we sit at this late stage holding up another project, Animas-La Plata, that has the clear possibility of canceling significant portions of that water that was allocated to New Mexico as part of this big project between our Mountain States.

Now, frankly, I had not looked at it quite that way until water experts began to tell me the ultimate consequence of this, but I am looking at it precisely as I have described it to you. I do not believe it is at all fair, nor can we sit by and watch it happen, that New Mexico's tiny, yet vital share, of this rather momentous, multi-State project, worth billions of dollars, which is accomplishing fantastic things for other States, that we sit by and watch our water allocation get knocked out because this project cannot proceed.

Frankly, Senator, I want to say to you, Senator Craig, people from my State probably more so than yours are participating in this so-called process which the Assistant Secretary says her boss supports. We did not hear her say he supported building the Animas-La Plata project. That ought to be the next question, because he said he does. But that process has been busy getting nowhere, and the estimates of my friends say it is getting nowhere because the opponents never give anything. Meetings are held, project proposals are supposed to be put on the table, and instead of getting somewhere, new obstacles are raised.

Senator BENNETT. Who are the opponents, Mr. Chairman?

Senator DOMENICI. National environmental groups, there is just no question. I am not objecting to their participation, they ought to. But essentially for the first time we are beginning to focus in on what happens when we do these kinds of things late in the game as to prior commitments that have been made, including to the Navajos who are relatively poor. Frankly, I was in attendance when we finally let the water run to this irrigation project.

You know what we were talking about. It has taken 100 years to get the water that we promised them in a treaty. We signed a treaty and gave them their reservation, and in it it talks about water. Almost 100 years to the year after the commitment we turned the water spigot, and now that water is in jeopardy. To date, we have spent $47 million to do planning and studies. It is not like we are neglecting evaluations and environmental analysis.

FISCAL YEAR 1998 NEW STARTS

I want to make one more comment, in case it is slipping by anyone. You know, there are no new starts in this budget, one demonstration new project in the Bureau's budget other than the new ecological programs which are much a combination of different things. Do you want to correct that point?

Mr. MARTINEZ. I believe we have two new projects, Senator. We have got the arsenic well head project in Albuquerque, and the freeze-thaw project in North Dakota.

Senator DOMENICI. How much are those?

Mr. MARTINEZ. They are very minor projects.

FLOOD DAMAGE REDUCTION

Senator DOMENICI. Now, we have been talking about flood damage, and some people are saying maybe we should not build any of these flood damage prevention structures, be they dams or whatever—you have heard that, have you not?

Senator CRAIG. In fact, Mr. Chairman, a conversation out in the West now is more often we ought to be tearing them down than maintaining them or building anything new.

Senator DOMENICI. I received an annual flood damage report for fiscal year 1995 from Secretary Lancaster recently, and let me tell you what it indicates as to the value of flood damages prevented by Corps projects and emergency responses in the year of 1995. In 1995, $26.8 billion of damages prevented. That is significantly above the $16.2 billion 10-year average for the Corps flood prevention projects.

Now, why do I say this? We are in total sympathy and commitment to try to help our fellow Americans experiencing the 500-year flood up in the Dakotas. So, I think we take for granted much of what the Corps of Engineers and the Bureau of Reclamation do, in light of $26.8 billion of flood damages prevented.

Senator CRAIG. Mr. Chairman, my capital city of Boise has the Boise River running right down through the middle of it, as is typical of so many of our communities. But above that capital city are three dams and three reservoir projects. The river itself has been controlled and regulated for the last 2 months, and in the last 2 months—because we had a major flood incident in early January in Idaho and the surrounding areas there, we got 100-year floods. My hometown had 4 feet of water in it. But my point is simply this, because of those three dams above Boise, Boise has experienced only very minor local flooding. Yet our river authorities, including the Bureau of Reclamation, have told me directly that absent those dams and the ability to control that river, the city of Boise might have looked like Grand Forks, probably not as bad, but clearly there would have been millions, tens of millions of dollars' worth of damage along that river. It has not occurred.

I am saying very loudly out in Idaho and trying to repeat it as often as I can, if it were not but for those dams, the city would be underwater. So our citizens who have not witnessed floods for several generations because of these structures, and the management and the control of these structures, are reminded that in their absence they may have lost their homes and their properties. So I think it is very important, Mr. Chairman, that you remind us of that and build that record, because we are a generation away from severe flooding in most instances where it occurred on the 50-year cycle or the 100-year cycle. That is why I think some people are able to say gee, we ought to start removing dams for other reasons, forgetting that they save a lot of property and a lot of people's lives.

Senator DOMENICI. Thank you, Senator. Commissioner, were you through with your thoughts? I kind of stopped and let Senator Murray—it seems like a week ago now.

IMPACTS OF DEAUTHORIZING THE ANIMAS-LA PLATA PROJECT

Mr. MARTINEZ. I would be glad to present in writing what the impacts of deauthorization of the Animas-La Plata project would be on water rights and water uses in New Mexico and Colorado.

Senator DOMENICI. I have great confidence in your integrity, and I do not believe you would give us anything you did not believe. If you are prepared to do that and you will be permitted to do that, we would like to have it.

[The information follows:]

IMPACT OF DEAUTHORIZATION OF THE ANIMAS-LA PLATA PROJECT ON WATER RIGHTS AND WATER USES IN NEW MEXICO AND COLORADO

The effect of deauthorizing the Animas-La Plata Project is largely dependent upon the deauthorizing language. However if one assumes that deauthorization of the project will lead to a decision by the Colorado Ute Tribes to pursue their water rights by legal means, then I would say that any water users that have water rights on the Animas-La Plata Rivers that are junior to the date of establishment of the Colorado Utes' reservations could have their water rights affected. The effects of such an adjudication on other water users in the San Juan Basin are largely dependent upon two factors: how the tribes use their water rights and how junior water rights holders find means to address their own water needs.

Mr. MARTINEZ. I would like to leave with you the idea that I brought up, that there are two issues related to Animas-La Plata. One is the infrastructure to allow water to be delivered, water that the States have under the Upper Colorado River compact. The other one is the Indian water rights settlement component. To the extent that the settlement is not completed or something put in its place, it could lead to extensive litigation and an impact on existing water rights in the area.

Senator DOMENICI. Right. I assume you are saying that if that was settled there could be something different from Animas-La Plata that would be able to assuage the rights, but there would have to be some kind of storage some place.

Mr. MARTINEZ. Out of the Romer-Schoettler process could come a consensus solution that would address both issues, and I am hopeful that that will occur.

FISCAL YEAR 1998 RESOURCES

Senator DOMENICI. Thank you. I am going to submit a number of questions for your response. I want to make sure that you all understand that I am a supporter of the Bureau and I do not think you have an extravagant base budget. In fact, your budget request is down slightly from the previous year. But I want to remind you that in the allocation of resources, the subcommittee gets two sources of money, as you remember, Secretary Beneke.

We get Defense money, and it can only be spent for Defense purposes, and we get nondefense discretionary spending for domestic purposes. It is this pot of money which funds the Corps and the Bureau. And frankly, the second pot has been squeezed dramatically by the appropriators who allocate the money. I am hopeful that will not happen this year, because there are so many Senators

that are involved in these water projects and coastal activities and the like, that maybe they can put some pressure on that we get a reasonable allocation. But do not be surprised if the amount of money given to this subcommittee is insufficient to handle the dollar requests that you have made.

OK, let us take the next witnesses, please. Thank you both. Do you have questions of these two witnesses?

WESTERN WATER POLICY REVIEW COMMISSION

Senator CRAIG. I have nothing further. But, Madame Secretary, I am looking at your justification sheet as it relates to the $1.665 million request, Western Water Policy Review Commission, I see that there is a reference to the continuation of the western water policy review. We need to just double check our sources and yours so that they obviously have the money to complete their work.

Ms. BENEKE. We would be glad to do that. Bob Wolf, who is our budget officer for Reclamation, says that there is no money in 1998. He just reconfirmed it. He says if there is a mention in the BOR documents it is erroneous. We will clarify that.

Senator CRAIG. Thank you.

CALIFORNIA BAY-DELTA ECOSYSTEM RESTORATION

Ms. BENEKE. Mr. Chairman, if I could make just one more comment. Because the bay-delta request is a large one, and also because the program is an important administration priority, I did want to underscore that the bay-delta is a great example of a new way of doing business for us. We have tried to do our best to break down jurisdictional boundaries between Federal agencies. The program is looking for long-term solutions to issues raised by the bay-delta, and they are not just environmental issues. They are issues relating to water supply, issues relating to levee stability, and in addition ecosystem and water quality issues.

The thing that is remarkable about bay-delta is that the parties are working on a consensus basis, and they have made remarkable progress to date. They are committed to continuing to work on a consensus basis, and there has been a fairly remarkable partnership all around. I just did want to underscore that. I know that the request is large. I am hearing what you are saying here today. We would like very much to have an opportunity to work with the subcommittee on this and provide whatever information you might like.

Thank you very much.

ADDITIONAL COMMITTEE QUESTIONS

Senator DOMENICI. Let me just close by saying Senator Craig knows, by my various discussions with the Republican Senators, and he has been supportive of this position. I do not want to make the point he is supportive of every position, but this one, that we cannot continue to dramatically reduce discretionary spending and expect to have money for projects like this. So, we are hopeful that in the grand compromise, which has taken enough of my blood and energy that I hope it is the last great compromise that I have to be part of, but essentially we are trying to get discretionary spend-

ing up a little so we have money for some of these projects which are really the maintenance of some commitments we have made in this country.

Thank you very much.

[The following questions were not asked at the hearing, but were submitted to the Bureau for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DOMENICI

ANIMAS-LA PLATA

Question. What is the current status of efforts (the so-called Romer/Schoettler Process) to develop an agreeable solution to the Animas-La Plata Project, and how likely is it that an agreeable solution can be worked out? Could you characterize the willingness of the interest groups, both proponents and opponents, to identify common ground and work toward a solution?

Answer. The Romer/Schoettler Process officially got underway in October 1996. Since then six formal, publicly attended meetings and numerous, less formal discussions have ensued. Since the last public meeting on March 16, 1997, Lt. Governor Schoettler has been working with both the Citizens' Coalition and the project proponents to determine the level and type of support needed for each groups' development of an alternative to the project as currently configured. These discussions are also expected to establish commitments by these two groups regarding when one or more conceptually developed alternatives would be ready to be presented to all the parties to the Process.

We do not wish to try to characterize the willingness of the Process parties or to speculate on the outcome of the Process; however, it is noteworthy that this Process marks the first time the opposing parties are meeting face to face to identify and discuss their concerns, and attempt to work out their differences. Reclamation remains optimistic that continuing a dialogue among the parties can yield a solution that represents a broad consensus and addresses the economic and environmental issues presented by the project.

Question. What would be the implications and impacts of walking away from the project?

Answer. Entities in Colorado and New Mexico who may have planned to use water from the Animas-La Plata Project would have to formulate alternative ways to support their needs. That portion of the Colorado Ute Indian Water Rights Final Settlement Agreement, which provides for the delivery of water to the Indian tribes from the Animas-La Plata Project, would also have to be addressed. The Colorado Utes Indian Water Rights Settlement Act gives the Tribes the ability to sue or renegotiate Tribal water rights claims if Reclamation has not completed certain major project components by January 1, 2000. Even if Reclamation started construction this year, it is extremely unlikely that this date would be met.

Question. Have environmental interests been willing to negotiate or engage in serious efforts to identify alternatives which would allow the use of available depletions under the Endangered Species Act in a downsized project?

Answer. I am advised that the Citizens' Coalition, which includes representatives from local and national environmental organizations, is an active participant in the Romer/Schoettler Process and is engaged along with the other participants in a serious effort to explore a range of possible alternatives.

Question. Ms. Beneke, if it is unlikely that a compromise can be worked out with environmental interests, why should the Bureau of Reclamation continue to spend money to evaluate alternatives, perform environmental and cultural activities, and other activities related to the project?

Answer. We are hopeful that a broad consensus can be reached soon. Reclamation's current work including environmental and cultural activities reflects actions necessary to proceed with the Animas-La Plata Project as directed by Congress. We have modified our approach only by what is necessary to maintain the integrity of the Romer/Schoettler Process. We are prepared to spend funds in fiscal year 1998 to evaluate alternatives, as necessary. As the stakeholders endeavor to reach an agreement we expect it will become necessary to provide support for evaluation of alternatives.

Question. How much has been expended on the Animas-La Plata project to date? Of this amount how much has been spent on resolving environmental and endangered species issues?

Answer. Slightly more than $61 million has been expended on the Project, which was initially conceived and planned prior to passage of environmental legislation

such as the National Environmental Policy Act, the Clean Water Act, the Endangered Species Act, and the National Historic Preservation Act. This amount includes about $18 million to address environmental issues, which include endangered species issues. This is an approximate value as it is very difficult to separate environmental issues from standard project planning and design activities.

Question. How long would it take to terminate all activities related to the Animas-La Plata project, and how much would it cost?

Answer. It would take approximately 12 months and $1 million to terminate all activities related to the Animas-La Plata Project. These figures include contract terminations, land disposals, concluding reports and costs associated with resulting personnel reductions. This figure does not include costs associated with renegotiation of the Colorado Ute Indian Tribes' water rights settlement.

CALIFORNIA BAY-DELTA ECOSYSTEM RESTORATION (CALFED)

Question. The President's budget includes a request for $143 million to initiate the California Bay-Delta Ecosystem Restoration program in 1998. The authorization which was inserted into the Omnibus Continuing Resolution late last year totals $429 million over three years. This program is over and above a base program of $70 million which has been funded primarily through the Bureau of Reclamation. The base program has increased from $20 million in 1993 to a high of $77 million in 1996. By the end of this fiscal year, over $280 million will have been spent on Bay-Delta activities. At the end of this authorization, and assuming the base program is funded at about $70 million per year for the next 3 years, over $900 million will have been spent on Bay-Delta restoration activities by the end of the year 2000— and this is federal spending.

How much of the $143 million request for fiscal year 1998 will actually be spent?

Answer. The request for $143.3 million is for higher priority activities that should be undertaken in fiscal year 1998. All such "early implementation" projects must (1) have a lead agency, (2) have adequate project specific environmental documentation, (3) not prejudice the ultimate CALFED decision, and (4) be reviewed through a stakeholder "roundtable process". The process is underway and we anticipate specific projects will be selected in time to allow obligation of the $143.3 million in fiscal year 1998.

Question. Will the work envisioned under this authorization complete the Bay-Delta restoration work?

Answer. Based on estimates provided by CALFED, the requested appropriation for $143.3 million for fiscal year 1998 would be approximately 5 to 10 percent of the current total estimates for the overall ecosystem restoration program costs.

Question. What is the estimated cost and how long will it take to accomplish the restoration work?

Answer. Based on estimates provided by CALFED, the capital costs of the alternatives to address CALFED's overall objectives (ecosystem health, water quality, water supply reliability, and levee system integrity problems) are in the range of $4 to $8 billion, with implementation of the preferred alternative taking between 20 and 30 years. The ecosystem restoration component is still being developed but their preliminary estimates show costs of approximately $2 billion, over 10 to 20 years. This total will be subject to cost-sharing.

Question. Can you give the Committee an estimated completion date for this program?

Answer. The program is designed to repair the environmental decline of the Bay-Delta, a long-term problem that has developed over the past 150 years. The completion date for all aspects of the Bay-Delta Program may take 20 years or longer to implement.

Question. Have detailed technical analysis of alternatives and preparation of some sort of an Environmental Impact Statement been completed? If not, when do you expect those to be finished?

Answer. CALFED has adopted a three-phase approach to identify problems, propose solutions, analyze environmental implications, and devise a long-range plan to protect and enhance the Bay-Delta system. During Phase I, the Program developed a clear definition of the problems and issues associated with the Bay-Delta and identified three alternative solutions. It involved a collaborative process to consider all reasonable options for addressing Bay-Delta problems related to fish and wildlife, water supply, water quality, and levee and channel vulnerability. The process was aided by a significant amount of public participation. Phase I concluded in September 1996.

In Phase II, the Program is conducting a broad environmental review of the three alternatives identified in Phase I to explore their various potential impacts. The full

implications associated with each alternative will be considered, including feasibility, cost and benefits. Phase II will produce a programmatic Environmental Impact Statement/Environmental Impact Report in compliance with National Environmental Policy Act and the California Environmental Quality Act. The programmatic EIS/EIR will focus on the broad policy and resource allocation decisions required to implement a program. The primary purpose of this document will be to inform decision-makers about the inter-related and cumulative consequences of the alternatives and to recommend a program alternative for implementation. This programmatic EIS/EIR is currently scheduled to be completed in late fiscal year 1998. Projects funded in advance of the final programmatic EIS/EIR will have site-specific environmental documentation.

During Phase III, the final phase, the Program will prepare project-specific environmental documents for each element of the selected alternatives. The strategies analyzed during Phase III could be operational, structural, regulatory and/or legislative in nature. Final approval of the environmental documents paves the way for implementation. The permit approvals process will also begin in Phase III.

Question. Why are baseline activities being continued in light of this large new initiative?

Answer. The CALFED effort is building upon an existing framework of Federal responsibilities to achieve a long-term solution. The important, ongoing Federal activities, which constitute the "baseline," support and are an essential component of the larger new initiative. The Congress specifically recognized this institutional arrangement in the 1996 California Bay-Delta Environmental Enhancement and Water Security Act by authorizing $143.3 million annually, for three years, in addition to the baseline funding level. Such additional funding is needed because baseline efforts alone were not sufficient to stem the decline of the Bay-Delta.

Question. Provide for the record a detailed breakout showing the annual funding of those programs which make up baseline spending from 1993 through 1998.

Answer. Details on the baseline spending are being provided to the Subcommittee in the attached report to Congress, from Franklin Raines, on Federal spending on the environmental restoration of California's Bay-Delta region.

Question. Why is it necessary to have both the Central Valley Project Improvement Act and the Bay-Delta program?

Answer. Congress authorized the 1992 Central Valley Project Improvement Act, CVPIA to mitigate for Federal actions related to the construction and operation of the Bureau of Reclamation's Central Valley Project, which harmed California fish and wildlife populations over the past half century. The CVPIA authorizes actions that will be needed if the more comprehensive CALFED effort is to succeed and meshes well with that effort. The CVPIA mitigates adverse impacts by funding activities designed to restore certain fish and wildlife populations throughout the Central Valley. The Bay-Delta Program has a related but different focus—the need to restore the underlying health of the most critical part of the Central Valley ecosystem.

For example, the CVPIA specifically directs the Secretary of the Interior to improve conditions for anadromous fish, such as chinook salmon, steelhead trout, sturgeon, striped bass, and American shad. The Bay-Delta Program will work to improve conditions not only for these fish, but also for other native species such as the delta smelt, a species listed under the Endangered Species Act, splittail, other aquatic and terrestrial species, and riparian plants that inhabit the Delta. Under the CVPIA, Federal efforts include work to restore areas of the Central Valley that are located well upstream of the Bay-Delta, by providing water and additional habitat for wildlife refuges. Finally, the CALFED Program will improve conveyance facilities in the Delta and examine whether building additional storage facilities would assist restoration efforts.

Question. Could savings be realized if the two were consolidated into one?

Answer. Each program is necessary and each has differing, but complementary areas of emphasis. For example, the CVPIA may place higher effort on restoration of rivers upstream of the Delta and refuge needs within the Central Valley, while the Bay-Delta Program will place its major effort on improved conveyance facilities and restoration of ecological processes, habitat, and species in the Delta. Cost savings can be accrued through close coordination of each program rather than consolidating the two very different programs. Together, the two programs provide the policy, management, and technical depth and breadth needed for successful resolution of conflicts in the system between water management and ecosystem health.

Question. Since several agencies are not party to the Bay-Delta accord, what authority do they have to spend appropriations made available through the new authorization?

Answer. Several federal agencies such as the Army Corps of Engineers and Department of Agriculture, not signatory to the 1994 Bay-Delta Accord, have since then become active participants in the CALFED Bay-Delta Program. The federal ecosystem directorate, ClubFed, is currently working to formalize these agencies' involvement because they play essential roles in formulating and implementing long-term alternatives. When agencies formally sign the inter-departmental MOU, they will be eligible to receive funding under this authorization. Once these Federal agencies have become participants in the Program, the broad authorization of section 102(d) of the 1996 California Bay-Delta Environmental Enhancement and Water Security Act would apply: "To the extent not otherwise authorized, those agencies and departments that, currently or subsequently, become participants in the CALFED Bay-Delta Program are hereby authorized to undertake the activities and programs for which Federal cost sharing is provided by this section."

Question. Like most programs of this type, there will surely be more projects than available resources. How will competing projects and activities be evaluated to insure only those projects which will have the greatest impact on restoration of the Bay-Delta environment are funded?

Answer. Early each year, the CALFED technical staff will develop sets of implementation projects and programs to be considered for funding. A list of projects recommended for funding will go to the Ecosystem Roundtable, along with CALFED Management, for review and discussion. The Ecosystem Roundtable is chartered by the Bay-Delta Advisory Council and subject to the Federal Advisory Committee Act. Its members were appointed to provide stakeholder input into the process of priority setting and project selection. Its mission is to provide advice on development of an annual integrated planning process for restoration project selection and on integration and coordination with existing State and Federal restoration programs to increase overall restoration effectiveness. The Roundtable will review an annual work plan to be approved by CALFED Management.

LETTER FROM FRANKLIN D. RAINES

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC, MARCH 21, 1997.

The Honorable DAVID R. OBEY,
Ranking Minority Member, House Appropriations Committee U.S. House of Representatives,
Washington, DC.

DEAR REPRESENTATIVE OBEY: In accordance with Section 103 of the California Bay-Delta Environmental Enhancement and Water Security Act, I am transmitting a report on Federal Spending on the environmental restoration of California's Bay-Delta region.

The enclosed report describes spending levels for fiscal years 1993 through 1998 for each of the Federal agencies participating in a joint Federal and State effort to protect and restore the important biological resources of this region.

Sincerely,

FRANKLIN D. RAINES,
Director.

REPORT TO CONGRESS

INTERAGENCY BUDGET CROSSCUT OF FEDERAL SPENDING ON ECOSYSTEM RESTORATION IN CALIFORNIA'S BAY-DELTA REGION, 1993–98

INTRODUCTION

The California Bay-Delta Environmental Enhancement and Water Security Act requires the Office of Management and Budget to submit to the House and Senate Appropriations Committees an interagency budget crosscut of Federal agency spending for ecosystem restoration and other purposes in California's San Francisco Bay-Sacramento/San Joaquin Delta region (Bay-Delta) for fiscal years 1993 to 1998. Specifically, Section 103 of the Act states:

"The Office of Management and Budget is directed to submit to the House and Senate Committees on Appropriations, as part of the President's fiscal year 1998 Budget, an interagency budget crosscut that displays Federal spending for fiscal years 1993 through 1998 on ecosystem restoration and other purposes in the Bay-

Delta region, separately showing funding provided previously or requested under both preexisting authorities and new authorities granted by this title."

This report fulfills these requirements.

FISCAL YEAR 1998 BUDGET

The President's fiscal year 1998 Budget requests a total of $213.3 million for ecosystem restoration and other activities in California's ecologically and economically important Bay-Delta. Of this amount, $70.0 million is baseline spending for programs undertaken pursuant to preexisting authorizations. The additional $143.3 million requested in fiscal year 1998 is the full amount of fiscal year 1998 spending authorized by the Act. The Act became effective in November 1996, when California voters approved the provisions of California Senate Bill 900 (SB 900). This California law authorized a $995 million bond issue to cover State cost-sharing for activities to restore the Bay-Delta ecosystem and for other California water resources activities. The $143.3 million increase provided in the President's Budget for Bay-Delta represents a 204 percent increase in spending from fiscal year 1997 to fiscal year 1998. The fiscal year 1998 estimate of $70.0 million in baseline spending represents nearly a 250 percent increase over the fiscal year 1993 funding level of $20.2 million.

Bay-Delta Ecosystem Restoration Account

The President's fiscal year 1998 Budget requests funding authorized by the Act in a new appropriation account (entitled "California Bay-Delta Ecosystem Restoration") under the Department of the Interior's Bureau of Reclamation. (See Exhibit 1.) The Department of the Interior would transfer funds appropriated to this account to other participating agencies based on plans to be approved by the Secretary of the Interior. This budget authority would be used to match non-Federal funding under the terms of a cost-sharing agreement now being developed with the State of California.

The ecosystem restoration plans will be developed by "CALFED"—a consortium of Federal and State agencies with management and regulatory responsibilities in the Bay-Delta. CALFED has been charged with finding a balanced solution to the four main problems in the Bay-Delta: declining ecosystem health, uncertain water supplies, aging levees, and threatened water quality. CALFED was established in 1994 when the Federal agencies already coordinating their activities entered into a framework agreement with the Governor's Water Policy Council of the State of California.

Working with stakeholder groups, CALFED has developed a short list of major alternatives, each of which addresses the many problems of the Bay-Delta. It is now performing a detailed technical analysis of these alternatives and preparing a Programmatic Environmental Impact Statement (PEIS). The final PEIS on CALFED's Bay-Delta Program is currently scheduled to be filed in late fiscal year 1998. CALFED is now developing an Ecosystem Restoration Plan that identifies near-term actions that are common to the major alternatives under consideration in the PEIS. In addition, CALFED is working to coordinate ecosystem restoration with current activities responding to the recent floods.

As specified in proposed appropriation language, Federal funds appropriated for ecosystem restoration in fiscal year 1998 would be available for high-priority activities that should be undertaken prior to completion of the PEIS. The Administration expects that such activities will be identified through the process of developing CALFED's near-term Ecosystem Restoration Plan. Such activities are likely to include acquisition of fish and wildlife habitat, improvements to habitat, fish screens, control of exotic species, and monitoring of ecosystem health. After completion of the PEIS, fiscal year 1998 and future funds would be available for the Federal share of the costs of a broader range of projects.

ACTIVITIES INCLUDED IN THE BASELINE

The Act requires a crosscut of "Federal spending for fiscal years 1993 through 1998 on ecosystem restoration and other purposes in the Bay-Delta region." Neither the Act nor the accompanying conference report provided a definition of these purposes. This report uses categories of water resources activities referenced in SB 900 to define Federal baseline spending in the Bay-Delta. The SB 900 categories used are:

—Delta Improvement program, including: the Central Valley Project Improvement program; the Bay-Delta Agreement program (Category III non-flow measures in the 1994 Bay-Delta Agreement); the South Delta Barriers program; and the

CALFED Bay-Delta program (funding of Federal staff responsible for planning, environmental compliance, and implementation of Bay-Delta solutions);

—Clean Water and Water Recycling program, including: Drainage Management, and the Delta Tributary Watershed program; and

—CALFED Bay-Delta Ecosystem Restoration program. This includes certain Federal activities, such as work to address Endangered Species Act requirements, that are necessary parts of ecosystem restoration in the Delta that have been undertaken prior to spending by the State of California on this category and will likely continue.

Exhibit 2 shows, by agency, Baseline Federal spending on ecosystem restoration and other purposes in the Bay-Delta region of California for fiscal year 1993 through fiscal year 1998. These are the discretionary expenditures for programs funded under authorizations that predated the California Bay-Delta Environmental Enhancement and Water Security Act. Baseline spending during the period ranged from $20.2 million in fiscal year 1993 to a high of $77.1 million in fiscal year 1996, to $70.0 million in fiscal year 1998.

AGENCY COMPONENTS OF BASELINE

The Federal agencies currently with baseline funding identified for Bay-Delta ecosystem restoration activities are the Department of the Interior (Bureau of Reclamation, U.S. Fish and Wildlife Service, and the U.S. Geological Survey), the Army Corps of Engineers, the Environmental Protection Agency, the Department of Agriculture (Natural Resources Conservation Service), and the Department of Commerce (National Marine Fisheries Service). Other Federal agencies not listed below may participate with CALFED in Bay-Delta ecosystem restoration in the future.

Department of the Interior

Bureau of Reclamation.—The Bureau of Reclamation (Reclamation) accounts for $55.7 million of baseline spending in fiscal year 1998. During the fiscal year 1993–98 period, the Bureau of Reclamation has provided most of the Federal funding (about 75 percent) for ecosystem restoration activities in the Bay-Delta. Reclamation's primary activities are those authorized by the Central Valley Project Improvement Act. Funds for this purpose have come from general appropriations and from the Central Valley Project Restoration Fund, which consists of revenues collected from project beneficiaries. These funds have supported a variety of activities intended to restore fish and wildlife habitats and populations in the Central Valley, such as the development of the Anadromous Fish Restoration Plan; the acquisition of water for wildlife refuges and other environmental purposes; and the construction of hatchery improvements, fish screens, and other facilities. In addition, Reclamation has provided funds to support the CALFED Bay-Delta Program, the Interagency Ecological Program, and other Bay-Delta restoration activities.

U.S. Geological Survey.—U.S. Geological Survey (USGS) accounts for $3.1 million of fiscal year 1998 baseline funding. Although not yet a member of CALFED, the USGS has contributed critical data and scientific information related to water resources, wetlands, contaminants, and salinity, and assisted in ongoing biological research.

The U.S. Fish and Wildlife Service.—The U.S. Fish and Wildlife Service (USFWS) accounts for $0.7 million in fiscal year 1998. The USFWS has been a member of CALFED since its inception and provides staff support to the Bay-Delta Program.

Army Corps of Engineers

The Army Corps of Engineers (Corps) accounts for $5.1 million of baseline spending in fiscal year 1998. The Corps is not yet a member of CALFED, but has provided support to the Agreement for a number of years. Most of the activities for the Corps consist of projects under Section 1135 of the Water Resources Development Act of 1986, ant General Investigation (GI) program studies. The Corps is working under Section 1135 authority to pursue restoration projects along the Sacramento River by modifying existing Corps flood control and navigation projects. During fiscal year 1998, construction is scheduled to be completed on a project that will restore seasonal and permanent wetlands on 396 acres. To other Section 1135 projects, now in the planning and design stage, will involve restoration of mixed habitats on land currently in agricultural use. The GI program studies are investigating other potential environmental restoration opportunities.

Environmental Protection Agency

The Environmental Protection Agency (EPA) accounts for $2.5 million of baseline spending in fiscal year 1998. EPA is an original member and a cochair of CALFED. EPA participates in the long-term planning process for the CALFED program as

well as in the Delta tributary and drainage management activities. The majority of EPA financial support to the effort includes funds for grants under the Clean Water Act (Sections 319, 205j, and 604b), generally to the State of California. Because the State determines how and where to spend these funds, EPA has estimated the amounts the State is likely to allocate to the Bay-Delta region in fiscal year 1997 and fiscal year 1998. This estimate is based on historical trends and presumed State priorities. EPA has not included any Safe Drinking Water Act funding in its projection, because this program's role in ecosystem restoration and other related activities remains to be developed.

Department of Agriculture

The Department of Agriculture's Natural Resources Conservation Service (NRCS) accounts for $2.1 million of baseline spending in fiscal year 1998. NRCS provides technical assistance to support ecosystem restoration objectives in the Bay-Delta Area. Like the Corps, it is not yet a member of CALFED. Part of the NRCS increase from fiscal year 1997 to fiscal year 1998 reflects support for non-Federal watershed coordinators. In the future, USDA may be able to assist CALFED efforts using its authorities under the Federal Agricultural Reform Act of 1996 to purchase flood easements. Also, USDA can use the mandatory Conservation Reserve Program, Wetland Reserve Program, and Environmental Quality Incentives program to support ecosystem restoration.

Department of Commerce

The Department of Commerce's National Marine Fisheries Service (NMFS) accounts for $0.8 million in fiscal year 1998. NMFS, an original participant in CALFED, is working on a wide variety of improvement activities in the Delta and its tributary watersheds.

EXHIBIT 1

FISCAL YEAR 1998 PRESIDENT'S BUDGET, PROPOSED APPROPRIATION LANGUAGE, DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION

California Bay-Delta Ecosystem Restoration

For necessary expenses of the Department of the Interior and other participating Federal agencies in carrying out the California Bay-Delta Environmental Enhancement and Water Security Act consistent with plans to be approved by the Secretary of the Interior, in consultation with such Federal agencies, $143,300,000, to remain available until expended, of which such amounts as may be necessary to conform with such plans shall be transferred to appropriate accounts of such Federal agencies: *Provided*, That such funds may be obligated only as non-Federal sources provide their share in accordance with the cost-sharing agreement required under section 102(d) of such Act: *Provided further*, That such funds may be obligated prior to the completion of a final programmatic environmental impact statement only if (1) consistent with 40 C.F.R. 1506.1(c), and (2) used for purposes that the Secretary finds are of sufficiently high priority to warrant such an expenditure.

EXHIBIT 2.—ESTIMATE OF FEDERAL SPENDING ON ECOSYSTEM RESTORATION AND OTHER PURPOSES IN THE BAY-DELTA REGION OF CALIFORNIA

[In thousands of dollars]

	Fiscal year (actual)				Fiscal year	
	1993	1994	1995	1996	1997 (estimated)	1998 (budget)
Estimated Baseline by Agency:						
Department of the Interior:						
Bureau of Reclamation	12,061	44,688	42,019	60,678	53,124	55,701
U.S. Fish and Wildlife Service	75	125	291	721	721	650
U.S. Geological Survey	2,756	3,117	3,205	2,933	3,117	3,117
Army Corps of Engineers	1,892	6,259	7,202	7,197	8,677	5,127
Environmental Protection Agency	1,703	1,819	3,114	3,167	[1] 1,742	[1] 2,500
Department of Commerce: National Marine Fisheries Service	287	292	642	650	838	838
Department of Agriculture: National Resources Conservation Service	1,400	1,500	1,600	1,707	1,710	2,100
Subtotal, Baseline	20,174	57,800	58,073	77,053	69,929	70,033
California Bay-Delta Environmental Enhancement and Water Security Act	.....	.....	.....	.....	.....	143,300
Total	20,174	57,800	58,073	77,053	69,929	213,333

[1] Fiscal year 1997 and fiscal year 1998 are based on assumptions about the State's allocation of Federal grants to the Bay-Delta Region.

Question. What criteria will be used and how will project selection be made?

Answer. Technical staff, including state, federal, and public stakeholder representatives, will systematically evaluate and prioritize the ecological stress and limiting factors that are impeding our ability to restore priority habitats and species. Technical staff will then identify and prioritize projects and programs to address these stress and limiting factors. This process will also identify actions individual agencies can take with respect to their baseline activities. Under the appropriations language proposed in the fiscal year 1998 Budget, the Secretary of the Interior would have ultimate responsibility for decisions involving the use of federal funds. The California Secretary for Resources already has a similar responsibility for the use of State funds.

CENTRAL ARIZONA PROJECT

Question. Last year, there was a dispute over how much funding should be provided to the Central Arizona Project. The dispute centered around funding for noncontract costs and costs related to fish and wildlife activities. This resulted in Congress reducing the appropriations for the CAP by $12.988 million and a subsequent letter from the Department informing the Committee of measures being taken by the Bureau of Reclamation to carry out the intent of the Conference agreement while still meeting its legal obligations and providing appropriate oversight where necessary.

Has the Bureau of Reclamation encountered any problems in carrying out the direction contained in the Conference Report on the fiscal year 1997 bill? If so, please explain what the issues are and what is being done to address them.

Answer. Reclamation encountered three major problems in carrying out the directions of the Conference Report. The three issues are detailed in the Department's February 24, 1997 letter to the Committees on Appropriations, a copy of which follows.

LETTER FROM PATRICIA J. BENEKE

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, DC, February 24, 1997.

Honorable JOSEPH M. MCDADE,
Chairman, Subcommittee on Energy and Water Development, Committee on Appropriations, House of Representatives, Washington, DC.

DEAR CHAIRMAN MCDADE: In September 1996, the Congress, during consideration of the Conference Report to the fiscal year 1997 Energy and Water Development Appropriations Bill, reduced the funding levels requested in the Presidents Budget for the Central Arizona Project (CAP) by $12,988,000. This provided a total fiscal year 1997 CAP allocation of $58,740,000. The purpose of this letter is to inform you of the measures being taken by Reclamation to comply as completely as possible with the Conference Report and to follow up on conversations with staff earlier this fiscal year. At the request of the members of the Arizona Congressional delegation during briefings on this subject, we are sending them copies of this letter.

Over the past several months we have attempted to reconcile the intent of the Report language, major funding reductions, and critical project needs. We have been in contact with your staff and members of the delegation during this process and are continuing our discussions. We are making our best efforts to follow the intent of the Report including postponement of several environmental and recreation enhancement projects. We have been advised by our attorneys, however, that the Report does not dispense us from the responsibility to protect the interests of the United States and project beneficiaries in instances where a literal adherence to the specific reductions called for in the Report would prevent us from recovering monetary damages, meeting our legal obligations, or accomplishing in an effective manner work for which funds were provided. As we continue to work with subcommittee and delegation staff to address these issues, we wanted to briefly summarize some of these instances so that you would be aware of the challenges we face. We are facing difficult choices in the following three areas:

1. Those areas where the report expresses a desire to eliminate funding for programs in which the United States stands to recover monetary damages. An example of this is the litigation of Reclamation's latent defects claim for six Hayden-Rhodes Aqueduct siphons. Failure to continue to pursue this litigation could result in not only a loss of substantial monetary recovery (tens of millions of dollars) but also a judgment against the United States, and, therefore, we will need to continue to pursue these programs;

2. Those areas where the report expresses a desire to eliminate funding for activities which Reclamation has a legal requirement to undertake, such as the reasonable and prudent alternatives (RPA's) from the Biological Opinion pertaining to the construction and operation of the CAP. Reclamation will continue to work to ensure that costs for these activities are minimized consistent with legal requirements. In addition, within available resources, we will need to continue work where funds were eliminated for contract and noncontract costs to meet specific environmental mitigation commitments that were previously made. These actions are necessary to avoid the risk of disabling injunctions that could seriously interfere with project operations: and

3. Those areas where the Report provided funds for ongoing and/or new programs or construction contracts but where the report eliminated the noncontract costs required for contract administration, quality control, and construction management. The Report's expressed desire to eliminate these administrative funds makes the oversight of existing contracts difficult and will preclude us from entering into new contracts. We will need to expend administrative funds to accomplish the programs funded in the Report. Examples here include the Sierra Vista effluent recharge project, and the New Waddell Dam Roadrunner Campground.

Thank you for the opportunity to inform you of the steps we have been taking in seeking to comply as completely as possible with the Conference Report accompanying the Fiscal Year 1997 Energy and Water Development Appropriations Act. It is clear that we need to resolve these matters with your staff and the members of the Arizona Delegation. For this reason, I have directed members of my staff to work with your staff to continue to provide further details and to keep the Arizona delegation staff fully apprised of developments as we strive to reach closure on the allocation of these funds. I look forward to resolving this matter shortly.

Sincerely,

PATRICIA J. BENEKE,
Assistant Secretary for Water and Science.

The issues include elimination of funds for programs where the United States stands to recover monetary damages, activities which Reclamation has a legal obligation to undertake, and non-contract funds required to administer ongoing and/or new construction contracts.

The issue associated with the recovery of monetary damages relates to latent defects on six CAP siphons and Reclamation's litigation against the original construction contractor. The United States is currently in litigation seeking to recover from the contractor $39.5 million in monetary damages. The elimination of fiscal year 1997 funding would jeopardize Federal claims against the contractor. To avoid such an outcome, Reclamation is continuing to pursue the litigation, including pre-trial activities, rather than suspend these activities in fiscal year 1997. In addition, dropping the claim at this time could result in monetary judgements against the United States.

The issue of legal obligations relates to compliance with requirements of the Endangered Species Act associated with the CAP Gila River Basin Biological Opinion. If Reclamation fails to implement the Biological Opinion, Reclamation will be vulnerable to charges that it is out of compliance with the Endangered Species Act by operating a federal project in a manner that jeopardizes the continued existence of four endangered native fish species. We have worked extensively with all the stakeholders to minimize the costs of implementing the Reasonable and Prudent Alternative. Delays in implementing the reasonable and prudent alternatives contained in the Biological Opinion form a basis for the lawsuit filed by the Southwest Center for Biological Diversity against Reclamation, the Department and the Fish and Wildlife Service. Further delays ultimately could affect project operations adversely.

The issue of non-contract funds required to administer ongoing and/or new construction contracts relates to the need for such work as contractor claim settlements, warranty inspections, completion reports, as-built drawings, and contract records disposition. In fiscal year 1997 construction contracts were funded, in many cases, without the necessary non-contract costs to administer these contracts. Reclamation is unable to issue new contracts, administer and inspect on-going construction contracts, or resolve contractor claims against the United States without these funds. As a result, Reclamation has decided not to award any new construction contracts in fiscal year 1997 where there is inadequate funding to support the contract administration, to complete as rapidly as possible the ongoing construction contracts, and to expedite completion of any outstanding administration issues associated with these on-going contracts.

Question. Has the fiscal year 1998 request been structured with the fiscal year 1997 Conference Report in mind, and if not, why?

Answer. To the extent possible, Reclamation has formulated the fiscal year 1998 budget for CAP with the fiscal year 1997 conference report in mind. The differences relate to the three issues discussed earlier.

Reclamation included funding to comply with the reasonable and prudent alternatives necessary to comply with the Endangered Species Act Biological Opinion on the Gila River to ensure that the CAP is operated without jeopardizing the continued existence of four endangered native fish species. We have included sufficient funding for non-contract costs to assure that Reclamation carries out its responsibilities associated with construction contract administration and defense of Reclamation in the lawsuit filed by the Southwest Center for Biological Diversity. Finally, we have included sufficient funds to continue pursuit of litigation against the construction contractor to recover $39.5 million due to latent defects discovered on six CAP siphons.

Question. If it has, have you worked with local interests in an effort to head-off problems similar to those we had on the fiscal year 1997 budget?

Answer. Reclamation has worked extensively with local interests, particularly the Central Arizona Water Conservation District and members of the Arizona Congressional delegation, to gain support for Reclamation's goal to efficiently complete the CAP. Reclamation's efforts at local coordination, while successful in gaining District support for several items it opposed in fiscal year 1997, so far has not resulted in complete accord. This is particularly true in the area of adequate funding for staff and support costs necessary to manage and administer a federal project for all beneficiaries and compliance with Endangered Species Act requirements.

DESALINATION PROGRAM

Question. I believe $2 million is included in your budget to address desalination problems and technologies. The budget justification indicates that a portion is for new Phase II pilot projects and new technologies. First, could you tell me what the goals and objectives are and how Reclamation is managing the program to meet those goals and objectives?

Answer. Beginning in fiscal year 1992, Reclamation began sponsoring limited in-house and contractual research efforts under the Water Treatment Technology Program. Beginning in fiscal year 1998, the Water Treatment Technology Program will make the transition to the Desalination Research Development Program, utilizing the new authority under Public Law 104–298, the Water Desalination Act of 1996.

The principal goal of the program is to lower the cost of desalination through research and development activities. A number of objectives follow from this primary goal. The program is focused on several points:

—Increasing the ability of communities of varying sizes and financial resources to economically treat saline water, and other sub-standard waters, to potable standards or reuse standards, as needed.
—Increasing the ability of the United States desalting industry to compete throughout the world, by fostering partnerships with them to develop new and innovative technologies (patent rights will belong to the non-Federal partners for all non-Federal applications).
—Developing methods to make desalting and reuse more efficient through promotion of dual-use facilities, in which waste energy could be applied to desalting water.
—Developing methods to ensure desalting technologies are environmentally friendly.
—Working with regulators to evaluate concentrate streams and ensure that the regulations are appropriate for the application.
—Finding ways to use by-product streams.
—Maximizing technology transfer to ensure full transfer of knowledge and commercialization of technology.

Reclamation will meet these objectives through a three-way combination: (1) cost-shared contract and cooperative agreements with the private, public and academic sectors; (2) in-house research activities; and (3) research activities co-sponsored by our research partners from other Federal laboratories. Reclamation will build on its findings and developments from its existing Water Treatment Technology Program. A draft Research Program Plan has been prepared for the fiscal year 1998 Desalination Research and Development Program and is presently being peer reviewed by the existing consortium of ten other Federal partners and by technical experts from the desalination and reuse communities to obtain their input into the program authorized under Public Law 104–298.

Question. Last year, Congress passed the Water Desalination Act of 1996, Public Law 104–298, which authorized the Secretary of the Interior to conduct studies re-

garding the desalination of water and water reuse, and other purposes. How does the Department plan to proceed with implementing this program?

Answer. Reclamation will build on its efforts and technical findings from the Water Treatment Technology Program, the predecessor to Public Law 104–298. A draft Research Program Plan has been prepared and is presently being peer reviewed by technical experts from throughout the public, private, and academic sectors.

Question. Will the program be restructured to include the provisions of this legislation?

Answer. Yes, the new draft program plan includes all provisions outlined in Public Law 104–298. These specific provisions would include the following objectives in addition to those mentioned before: (1) evaluating the potential market and use for by-products of desalination processes; (2) investigating the economic prospects of desalination facilities versus other methods to increase the supply of quality water; and (3) investigating the opportunities for dual-purpose desalination/power facilities.

In addition, Public Law 104–298 lists specific cost-sharing guidelines which are different from the non-Federal contribution than those presently used. Under Public Law 104–298, the Federal share is limited to up to 50 percent of total project costs. But a Federal contribution greater than 25 percent is possible only where the project is not financially feasible without the additional Federal funds. The program will be restructured to include these new cost-sharing guidelines.

Question. When will the Secretary make recommendations on desalination demonstration projects as required by the Act?

Answer. The timing of such recommendations is unclear. First, there must be sufficient initial research progress in order to suggest innovative technologies in which to demonstrate.

Question. What is the funding profile for this program through the year 2000?

Answer. The funding available for this program will depend upon future fiscal constraints and upon the likelihood of program success in reducing the costs of desalting technologies.

Question. There are several communities in eastern New Mexico which have expressed initial interest in developing possible pilot or demonstration projects. Will the program allow such small rural communities the opportunity to participate in available funding?

Answer. The program is open to proposals by small and rural communities. The present Water Treatment Technology Program provides significant pilot testing opportunities to rural, small and/or Native American communities on a 50/50 cost share basis. These opportunities have been very popular with these communities, and we expect they will continue. However, demonstration projects will be funded on a competitive basis.

Question. What will the principal criteria and factors in the selection of pilot and demonstration projects?

Answer. The most important criteria will be:

—Does the project test or demonstrate an innovative technology?

—Does the project promote a non-traditional application of a current technology where it is unproven?

—Does the project promote a technology that could be feasibly implemented in the community?

—Will the project establish practical applications and have regional applicability and interest?

—Will its capacity be sized appropriately to demonstrate practicality, but be less than a full-size production plant?

In addition, Reclamation is working to ensure that its desalination program will complement efforts under Title 16 of Public Law 102–575 to demonstrate new water recycling technologies.

SALINITY CONTROL PROGRAM

Question. What are the department's plans in implementing provisions of the Farm Bill which allows non-Federal interests to use the Colorado River Basin Fund to meet the cost-sharing requirement on salinity control projects?

Answer. Reclamation plans to begin cost sharing as soon as we can establish the financial system and controls to make this possible. As the fund's manager, Reclamation is working with the USDA to establish an Interagency Agreement to allow the USDA to bill the Basin Fund for cost sharing in designated salinity control areas in fiscal year 1997. Within Reclamation's Basinwide Program, cost sharing from the Basin Fund will be used to fund the local share (30 percent) of the Ham-

mond Project in New Mexico and the Price-San Rafael Rivers Unit in Utah beginning in fiscal year 1998.

NEW PROGRAMS AND PROJECTS FOR FISCAL YEAR 1998

Question. Could you tell the Committee what new programs, projects, or activities are funded in the fiscal year 1998 budget which were not included in the 1997 budget? Provide for the record a list of these new items showing the amount requested and a brief description of the program.

Answer. The following activities proposed in the fiscal year 1998 budget were not included in the fiscal year 1997 budget:

NEW STARTS

Arsenic Wellhead Treatment Demonstration Program, New Mexico ($914,000 is the total cost, of which $500,000 is for fiscal year 1998 plus $414,000 for fiscal year 1999).—Will develop technologies in the Middle Rio Grande Basin to remove naturally occurring pollutants which could be applied to groundwater supply systems throughout the 17 Western States.

Freeze Thaw Desalination Project, North Dakota ($360,000).—Will evaluate the treatment of brackish waters using new technology which takes advantage of a natural freeze-thaw/evaporation process of water. This involves the economic coupling of freeze crystallization and evaporation, using natural climatic conditions. This technology could resolve high salinity water quality problems in the Devil's Lake and Stump Lake area.

NEW STUDIES

California Water Augmentation Program, California ($200,000).—To optimize benefits from existing State and Federal facilities by improving water management practices and augmenting existing supplies.

Cheyenne Bottoms Wildlife Area Study, Kansas ($101,000).—To identify methods to reduce evaporative losses and conserve water to protect the Bottoms from adverse drought effects and excessive sediment loading. Subdividing a portion of the Bottoms will allow flooding portions of the pool to meet wildlife habitat needs.

Delta Model Development Group, California ($50,000).—To develop a technically defensible model with sufficient spatial and temporal resolution for examining water alternatives and impacts in meeting Bay/Delta ecosystem requirements.

Lugert-Altus Water Resource Management, Oklahoma ($100,000).—The model will evaluate the actual quantity of stream and groundwater available and the amount discharged into the adjacent watersheds to determine the amount of water available for appropriation.

Mammoth Lakes Water Optimization Study, California ($80,000).—Will examine changes to current water management practices and find new uses for what are currently considered "waste" streams, such as treated effluent or geothermal water.

Mesa County Water Conservation Study, Colorado ($90,000).—Analysis of irrigation facilities to identify opportunities for water conservation.

Nebraska Rainwater Basin Assessment, Nebraska ($133,000).—Cooperative effort to assess the Nebraska Rainwater Basin Wetlands and analyze the environmental features and human activities/alterations that impact the wetlands and their watersheds.

Rapid City Wastewater Reuse Study, South Dakota ($75,000).—To determine the feasibility of proceeding to final design and construction of Brennan Reservoir.

Rio Grande Project Drains Water Quality Study, New Mexico; Texas ($95,000).—Initiate sampling and analysis of agricultural drain water return flows.

Rio Grande Riparian Tree Species Consumptive Use Study, New Mexico ($75,000).—Analysis of water consumption of riparian tree species.

Question. Why should funding for these new initiatives be included when there is insufficient funding to maintain optimum schedules of on-going projects and activities?

Answer. We believe these new initiatives are of sufficiently high priority to warrant funding in fiscal year 1998. They are intended to identify ways to address real local and regional problems and to meet current and future water quality, quantity, and environmental needs through enhanced management of existing Federal and non-Federal facilities. These studies and demonstrations will address options to make more efficient use of existing supplies and integration of existing surface/groundwater supplies with minimal structural requirements. Furthermore, they are not expected to result in large future Federal outlays.

UPPER RIO GRANDE WATER OPERATIONS MODEL STUDY

MIDDLE RIO GRANDE PROJECT, NEW MEXICO

Question. The Committee provided an additional $450,000 for the current fiscal year for the Bureau of Reclamation to accelerate the upper Rio Grande water operation model study in order to address current and future drought and other water management issues in New Mexico.

Was the Committee's direction to use $450,000 to accelerate the water operation model study followed? If not, why?

Answer. At the start of the current fiscal year, Reclamation allocated $160,000 for this program to fund initial up-front design work and investments in the Rio Chama test case. The interagency Steering Committee is now completing a mid-year progress evaluation of the program. As a result of this evaluation, the Region is considering transferring additional funds to this program in fiscal year 1997.

Question. Does the fiscal year 1998 request for the Bureau of Reclamation continue the study and activities as contemplated by the Committee action in 1997? If not, why?

Answer. Reclamation has requested $170,000 in its fiscal year 1998 Middle Rio Grande Project O&M budget for the water operations model. This will continue the study and activities contemplated by the Committee.

Question. How much funding is needed in fiscal year 1998 to continue the study effort by the Bureau of Reclamation and the other Federal agencies involved? How long will it take to complete this effort including evaluation of water operation alternatives?

Answer. It is important to differentiate between the "backbone" of the water operations model, and associated/supporting studies. The backbone will provide the basic water operations functions that will codify operating rules and existing data. This will allow for water accounting and unrefined evaluations of water operation alternatives on a broad scale throughout the basin. The associated activities, such as refining hydrologic data that is used by the model, are necessary to refine the accuracy and precision of the model. Similarly, the development of biological data and associated models will permit the broader application of the water operations model. Reclamation is funding the associated activities through other program budgets; the Corps of Engineers, as we understand it, is funding associated activities through its Upper Rio Grande water operations model budget.

A funding level of $170,000 for Reclamation, as represented in the current budget request, would allow Reclamation to continue measured progress on the actual water operations model. At this funding level, we anticipate that an operating water operations model would first be available by the end of fiscal year 2000.

Question. Provide a table for the Record which shows the 1997 funding, the budget request for fiscal year 1998 and the amount (capability) that could be used by each Federal agency to continue activities in fiscal year 1998 along with a brief description of how the additional funds would be used.

Answer. The following table summarizes budgets to support the water operations model backbone:

[Amount in dollars]

Agency	Fiscal year			
	1997	1998 (budget request)	1998 (additional capability)	1998 (total capability)
Reclamation	[1] 160,000	170,000	300,000	470,000
Corps of Engineers	206,000	.....	330,000	330,000
U.S. Geological Survey	.....	.....	200,000	200,000
U.S. Fish and Wildlife	.....	.....	50,000	50,000
Bureau of Indian Affairs	.....	.....	50,000	50,000
International Boundary and Water Commission (US)	.....	.....	20,000	20,000
Totals	366,000	170,000	950,000	1,120,000

[1] $25,000 of this amount thus far transferred to the USGS.

Reclamation estimates that the Federal agencies have the ability to use in fiscal year 1998 an additional $950,000 beyond the amount requested for activities associated with the development of the actual water operations model. If this funding

level were maintained through fiscal year 1999, a preliminary evaluation of broad water management options could be completed by the end of that fiscal year as well.

Funds would be used to support agency staff participation in technical activities to develop the water operations model, as well as interagency coordination and outreach programs. A portion of Reclamation funds would be used to contract model development support to accelerate progress.

The additional capability shown was not included in the President's budget and is not a priority of the Department.

Question. Has one of the 6 Federal agencies involved in this study been designated as the lead agency to coordinate and oversee study work and progress? If not, please explain why? Does funding of the study in a single agency make sense, and if so, which agency is best suited to have overall responsibility from a programmatic and funding stand point?

Answer. Reclamation and the Corps of Engineers are the recognized de facto lead agencies due to their leadership in conceiving and promoting the concept of a basin wide hydrologic model, their more focused interest in the development of the model, and their funding of the program. In this leadership role, for example, Reclamation has transferred some of its funds to the USGS to fund that agency's involvement. Each agency accounts for the expenditures of its funds. However, the six Federal agencies which signed the Memorandum of Understanding collectively make program decisions and monitor progress in the Steering Committee.

While there could be some benefits of having a single lead agency for administrative purposes, Reclamation believes that the way in which it now shares such a role with the Corps of Engineers ultimately is best for the program. Additional cooperative management controls and accountability to further ensure the success of the program are planned.

Question. Provide the Committee with a list of major milestones through completion, along with annual funding profile for each of the agencies participating in the study effort.

Answer: A funding profile beyond fiscal year 1998 is not available. At current funding levels we believe it is reasonable to assume the following major milestones for the program:

Program	*Milestone*
Model test case (Rio Chama)	September 1997.
Develop preliminary full basin model	September 1998.
(Existing) data base development	September 1998.
Preliminary basin water operations evaluation	September 2000.
Model and data base refinement	September 2002.

ARSENIC WELLHEAD TREATMENT DEMONSTRATION

MIDDLE RIO GRANDE PROJECT, NEW MEXICO

Question. The budget request includes $414,000 for the Bureau of Reclamation to undertake a project to demonstrate new technologies for the removal of naturally occurring pollutants from ground water source water supply systems in the vicinity of Albuquerque.

Tell the Committee about this project—what the problems are, and how the Bureau developed this demonstration project, and what involvement local interests have in this effort.

Answer. This project is one of the Reclamation projects to receive "full funding" in fiscal year 1998 pursuant to the Administration's full funding initiative. The request for fiscal year 1998 is for $914,000, (not $414,000), which includes $500,000 for program requirements in fiscal year 1998 and $414,000 for program requirements in fiscal year 1999 as described in Reclamation's fiscal year 1998 Budget Justifications.

Naturally occurring arsenic in Albuquerque Basin Groundwater has caused the City of Albuquerque to abandon the use of two production wells because they fail to meet the existing drinking water standard. Up to 80 percent of the City's current ground water production would not comply with proposed more stringent standards. Conventional arsenic treatment methods are not amenable to wellhead installation because of their physical size and the complexity and the volume of treatment residuals that require further processing before disposal. Arsenic treatment is therefore impractical, with current technologies, for communities that rely on many geographically distributed wells.

Research has been ongoing by the EPA, the University of Houston, and the City of Albuquerque to develop new treatment technologies that might be applied to geographically distributed ground water supply systems in Albuquerque. As a result of this research, the City is now able to test the performance and reliability of new wellhead treatment technologies over a period of several years on a production scale. The site chosen for the project is one of Albuquerque's production wells that is now out of service due to high arsenic levels.

Question. How will the project costs be shared, and does the Bureau have expression of interest of the City of Albuquerque to provide the non-Federal share?

Answer. The City of Albuquerque will fund 75 percent of total project costs and Reclamation will fund 25 percent. The cost sharing agreement is currently being developed.

ANIMAS-LA PLATA PROJECT

Question. It is my understanding that as part of the Romer/Schoettler Process, the Bureau has stated that water from the Animas river is needed to meet water entitlements for the two Ute tribes under the 1986 settlement agreement and 1988 legislation and to meet the water needs of other nearby communities. It is also my understanding that the tribes and other supporters of the ALP project are developing a proposal to store water off the Animas which would be smaller and cheaper than the current configuration.

Ms. Beneke, is the Bureau working with the Tribes to develop such a proposal?

Answer. Because of the uncertainty concerning future San Juan River Basin depletion allowances, the Ute Mountain Ute Tribe, through an Indian Self-Determination Act contract, is analyzing different project configurations in relation to differing possible project depletion allowances. The Bureau of Reclamation is providing technical assistance to the Tribe so it can evaluate potential options that are developed and providing requested information regarding project-sizing issues.

Question. Isn't it the responsibility of the Bureau as a trustee to do so?

Answer. Reclamation recognizes its responsibility for providing technical assistance to all the Indian tribes in the San Juan Basin to address the issue of potential limited depletion allowances and competing water demands.

Question. Would you support an alternative to the current ALP project that satisfies the Utes' claims, preserves existing non-Indian uses in SW Colorado and NW New Mexico, and provides a reliable supply of water to residents of San Juan County, New Mexico?

Answer. I am advised that the Citizens' Coalition and the Project Proponents involved with the Romer/Schoettler Process are currently formulating alternatives. The current notion is that these conceptual ideas, when ready, would be presented to all the parties to the Romer/Schoettler Process for further discussion and evaluation. I would be able to support an alternative if it represented a consensus solution, resolved the Indian water rights claims, and addressed the environmental and economic issues facing the project.

Question. I believe that the failure to store water from the Animas River could have serious consequences to the water supply in NW New Mexico. What implications could this failure have on users of the San Juan/Chama?

Answer. I am hopeful we can achieve a solution that New Mexico can support. Effects to water users associated with the San Juan/Chama Project are unlikely due to the fact that the project is not located nor dependent upon water from the Animas or La Plata Rivers.

Question. Mr. Martinez, at the February American Bar Association Water Law Conference, you indicated that a failure of the ALP project to meet Native American water rights claims would have serious implications. Would you please elaborate?

Answer. For example, it is generally believed that Indian water rights are senior to those of non-Indians in the San Juan River Basin. If the project is not built as presently authorized and configured, it will still be necessary to find a solution for the Colorado Ute tribes that resolves their water rights claims.

Because of difficulties encountered in constructing the Project as presently authorized and configured, including concerns regarding compliance with the applicable laws for such projects, Governor Roy Romer and Lt. Governor Gail Schoettler of Colorado have initiated a Process in which Colorado, New Mexico, the Department of the Interior and the EPA, and both the proponents and opponents of the existing authorized project are participating. The Romer/Schoettler Process is an ongoing effort to find a consensus solution, and thus would avoid potential impacts that could arise from unsettled Indian water rights. We are actively cooperating to help the parties reach a result to which all of them, including the Colorado Ute Tribes, can agree.

SAN JUAN/GALLUP PIPELINE

Question. I have been very active in trying to find a solution to the impediments that are hindering advancement of the Gallup-Navajo pipeline, which is designed to improve water availability in NW New Mexico and the Navajo Nation. I understand the Bureau is studying critical issues of water availability and the environmental impact of the project. Would you give the Committee an update on your progress?

Answer. Since fiscal year 1993 Reclamation has been providing planning and technical assistance to the Project's local sponsors which include the Navajo Nation, City of Gallup, and Northwest New Mexico Council of Governments. We have completed a number of technical appraisal studies looking at the potential environmental impacts of the project as well as engineering and economic aspects. At this point no future water for the Gallup-Navajo Project is included in the San Juan River Recovery Implementation Plan baseline. Until endangered species issues are resolved, the future availability of water from the San Juan will remain uncertain.

In addition, the currently conceived project would cost an estimated $150 million to build and about $5 million annually to operate and maintain. Because the project would cover a large, sparsely populated area it is not expected to be economical.

There are also some local political obstacles to be overcome. The Navajo Nation and the City of Gallup have had difficulty developing the cooperation and support between the two governments that would be needed if Gallup-Navajo Project is to become a reality.

QUESTIONS SUBMITTED BY SENATOR BURNS

FORT PECK RURAL WATER SUPPLY SYSTEM

Question. Mr. Martinez, you have a signed letter in which you stated "we must first have specific budget authority from the Congress in order to allocate construction funds for the Fort Peck Rural Water Supply System." I would assume that a bill passed by Congress and signed by the President would give you such budget authority. Am I right or wrong?

Answer. The sentence to which you refer was written in response to a request that Reclamation allocate $292,982 from its fiscal year 1997 budget for project start-up activities. Under current agreements between Reclamation and the Appropriations Committees, work on authorized but previously unfunded projects cannot be initiated through reprogramming. If funds were to be provided in a future appropriations act for the Fort Peck County Rural Water System, we would have authority to obligate funds for construction.

Section 4 of Public Law 104–300 authorized the Fort Peck County Rural Water Supply System for construction. However, although Congress authorized the project, we do not support funding for it.

MONTANA PROJECTS

Question. I am pleased to see that you have included a number of Montana specific projects in your budget request for fiscal year 1998. However, I wonder if, since many of these projects have a regional interest, as we regionalize these type of approaches if it might be possible to look toward placing additional money into these projects?

Answer. We would be pleased to work with you and your staff to identify activities in Montana where additional funds could be utilized to accomplish important water resource management objectives where there is a significant federal interest.

QUESTIONS SUBMITTED BY SENATOR BENNETT

GRAND CANYON PROTECTION ACT

Question. In last year's Energy and Water appropriations bill, this Committee expressed concern about the scope of the long-term monitoring and research program authorized in the Grand Canyon Protection Act. To ensure that the program was not expanded beyond the parameters intended by Congress, we expressly directed the Secretary of Interior to include in the annual budget justification for the Bureau of Reclamation, a detailed work program and specific information regarding staffing, overhead, tasks and projections for out-year expenditures. We directed that this information be submitted to this Committee, to the Senate Energy and Natural Resources Committee, and to the House Appropriations and Resources Committee.

It is my understanding that the work program has been prepared in draft and circulated to the Transition Working Group. I further understand that the work program as drafted, contains tasks that may be beyond the authorized scope of work, such as an analysis of "intrinsic" or "existence" values. Please explain that if this is the case, what criteria is used to determine intrinsic and/or existence values. What relevance are these values to what is happening to the riverine environment caused by changes in operations affected by the EIS?

To the best of my knowledge, this Committee has not yet received the work program for fiscal year 1998. Please inform me of the status of this report. When will it be submitted by the Department?

Answer. In response to language included in the Senate report accompanying the Energy and Water Development Appropriations bill for fiscal year 1997, Reclamation included in the Budget Justifications for fiscal year 1998 on page 401–403 under the heading "Grand Canyon Monitoring and Research Center" information on the fiscal year 1998 program and out-year projections.

The Five-Year Strategic Plan (1998–2003) and the fiscal year 1998 Annual Plan for future monitoring and research programs have been completed in draft form by the Grand Canyon Monitoring and Research Center and reviewed by the Transition Work Group. Both documents are scheduled to be finalized in July 1997.

The Fiscal Year 1998 Annual Plan does not contain any research or monitoring on "intrinsic" or "existence" values. The only reference to these values was the use of the "existence" value in a cost-benefit analysis proposed in an early draft for year 4 (2002) of the Strategic Plan. At the request of the stakeholders, the proposed cost-benefit analysis model has been dropped from the final draft of the Five-Year Strategic Plan.

PRIVATIZATION OF DUTCH JOHN

Question. As you know, legislation will soon be introduced to provide for the privatization of federal property in the Dutch John community in Daggett County, Utah. The Bureau listed a number of concerns with the legislation as introduced in the 104th Congress. Please provide for me an analysis of those concerns, and what steps might be taken to alleviate those concerns through either changes to legislative language or other methods. Please provide to me an analysis of the estimated costs to the Bureau over the next fifteen years should the Bureau continue to administer the properties at Dutch John. How do these costs compare to possible savings? Please explain the possible benefits of privatization to the Bureau. Is there precedent to privatizing other "dam towns" and if so, please provide a brief overview of the methods that were taken to implement these privatization efforts. What is the difference between those efforts and the one suggested by the Dutch John legislation?

Answer. In a hearing before the Subcommittee on National Parks, Forests and Lands on July 25, 1996, Reclamation expressed concern with several provisions of H.R. 3486, and noted objections to the NEPA waiver and to transition payments. However, with the noted objections, Reclamation supported the overall effort to transfer the lands and facilities of Dutch John to Daggett County, Utah.

The net present value to Reclamation to continue to administer the Dutch John community for fifteen years based on an annual expense of $900,000 with an inflation rate of 3 percent, and using an interest rate of 8 percent is $8.6 million. The net present value for fifteen years, if the community is privatized, based on $300,000 to maintain the facilities retained by Reclamation using an inflation rate of 3 percent and an interest rate of 8 percent is $2.9 million. The difference between the net present values is a savings of $5.7 million to Reclamation if the community is privatized without additional costs to the government.

The benefits to Reclamation with privatization are: (1) Reduced cost of operation and maintenance of Reclamation facilities. (2) Reclamation would no longer be responsible for the community infrastructure and utilities.

There are precedents to privatizing other "dam towns" from the following legislation: Coulee Dam Community Act of 1957, Public Law 85–240, 71 Stat.524. Boulder City Act of 1958, Public Law 85–900, 72 Stat. 1726. Page, Arizona Community Act of 1974, Public Law 93–493, 88 Stat. 1486.

Some differences between the above acts and that suggested by the Dutch John legislation are:

1. In the enacted acts, Reclamation owned the land and the improvements being transferred. In the case of Dutch John the land is located on National Forest Service lands.

2. The enacted acts did not provide an annual grant to the community. However, the acts provided one-time payments for such things as incorporation, improvements to various facilities, or other assistance.

3. In the enacted acts, funds from the sale of property were used to defray expenses in the process of disposal, while under the Dutch John legislation proposed in the last Congress, funds received from the sale of property would go to Daggett County.

We understand new legislation will be introduced soon and will be happy to provide further comments at that time.

QUESTIONS SUBMITTED BY SENATOR REID

REGIONAL ADMINISTRATIVE COSTS

Question. What percentage of the regional budgets, such as the Mid-Pacific or the Lower Colorado Regions are administrative in nature? (The management of the office as opposed to the work in the field).

Answer. The information is provided in the following table:

BUREAU OF RECLAMATION REGIONAL ADMINISTRATIVE COSTS

[Dollars in thousands]

Region	Fiscal year	Total obligations	Administrative	Percent
Mid Pacific	1994	$139,819	$24,979	17.9
	1995	163,057	17,573	10.8
	1996	205,313	18,392	9.0
	1997	253,877	21,867	8.6
	1998	345,630	22,400	6.5
Lower Colorado	1994	361,083	32,645	8.28
	1995	374,085	30,785	7.60
	1996	308,154	27,403	8.16
	1997	405,752	23,639	5.51
	1998	376,351	23,324	5.84
Great Plains	1994	120,623	22,159	18.0
	1995	119,919	19,510	16.0
	1996	148,193	19,454	13.0
	1997	158,964	19,655	12.0
	1998	146,018	20,438	13.0
Pacific Northwest	1994	120,114	26,465	22.0
	1995	127,734	27,438	21.5
	1996	128,735	24,512	19.0
	1997	140,323	24,560	17.5
	1998	133,897	25,124	18.8
Upper Colorado	1994	193,083	27,972	14.4
	1995	158,818	27,708	17.45
	1996	160,091	27,454	17.15
	1997	185,672	28,099	15.13
	1998	162,620	27,087	16.66

Question. What has been the rate of increase in administrative funding over the past few years?

Answer: The percentage of administrative funding over the past few years has decreased in four regions and increased in one, as depicted in the following table:

[Percentage]

Region	Decreased	Increased
Mid Pacific	64	
Lower Colorado	29	
Great Plains	27	
Pacific Northwest	15	

[Percentage]

Region	Decreased	Increased
Upper Colorado		15

TRUCKEE-CARSON

Question. What is the status of the Bureau of Reclamation's implementation of Public Law 101–618, The Truckee Carson Negotiated Water Settlement? Why is it taking so long?

Answer. The centerpiece of Public Law 101–618 is the development of an operating agreement for the Truckee River based in large measure on the Preliminary Settlement Agreement between the Pyramid Lake Paiute Tribe and the Sierra Pacific Power Company. This agreement has taken on the name of the Truckee River Operating Agreement, or TROA. It has taken a long time to get TROA developed because of the number of interests involved and the complexity of the issues. For instance, extensive analysis had to be conducted to develop a good understanding of the impact of TROA on recreation pools and instream flows in California so that California would be in position to make recommendations on improving them and so that other parties could understand the impacts of such improvements on their interests and water rights. Further analysis also had to be conducted to factor in the Truckee River Water Quality Settlement and other types of credit water. These efforts go well beyond the minimum Preliminary Settlement Agreement requirements in meeting the needs of the negotiating parties as well as improving conditions on the Truckee River and at Pyramid Lake. They were also necessary to bring all five of the mandatory signatory parties to agreement on TROA, as well as to better assure inclusion of other parties such as the cities of Reno and Sparks, the town of Fernley, and Washoe County.

At this point, the negotiators of TROA are close to having a draft agreement with sufficient specificity and support to form the basis of the proposed action required for the Draft Environmental Impact Statement. Depending on the results of negotiations scheduled to be completed in early May, the negotiators hope to have the draft TROA completed and published with a DEIS in mid-June. On that basis, TROA should be ready early next year. Reclamation has participated in the negotiations, has done a substantial amount of analytic work to assist the negotiators, and, with the Fish and Wildlife Service and State of California, is co-lead on the EIS.

In addition to the negotiation of the TROA, Reclamation has been involved in the implementation of the various other aspects of Public Law 101–618, either directly or through funding arrangements with other agencies. These activities include, but are not limited to, the publication of the Newlands Project Efficiency Study dated April 1994, the Refuge Water Acquisition Program, the transfer of Carson Lake Pasture to the State of Nevada, the closure of the TJ Drain, and the implementation of the Newlands Project Operating Criteria and Procedures, or OCAP. A clear indication of Reclamation's continued commitment to the timely implementation of Public Law 101–618 is that approximately 70 percent of Reclamation's Newlands and Washoe Projects fiscal year 1998 appropriations request is for activities directly associated with implementation of Public Law 101–168.

Question. What is the Bureau's fiduciary trust relationship to the Pyramid Lake Tribe in relation to the Settlement?

Answer. In implementing the settlement, the Department (including all of its Bureaus) is working to protect and enhance the Tribal trust resources to the fullest extent possible. Reclamation's principal goal has been to help the Pyramid Lake Tribe, through the TROA, to secure greater control over water used for spawning flows in the springtime and for instream flows and water quality in the Lower Truckee River in the summer, which is the traditional low-flow period on the river.

Reclamation is also contributing to protection of the Tribe's trust resources by improving fish passage facilities at Marble Bluff Dam on the Pyramid Lake Reservation. The Dam is a major bottleneck for passage of the endangered cui-ui fish and for Lahontan cutthroat trout. Reclamation, working with the Tribe, has designed improvements and awarded a contract for their implementation. Construction work is scheduled to be started in July of this year, right after completion of cui-ui spawning, and be completed before next year's spawning cycle. Additionally, Reclamation assists the Department in meeting its trust responsibilities by managing, in consultation with the Tribe and the Fish and Wildlife Service, Stampede Reservoir for purposes of improving spawning flows on the reservation and by administering the Newlands Project Operating Procedures and Criteria so that valid water rights are met while minimizing the use of Truckee River water.

Question. Would you say the Bureau has met its obligations?

Answer. While much remains to be done to discharge Reclamation's obligations under the Settlement Act successfully, the Bureau is making good progress toward achieving that objective.

Question. Would you please report back to the committee with an assessment of the Bureau's relationship with the tribe and its goals and objectives in carrying out its responsibilities.

Answer. Reclamation is working with both the Pyramid Lake Tribe and Fallon Paiute Shoshone Tribe. Reclamation is committed to establishing appropriate government-to-government relationships with the Tribes to assure timely and meaningful consultation on actions that may have an impact on tribal trust assets. In fiscal year 1998, Reclamation will continue to pursue the Secretary's trust responsibilities through the development of TROA and its associated implementing agreements, the administration of OCAP, the improvement of Newlands Project efficiency, completion of the Marble Bluff Fish Facility modification, and the pursuit of various cooperative agreements to assist the tribes in developing and managing tribal resources.

In addition, Reclamation has worked with both the Pyramid Lake Tribe and Fallon Indian Tribe, in order to provide financial and technical assistance in mapping project and other facilities on the Reservations. Reclamation is providing funding for Fallon tribal members to attend short courses on water measurement and modernization, in order to assist them in efficiently operating their irrigation system and to enable them ultimately to become an independent irrigation district. Reclamation is also pursuing similar opportunities with the Pyramid Lake Tribe through Reclamation's Water Conservation Technical Field Services Program. A Native American Affairs Liaison has been established in Reclamation's local field office to assist in identifying opportunities for the Tribes to develop their water and other natural resources. Local Reclamation staff routinely attend tribal council meetings, to better understand governmental procedures and tribal concerns. These actions have been pursued in the spirit of enhancing the relationship with the Tribes and promoting their active participation in decisions affecting their resources.

CALFED BAY-DELTA PROJECT

Question. I know that the subject of the CALFED Bay-Delta Program has probably been raised. I would like to hear about the coordination between the agencies involved in this project, particularly in relation to the efficient use of federal dollars.

Answer. Through the creation of a Restoration Coordination Program and the Ecosystem Roundtable, the CALFED Bay-Delta Program has established a formal means for coordinating new and existing ecosystem funding to achieve efficiencies and greater effectiveness. CALFED technical staff have identified many Central Valley Project Improvement Act, or CVPIA, restoration activities that are closely aligned with those of CALFED. They have been working with CVPIA staff in Reclamation and the Fish and Wildlife Service on developing joint priorities and procedures for the joint solicitation and review of projects to address priorities. CALFED staff are also working with other related programs such as the Four Pumps Program administered by California Department of Water Resources and California Department of Fish and Game, or CDFG, and the Tracy Fish Agreement program administered by Reclamation and CDFG. This improved coordination should maximize the effectiveness of available funding and will help to "jump-start" ecosystem recovery.

QUESTION SUBMITTED BY SENATOR MURRAY

PESTICIDE APPLICATIONS

Question. I have recently received an excellent response from the Bureau indicating it intends to undertake a nationwide review of its public notification procedures for pesticide applications. I commend the Bureau for tackling this difficult, but critical, public health and safety question.

Can you provide the committee additional details on how and when that study will proceed?

Answer. Reclamation has taken steps to initiate a review process concerning notification of the public prior to aerial pesticide applications on Reclamation-managed lands in the 17 western states. Reclamation addressed this issue at the Pest Management Coordinators Conference held May 7, 8, and 9, 1997. The agenda included a discussion of Reclamation's policies and directives as it relates to public notification before the application of aerial pesticides. The discussion focused on liability, health, safety and contractual issues along with current State and Federal label re-

quirements for public notification and reentry intervals. Reclamation officials will be briefed on the concerns and ramifications of current and potential notification requirements and policies discussed during this meeting to determine a course of action.

If changes in current policy appear warranted, Reclamation will circulate draft proposals to the Regions and the field for comment by August 1997. Final draft proposals should be developed and sent to the field for final review by late September of 1997. Final proposed policy and directives should be available for the Commissioner's action in late October of 1997.

QUESTIONS SUBMITTED BY SENATOR DORGAN

GARRISON DIVERSION PROJECT, RED RIVER VALLEY

Question. I would like to raise several questions about the Garrison Diversion Project. What is the status of studies to determine the water supply needs of the Red River Valley?

Answer. The Phase I portion of the study provides an assessment of future water needs including projections of the magnitude and frequency of water shortages in the study area located primarily in the North Dakota portion of the Red River Valley. The Phase I report will be distributed to the public for review and comment the last week of May 1997. The Phase I Needs Assessment Study identifies at an appraisal level the municipalities that will likely experience water shortages during episodes of low flow or drought. The study also examines water quality concerns of existing water supplies and characterizes the water supply situation in the rural sector.

The next step in the needs assessment is an alternative formulation study (Phase II). The Phase II effort which began in March 1997, will present an array of alternatives with economic, environmental, and operational tradeoffs highlighted. The Phase II alternative formulation study will also be performed at an appraisal level. A draft Phase II report will be available in March 1998.

SOUTHWEST PIPELINE AND NORTH VALLEY-WALHALLA WATER PROJECT

Question. The fiscal year 1998 funding request for the Southwest Pipeline is a reduction from fiscal year 1997. This will hamper plans for Garrison Diversion to deliver a reliable supply of quality water to North Dakota. I am particularly concerned that not enough funding has been requested to complete the Southwest Pipeline to provide drinking water to communities that do not presently meet safe drinking water standards. Communities failing to meet safe drinking water standards would suffer health consequences and have to pay substantial fines. Can you identify some of the planned components of the project that will not be funded at the requested level?

Answer. Reclamation's funding request for the Garrison MR&I grant program is not tied to specific projects. The grant program is administered cooperatively by the Garrison Diversion Conservancy District and the North Dakota State Water Commission. Based on their ranking of priorities, we anticipate that the Southwest Pipeline may receive some Federal funding in fiscal year 1998 at the level requested in the budget.

Funding for water service to the cities of Neche and Hebron and their surrounding rural residents would be delayed until fiscal year 1999.

OAKES TEST AREA

Question. One key element of the Garrison Diversion Project has been the development of environmentally responsible irrigation systems. North Dakota Test Area's arid climate and soil types make research into this area of great importance. The Oakes Test Area has been an essential component in the research. We have requested an additional $500,000 for the Oakes Test Area to continue this research. Given the administration's proposal that the state take over responsibility for the test area, what are the administration's plan for development of environmentally sensitive and fiscally responsible irrigation systems?

Answer. Initial water deliveries through the Oakes Test Area distribution system were made in 1988. In 1990, in response to discussions with the delegation, the Secretary of the Interior established a task force to evaluate future funding support for the Garrison Diversion Unit specific to the Oakes Test Area. The task group recommended that studies be continued through 1995 to complete the eight-year re-

search program. The original research objectives and purposes of the Oakes Test Area have been met to the extent possible, given the changes in the Garrison Diversion Unit since the Oakes Test Area research conception. Therefore, in 1995, Reclamation decided to propose that Congress transfer title of the Oakes Test Area or abandon the facilities.

Discussions regarding title transfer were ongoing. In 1996, Reclamation executed a water service contract with the Dickey-Sargent Irrigation District for the delivery of water in the Oakes Test Area. Funding of research activities, however, was discontinued. Discussions regarding transfer of title are continuing between Reclamation and the Garrison Diversion Conservancy District. However, progress has been disappointing and at least two substantial obstacles have been encountered. There has been inability or unwillingness by the local landowners (i.e., Dickey-Sargent Irrigation District) to assume the full costs of operation and maintenance of the system. The Garrison Conservancy District advanced a proposal suggesting that the United States bear future costs by establishment of an $8.5 million operating fund. This proposal is contrary to Reclamation's title transfer policy and to a basic requirement of Reclamation law that O&M of facilities not be subsidized.

No Reclamation, non-Indian irrigation facilities are under development in North Dakota at this time. In February 1990, The Department of the Interior Office of Inspector General released the 1990 Audit Report on Garrison Diversion Unit Cost Allocations. The report concluded that "the operating costs assigned to irrigators will exceed their ability to pay because the project as reformulated does not appear to be financially feasible." The inability to pay O&M costs, at a minimum, prohibits execution of repayment contracts, and the 1986 Garrison Diversion Unit Reformulation Act prohibits the obligation of funds to construct non-Indian irrigation facilities until a contract(s) providing for payment of costs allocated to irrigation has been properly executed. The previously mentioned Garrison Diversion Unit Task Group Report recommended no further support for Federal funding of non-Indian irrigation facilities.

Reclamation continues to work on studies related to the Turtle Lake Irrigation and Wildlife Development Area, as directed by the North Dakota Water Management Collaborative Process. In 1992, Reclamation in cooperation with Federal, State, and local organizations, prepared a conceptual plan for the development of the Turtle Lake area. The goal of that study was to develop a plan which placed equal emphasis on irrigated agriculture, wildlife, and recreation. Reclamation is currently completing an analysis of economic benefits associated with the Turtle Lake area and is working with the Turtle Lake Irrigation District to identify a small area for demonstrating the viability of the concept.

INDIAN MR&I

Question. Recognizing the need for quality water on reservations, Indian MR&I was added to the Garrison Reformulation Act of 1986. The Reformulation Act authorized irrigation of 60,000 acres and $20.5 million for design and construction of MR&I projects on the Fort Berthold, Standing Rock, and Fort Totten reservations. The needs of the tribes are tremendous. What is the administration doing to ensure that the water needs of the tribes are met?

Answer. The Reformulation Act authorized $20.5 million for the design and construction of Phase I MR&I facilities on the Standing Rock, Fort Berthold, and Fort Totten Indian Reservations. This ceiling was later amended in 1992 to allow for cost indexing and was subsequently raised to $24.3 million. These funds were allocated among the three Tribes to meet the most immediate domestic water needs and to provide service to as many residents on the reservations as possible. Each of the three Tribes, through Public Law 638 Indian Self Determination contracts with Reclamation, completed facilities under the Phase I funding ceiling. The $24.3 million ceiling has been reached. However, some facilities originally identified to be constructed on the Fort Berthold and Fort Totten Reservations under Phase I were not able to be completed within the ceiling.

At the time the Reformulation Act was passed, Congress recognized that the original appropriation ceiling was not adequate to meet all the reservation-wide needs of the three reservations and that additional spending authority may be needed. The Secretary of the Interior was directed to keep Congress advised of this situation and to return to Congress if additional authorization for these water systems was needed. In 1994, Reclamation began working with the Tribes to conduct Needs Assessments and Feasibility Studies of MR&I facilities that would be constructed under Phase II to meet the remaining reservation-wide needs. These studies were completed in March 1997. At the request of the Tribes, and based on the findings of the Phase II Needs Assessment and Feasibility Studies, Reclamation is participating

in discussions regarding amendments to the 1986 Reformulation Act to provide additional authorization of appropriations for construction on the three reservations.

Question. Currently there is an outstanding need of $1 million on the Fort Totten reservation to finish phase I of their MR&I proposal. What are the administrations plans to ensure the Phase I moves forward as planned?

Answer. The remaining MR&I facilities necessary to meet the reservation-wide domestic water needs, that were not completed within the Phase I appropriation ceiling, have been included in the findings of the Needs Assessment and Feasibilities studies. Since the Phase I appropriation ceiling was reached in fiscal year 1997, Reclamation's fiscal year 1998 budget request did not include funds for the Garrison Diversion Unit Indian MR&I program. However, there are several Phase I facilities that are still under construction that may be completed by the Tribes on their own. These facilities include the Crow Hill pipeline and the Casino pipeline on the Fort Totten Reservation, and the Four Bears and Twin Buttes Treatment Plants on the Fort Berthold Reservation.

Question. What additional funds need to be appropriated to meet the long-term needs for Indian MR&I?

Answer. The total additional funding need identified by the Needs Assessment and Feasibility studies for the three reservations is $220 million.

Question. Follow Up: How long would it take to complete authorized Indian MR&I with that level of funding?

Answer. The Tribes consultants have established preliminary construction schedules to complete Phase II construction over a 10 year period. This construction schedule may change as the Tribes' consultants complete the Final Engineering Reports.

REVERSE OSMOSIS

Question. Please provide the committee with a report that fully documents all of the Bureau's current and past reverse osmosis activities, including the nature of those activities, the outcomes, and all of the associated costs.

Answer. Reclamation invested in research in addition to the design and construction of the Yuma Desalting Production Plant, from 1975 through 1982. This facility utilizes the reverse osmosis technology, which was an innovative technology during facility design. Therefore, considerable investment was made in the research testing of this technology prior to the design and construction of that facility. The actual investment in that testing is estimated to be $2.4 million in 1997 dollars. This early testing of reverse osmosis by the Federal Government, along with efforts in the private sector, has had a significant impact. Reverse osmosis is now a proven and popular technology for desalting brackish water in many locations, as is evident by its use in roughly 200 communities nationwide (primarily in coastal areas of the United States), and in thousands of brackish water and sea water plants world-wide. However, the technology is still unaffordable to most people.

The present research program in support of water treatment technologies was created in fiscal year 1992. It includes desalination, and is called the Water Treatment Technology Program. Since that date, the appropriations specifically dealing with reverse osmosis technology have amounted to approximately $2,350,000. By 1992, reverse osmosis was a proven technology, so the projects have been primarily directed at improving the technology, and making the technology more cost-effective. Some of the project outcomes can be found in the following reports:

"The Desalting and Water Treatment Membrane Manual", USBR WTTP Report # 1

"Vari-RO Low Energy Desalting for the San Diego Region", USBR WTTP Report # 4

"Zeta Potential of Reverse Osmosis Membranes", USBR WTTP Report # 10

"Eastern Municipal Water District RO Treatment/Saline Vegetated Wetlands Study", USBR WTTP Report # 16

"Reverse Osmosis Membranes Raman and FTIR Molecular Spectroscopic Measurements", USBR WTTP Report # 20

"Using Raman Microprobe Spectoscopy to Detect Chemical Changes Accompanying the Degradation of Cellulose Acetate Reverse Osmosis Membranes", USBR WTTP Report # 21.

FREEZE-THAW DEMONSTRATION

Question. What is critically needed at this point in a larger-scale field demonstration of the Freeze-thaw technology—at least 100,000 gallons a day—to gain approval of the process by federal regulatory agencies and to evaluate its technical and eco-

nomic potential as a long-term source of water for industrial, agricultural, and domestic use?

Answer. Reclamation is currently working with the University of North Dakota to assist with the planning associated with construction of a project of this size. Since a new field site has been identified, the original project plan will need to be modified. Additionally, before proceeding with the construction, the contractor will need to acquire appropriate approvals and permits to ensure compliance with NEPA requirements and various State and local regulations.

DEPARTMENT OF DEFENSE—CIVIL

DEPARTMENT OF THE ARMY

CORPS OF ENGINEERS—CIVIL

STATEMENT OF H. MARTIN LANCASTER, ASSISTANT SECRETARY OF THE ARMY FOR CIVIL WORKS

ACCOMPANIED BY:

LT. GEN. JOE N. BALLARD, CHIEF, U.S. ARMY CORPS OF ENGINEERS

MAJ. GEN. RUSSELL L. FUHRMAN, DIRECTOR OF CIVIL WORKS, U.S. ARMY CORPS OF ENGINEERS

OPENING STATEMENT

Senator DOMENICI. Next, we have the Corps, Assistant Secretary Martin Lancaster, General Ballard, and General Fuhrman, Director of Civil Works. Let me first say that my ranking member, Senator Reid, could not be here for the reasons he has stated, but he has a series of questions that I will submit in his behalf. I would appreciate your answering those. I do not think I am going to comment on the Corps. We have had an opportunity to talk with you individually, and we are short on time, so why do we not proceed.

Mr. Secretary.

Mr. LANCASTER. Thank you, Mr. Chairman, and members of the subcommittee. We will be very brief in recognition of the time constraints this morning. I do have with me a new Corps of Engineers team whom you have met individually, but this is the first time for Lt. Gen. Joe Ballard, the new Chief of Engineers, to testify, and the new Director of Civil Works, Maj. Gen. Russ Fuhrman, and Fred Caver, the Chief of Programs Management Division.

On February 6, the President submitted his budget. We are very pleased that it provides for a steady level of funding for the Corps of Engineers for this year and for the out-years. This is good news for the Corps which enables us to more accurately predict funding availability and better plan for the future.

FULL FUNDING OF NEW WATER PROJECTS

The 1998 budget does propose a transition to full upfront funding of all civil works projects with two new proposals. The first proposal is to up front full fund all new starts, and, for those projects which will be completed before the year 2002, to do advance appropriations so that the funds are available at the time needed for those projects.

These proposals, full up-front funding of new starts and full funding through advance appropriations for projects nearing completion, will allow construction to proceed on a predictable and effi-

cient schedule, resulting in savings to both the non-Federal sponsors and to the Federal Government.

FISCAL YEAR 1997 EMERGENCY FLOOD SUPPLEMENTAL

Mr. Chairman, in light of the situation in the upper Midwest, and before I begin my detailed 1998 appropriations testimony, I do think it is appropriate for me to very briefly talk about the supplemental requests which are pending before the Congress.

On March 19 the President transmitted to Congress a request for emergency supplemental appropriations for 1997. This request included $321.2 million for the Civil Works Program. The President's request for the Civil Works Program was subsequently updated to $432 million, due to estimates of costs related to recent floods that are still plaguing parts of the country.

Of this amount, $232 million would fund repairs to eligible non-federally maintained levees and other flood and storm damage reduction facilities, through the FCCE account, in States affected by floods. This amount would also fully fund up front the design and construction of the emergency outlet works at Devils Lake, ND.

In addition, the President's updated request would provide $75 million for contingencies, to become available upon request of the President, to respond to flooding from spring snow melt and rainfall, which has already occurred in the Ohio River and lower Mississippi River basins, and of which more can be anticipated in the upper Midwest. The President's March 19 request included $39 million, which subsequently has been updated to $112 million, to finance repairs to the Corps' projects damaged in the late 1996 and early 1997 timeframe, as well as to restore the gulf coast navigation channels damaged by tropical storms. The updated request also would provide $13 million for the flood control, Mississippi River and tributaries account.

To finance immediate needs until Congress acts on the President's emergency supplemental appropriations request, we have reprogrammed funds previously scheduled for 1997 through the fourth quarter of this year. Unfortunately, we have run out of those opportunities, and I am submitting today a letter to the Congress notifying you that I am exercising my emergency authority to transfer 1997 appropriations from other civil works accounts to ensure a prompt response to these emergency situations.

FISCAL YEAR 1998 BUDGET REQUEST

Now back to our 1998 budget request. This request would fund a program that balances a number of high priority interests and objectives: Investments in water resources infrastructure development are balanced with investments in watershed and other environmental restoration; continued funding to complete ongoing projects and studies is balanced with investment in new high priority infrastructure and environmental projects; continued maintenance and rehabilitation of existing projects is balanced with construction of new water resources development projects to serve society's current and future needs.

The 1998 budget continues our historical role as a problem solver for the Nation. It includes $380 million to fully fund the Federal share of the proposed new investments, including $15 million to

fully fund an unspecified number of new starts in the Continuing Authorities Program.

Moreover, in the planning targets for the Civil Works Program for fiscal years 1999 through 2002, the amount of $200 million annually is set aside to fully fund the Federal share of new starts.

The 1998 budget provides full upfront funding for the following new investments: 10 new surveys, 7 regular construction new starts, 2 major rehabilitation new starts, 2 resumptions of previously started construction, and 1 dam safety assurance new start.

The 1998 budget request proposes funding for several provisions of WRDA 1996, including two new starts, the American River flood damage reduction project and the Everglades and south Florida ecosystem restoration project, as well as $2 million for section 206, aquatic ecosystem restoration, a new program in WRDA 1996.

Overall the budget includes $120 million for restoration of the Everglades and south Florida ecosystem, and we hope that the funds will be accelerated to initiate important, critical restoration projects of that authorization.

COLUMBIA RIVER FISH MITIGATION, OR AND WA

The 1998 budget requests $164.3 million for Corps activities relating to salmon species indigenous to the Columbia River basin, including $127 million for the fish mitigation project.

REPROGRAMMING OF AVAILABLE RESOURCES

Throughout the year, the Army advises the appropriations subcommittees of plans to reprogram funds among projects to more efficiently use available funding. In the current funding constrained environment, we need to give priority in reprogramming to payments owed to current contractors. We may be limited somewhat in this regard, and the Corps may not have the ability to take advantage of other opportunities to expedite work, or in some extreme cases to even maintain announced schedules.

The Corps' ability to reprogram funds is more critical than ever when funding is constrained and when unexpected expenditures occur, as we have seen so often this year. Your continued support for the Corps' current reprogramming authority is essential to maintain this management flexibility.

In conclusion, I would emphasize my commitment to work with this subcommittee, others in Congress, the broader array of interests within the administration, and the non-Federal partners of civil works projects to develop a new consensus on priorities for our program. This is necessary to ensure that the Army Corps of Engineers continues to serve the vital interests of the Nation by providing efficient, priority investments in public infrastructure and environmental restoration. Moreover, it must be achieved in a way that supports and contributes to the President's commitment to balance the Federal budget.

Thank you, Mr. Chairman, and members of the subcommittee. We would appreciate the full text of my statement be included in the record at this point.

[The statement follows:]

PREPARED STATEMENT OF H. MARTIN LANCASTER

INTRODUCTION

Mr. Chairman and Members of the Subcommittee: Thank you for the opportunity to testify today on the President's fiscal year 1998 budget for the Civil Works program of the Army Corps of Engineers. Accompanying me are Lieutenant General Joe N. Ballard, the Chief of Engineers; Major General Russell L. Fuhrman, the Director of Civil Works; and Mr. Thomas F. (Fred) Caver, the Chief of the Civil Works Programs Management Division.

On February 6th, the President transmitted to Congress his budget for fiscal year 1998, along with planning targets for the out-years. This five-year budget plan was developed with the objective of balancing the Federal budget by fiscal year 2002. Like last year, the President's plan for balancing the budget shows that the funds available for domestic discretionary spending must continue to decline. Notwithstanding this, the President's budget supports a relatively steady funding level for the Civil Works program. This is good news, which will enable the Army Corps of Engineers to more accurately predict funding availability and better plan for the future.

My statement will cover the following subjects: An overview of the fiscal year 1998 Civil Works budget; The Government-wide fixed assets initiative; Balance among high priority interests and objectives; Proposed new investments and continuing program highlights; and Efficient and effective delivery of Government services.

OVERVIEW OF THE ARMY CIVIL WORKS BUDGET

Fiscal Year 1998 Civil Works Budget

The President's fiscal year 1998 budget includes $3.7 billion in new discretionary Energy and Water Development appropriations for the Army Civil Works program. This amount exceeds the fiscal year 1997 appropriations by about $180 million. Because of proposed changes in financing procedures for new starts, the amount to be spent during fiscal year 1998 is approximately $280 million less than the fiscal year 1997 level. Also, in order to offset increases necessary in other, priority programs of the President, the Administration proposes to cancel $50 million of fiscal year 1997 appropriation in the Construction, General, account. This would reduce outlays by an estimated $30 million in fiscal year 1997 and $20 million in fiscal year 1998.

In addition to the discretionary appropriations, the fiscal year 1998 program reflects the transfer of $44 million from the Coastal Wetlands Restoration Trust Fund, $13 million in mandatory permanent appropriations, and $123 million in non-Federal cash contributions from project cost sharing sponsors, through the Rivers and Harbors Contributed Funds account. Over 20 percent of the overall fiscal year 1998 Civil Works program would be derived from user fees or non-Federal contributions.

The new appropriations request is distributed as follows: $150 million for General Investigations; $1.39 billion for Construction, General; $1.62 billion for Operation and Maintenance, General; $112 million for the Regulatory Program; $266 million for Flood Control, Mississippi River and Tributaries; and $162 million for other accounts. Table A, attached to this statement, shows the Civil Works budget by account and source of funding, including anticipated non-Federal contributions.

Emergency Supplemental Appropriations Request

The Corps of Engineers has been almost continuously engaged in fighting the severe floods experienced in recent months in California and Pacific Northwest states, in the Ohio River and Lower Mississippi River basins and, most recently, in the Missouri River and Red River basins in the Dakotas and Minnesota. The Corps also continues working closely with other Federal and state agencies in the flood recovery efforts. The Corps currently is financing its emergency operations out of carryover funding from prior emergency supplemental appropriations and through reprogramming funds from other Federal projects in the Operation and Maintenance, General, account to provide for immediate response in flood damaged navigation channels and other projects. I am prepared to approve the transfer of funds among Corps accounts to finance emergency activities if necessary, despite the potentially severe adverse impacts throughout the fiscal year 1997 program.

On March 19, the President transmitted to Congress a request for emergency supplemental appropriations, which included $321.2 million for the Army Corps of Engineers. This request subsequently has been modified by updated estimates of costs related to recent flood disasters in the Ohio River basin, lower Mississippi River basin and the Upper Midwest, bringing the total request to $432 million. Of that amount, $232.2 million would be appropriated to the Flood Control and Coastal

Emergencies account to finance repairs to non-Federally maintained levees and other facilities damages by the recent floods in California and the Pacific Northwest, as well as to fully finance the design and construction of emergency outlet works at Devil's Lake, North Dakota. In addition, the Administrations's updated request includes a contingency amount of $75 million, to become available upon the request of the President, to finance responses to flooding from rainfall and snowmelt already experienced in the regions I mentioned, as well as that anticipated later this spring. Emergency supplemental appropriations of $111.8 million are proposed in the President's updated request for the Corps' Operation and Maintenance, General, account to finance repairs to certain Corps facilities damaged by the 1996 and 1997 floods and to restore navigation to channels damaged last winter by tropical storms. In addition, $13 million is needed for the Mississippi River and Tributaries account for flood response and repairs necessitated by flooding in recent weeks.

Sacramento and San Joaquin River Basins Comprehensive Study

On March 6, I wrote to this subcommittee advising you of the Army's plan to reprogram fiscal year 1997 funds in the General Investigations account to initiate a broad study in response to the emergency situation in California and adjoining states. We are envisioning a Comprehensive Basin Investigation of flood damage reduction and associated environmental restoration in the Sacramento and San Joaquin River basins in California. This study would give us a better perspective on current flood facility capacities and operations, levee stability, flood bypass systems, and water uses within the basins. The overall scope and cost of this study are still under development.

Related to this study, the Corps will apply available fiscal year 1997 funding under the Flood Plain Management Services program to undertake a Small Communities Investigation that specifically addresses flood damage reduction solutions for smaller communities within the flood affected areas, particularly in California and Nevada. These studies are scheduled to be completed within two years.

Joint Study of the Cumberland and Tennessee Rivers

The fiscal year 1998 budget proposes to initiate in fiscal year 1997 a joint study by the Corps and the Tennessee Valley Authority of their respective activities on the Cumberland and Tennessee Rivers. The objective of the study would be to submit to OMB by September 1, 1997, a report and recommendations on management arrangements by which these activities could be integrated, in order to improve the operation of the river systems for navigation, flood damage reduction, the production of electric power, recreation and other public benefits and reduce the costs of such operations to both taxpayers and electricity customers. The cost of the study would be borne equally by TVA and the Corps, with the Corps' share being financed out of available fiscal year 1997 funds in the Operation and Maintenance, General, appropriation account.

GOVERNMENT-WIDE FIXED ASSETS INITIATIVE

For many years, most Federal capital acquisitions have been fully financed up front, as required by OMB Circular A–11. Requiring full funding of projects, or useful segments of projects, is expected to improve Federal project programming and accountability for meeting cost, schedule and performance goals across the Government. Previously, water projects were exempt from this requirement. However, the practice of full funding has benefits, especially to local sponsors and Federal project managers, that warrant its use for water projects as well. The fiscal year 1998 budget proposes a transition to full funding of all Civil Works acquisition of fixed assets with two new proposals.

Full Up-front Funding of New Starts

The first proposal for change in financing Civil Works projects in the fiscal year 1998 budget is full up-front funding of the Federal share of seven regular construction new starts, five items of other new construction work, and a number of construction new starts in the Continuing Authorities Program (CAP). Full up-front funding will allow these projects to proceed on the most efficient schedules, improving the Corps' ability, as well as that of non-Federal sponsors, to manage the completion of projects on time and within budget. Funds proposed to be appropriated in fiscal year 1998 for these projects would remain available until project completion, thus avoiding slowdowns some projects have experienced when insufficient incremental funding has been available.

Advance Appropriations for Ongoing Projects with Near-term Completions

The second proposal involves appropriation during fiscal year 1998 of amounts required in each year from fiscal year 1999 through fiscal year 2002 to fully fund the Federal balance to complete 65 continuing projects scheduled for completion during that time frame. These advance appropriations would become available for obligation in the year specified, which would provide the Corps and sponsors of these projects greater predictability in managing the schedules and costs to complete them and bring their benefits on-line.

Incremental Budgeting for the Other Projects Under Construction

Continuing projects with completion dates of 2003 or beyond, including 105 projects in the Construction, General, account and all projects in the Flood Control, Mississippi River and Tributaries (MR&T), account are budgeted incrementally, based on estimated annual requirements to complete the projects. For these projects in the Construction, General, account, the remaining Federal cost of construction after fiscal year 1998 is $13.6 billion. For similarly funded projects in the MR&T account, the remaining Federal cost of construction after fiscal year 1998 is $4.9 billion.

BALANCE AMONG HIGH PRIORITY INTERESTS AND OBJECTIVES

Balance of Priorities in the fiscal year 1998 Budget

The fiscal year 1998 budget would fund a program that balances a number of high priority interests and objectives. This budget balances investments in water resources infrastructure development—principally commercial navigation and flood damage reduction—with investments in watershed and other environmental restoration. It balances continued funding to complete ongoing projects and studies with investments in new, high priority infrastructure and environmental projects. Similarly, it balances the continued maintenance and rehabilitation of existing projects with the construction of new infrastructure that will serve society's current and future needs.

Budget Allocations for Future New Investments

For the past several years, the Army has been engaged in continuing discussions within the Administration concerning the importance of a regular program of new investments in the Civil Works program. This would enable the Corps to maintain and improve its technical capabilities and to continue its historical role as a problem solver for the Nation. This year, not only does the budget include a wide variety of important new starts, but the Administration has directly addressed the larger issue in its five-year planning targets for the Civil Works program.

In the fiscal year 1998 budget, the Administration has addressed this issue in a way that assures adequate funding for the completion of proposed fiscal year 1998 new starts, fully funded under the Fixed Assets Initiative, and in the near term reasonable trade-offs among priorities for the ongoing program. We are hopeful that we can engage Congress in discussions on the future priorities and program levels that are appropriate for the Civil Works program, in the context of the current budgetary constraints.

Concerning the larger issue of the role of the Corps as a national problem solver, in the planning target for the Civil Works program for each year from now until fiscal year 2002 is an amount set aside for new starts in studies, projects, major rehabilitations and other new work. The amount reserved for new work in the fiscal year 1998 budget is $380 million, which would fully fund up front the Federal cost of the proposed new starts, including those in the Continuing Authorities Program. The planning target for each future year includes a new investment amount of $200 million to fully fund new investments to be identified and proposed for that year.

SUMMARY OF THE FISCAL YEAR 1998 CIVIL WORKS PROGRAM

NEW CIVIL WORKS INVESTMENTS

New Starts and Other New Work

The budget provides for initiation of specifically authorized new Civil Works investments with a remaining cost of $547 million, of which the non-Federal share is $182 million. Full funding of the remaining Federal cost of $365 million to complete these investments is included in the fiscal year 1998 budget. In addition, the budget provides for full funding of an unspecified number of new starts in the Continuing Authorities Program (CAP) and Section 1135 program with a remaining Federal cost of approximately $15 million.

The new investments included in the fiscal year 1998 budget are 10 new surveys; seven construction new starts; two major rehabilitation new starts; two resumptions of previously started construction; and one dam safety assurance new start. Of the seven regular construction new starts, two are for flood damage reduction, three are for commercial navigation, and two will provide environmental restoration. Attached to this statement is a table listing the new construction work funded in the fiscal year 1998 budget (see Table B). The weighted average remaining benefit-to-cost ratio for these new investment is estimated to be 2.1 to one.

Water Resources Development Act (WRDA) of 1996

The fiscal year 1998 budget proposes funding for several provisions of WRDA 96. Two of the new starts in the Construction, General, program were authorized in WRDA 96. One is the American River flood damage reduction project, for which the $47.5 million Federal share is proposed to be fully funded up front. This project would stabilize and raise levees along the lower Sacramento River and the east side of the American River, providing much needed flood protection for the Sacramento area. The other new start authorized in WRDA 96 is the $75 million Everglades and South Florida Restoration program authorized in Section 528 of WRDA 96, which will enable the Corps to proceed expeditiously with small, but critical, activities consistent with the restoration program endorsed by the interagency South Florida Task Force. Both of these new authorizations are fully funded up front in the fiscal year 1998 budget.

The budget would provide $2 million for Section 206 of WRDA 1996, a new program for Aquatic Ecosystem Restoration which authorizes the Corps to pursue projects determined to improve the quality of the environment, to be in the public interest, and to be cost effective. The Section 206 program is an important addition to the ongoing environmental restoration activities in the Civil Works program, because it allows the Corps to pursue small aquatic restoration projects not necessarily associated with an existing Civil Works project, provided that a non-Federal sponsor agrees to provide the necessary cost sharing, including all operation, maintenance, replacement and rehabilitation.

Other WRDA 1996 provisions initially funded in the fiscal year 1998 budget include the following: Section 202, which authorizes the Corps to enter into an agreement with the National Academy of Sciences to conduct a study of the Corps' use of risk-based analysis; Section 212, which authorizes the Corps to undertake surveys, plans and studies for the development of engineering and environmental innovations of national significance; Section 215, which reauthorizes the Corps' Inventory of Dams program; Section 234, which authorizes the Corps to engage in activities in support of other Federal agencies or international organizations to address problems of national significance; and Section 510, which authorizes the Corps to expand its environmental assistance to non-Federal interests in the Chesapeake Bay watershed.

CONTINUING PROGRAM HIGHLIGHTS

General Investigations

Improving the planning process.—The diligent effort that has been underway for the past year to streamline the Corps study process is continuing. The majority of the new fiscal year 1997 new reconnaissance studies and all of the proposed new fiscal year 1998 studies are funded at $100,000 and are scheduled for expedited completion. Policy and procedural changes to shorten the time and reduce the cost of the feasibility phase of studies will be implemented very soon. In addition, we intend to take maximum advantage of the findings of a two-year assessment by a panel of the National Academy of Sciences of the Corps' investment decision process, for which the Corps entered in a contract with the Academy in November 1996.

Seamless funding for new preconstruction engineering and design activities.—Under the "seamless funding" practice followed in recent years, the budget also includes funding to proceed into the PED phase on 17 projects for which feasibility studies currently are underway. For one of these PED's, which addresses inland navigation, the feasibility study was Federal financed. The other 16 follow from cost shared feasibility studies scheduled for completion before the end of fiscal year 1998.

Concurrent non-Federal financing for PED and other new design efforts.—In the Civil Works budget last year, the Administration proposed to reduce the budgetary impact of new PED efforts, in the short-run, and guarantee sponsor commitment to costly new engineering and design efforts, in the long run, by requiring concurrent financing by non-Federal project sponsors of 25 percent of the costs of new PED efforts. This represented a change from the past practice of Federally financing PED costs and then recovering the non-Federal share during the construction phase. We

can no longer afford the luxury of federally financing all of these costs. In implementing this policy during fiscal year 1997, we have executed one PED financing agreement, with more than 20 additional agreements scheduled for execution later in the year.

The fiscal year 1998 budget would continue this concurrent financing policy for new PED activities. All new PED's are budgeted at 75 percent of their expected fiscal year 1998 cost, based on the policy that the non-Federal sponsors will concurrently finance the remaining 25 percent. Adjustments to reflect final project cost allocations will be made to ensure the overall cost sharing for each project is consistent with applicable law.

Fairness to non-Federal sponsors who agree to concurrently finance their share of budgeted PED's requires that we also apply this policy to any new PED project added to the General Investigations account by Congress, as well as to comparable activities which may be added by Congress in other accounts.

Research and development (R&D).—The Secretary of the Army has placed a high priority on R&D throughout the Army. Consistent with this priority, the fiscal year 1998 program includes $37 million for R&D funded through the General Investigations account. Aggressive R&D effort can help us to improve efficiency and effectiveness of the Civil Works program by developing technologies and techniques that offer significant savings and greater reliability, safety, and overall effectiveness of our Civil Works projects. For example, the Innovative Design and Construction Techniques for Navigation Projects Research Program will develop the needed guidance for the implementation of innovative concepts that will result in rapid construction and modernization of navigation projects, at much reduced cost and with minimal impact to navigation and the environment during construction. Development of cost-reducing design and construction techniques will permit the construction and modernization of more navigation projects with limited funds in the Inland Waterways Trust Fund and will reduce the potential for major disruptions in inland navigation during periods of construction, thus decreasing operating costs to the Nation's inland navigation industry.

Construction, General

The budget provides for continued construction of 170 individually authorized projects, of which 65 are proposed to receive advance appropriations through fiscal year 2002 for project completion and 106 are proposed to be incrementally funded through annual budgets. Remaining items in the Construction, General account continue to be budgeted incrementally, except for new construction starts in the Continuing Authorities Program and Section 1135. Highlights of the Construction, General continuing program for fiscal year 1998 follow.

South Florida ecosystem restoration.—The fiscal year 1998 budget includes $120 million, within the total funding for associated projects, for the restoration of the Everglades and South Florida ecosystem, a major environmental activity to which we are committed. This amount includes $75 million to fully fund Section 528 of WRDA 1996, as discussed above. It also includes $3 million to continue the Kissimmee River Restoration project. The enactment of WRDA 1996 was an important milestone in the restoration of the Everglades and South Florida ecosystem. That legislation specifies responsibilities, time frames and cost sharing for the Corps and for the non-Federal sponsor for the restoration, preservation and protection of the ecosystem in the vicinity of the Central and Southern Florida project. The Act also codifies in Federal law the South Florida Ecosystem Restoration Task Force, which has been so effective in bringing Federal and State agencies and private interests together in the development of a restoration plan. On April 21, I notified this Subcommittee of the Army's plan to reprogram $1.2 million of fiscal year 1997 funds to accelerate the initiation of this important effort, which would expedite certain activities identified in other, ongoing South Florida activities as having particularly high priority.

Pacific Northwest salmon program.—The fiscal year 1998 budget includes $164.3 million for Corps activities relating to salmon species indigenous to the Columbia River Basin. That amount is financed through several different appropriation accounts. The largest item in this program is the Columbia River Fish Mitigation project, for which $127 million is budgeted to continue the construction of fish bypass improvements at eight Corps dams on the Columbia and Snake Rivers and to continue the mitigation analysis, which evaluates additional measures to increase fish survival at those dams. This includes more than $30 million for Bonneville Dam surface bypass and outfall monitoring facilities and more than $13 million for surface bypass facilities at Lower Granite Dam. This project is responsive to the National Marine Fisheries Service's March 1995 Biological Opinion for operation of the Federal Columbia River Power System. The amount requested is consistent with the

Memorandum of Agreement executed in September 1996 among the Departments of the Army, Commerce, Energy and the Interior, concerning the financial commitment of the Bonneville Power Administration for Columbia River Basin fish and wildlife costs.

Continuing Authorities Program.—The Administration has included $50 million in the fiscal year 1998 budget for a full program of continuing and new work. In this budget, we propose that $8 million of the request be applied to fully fund the Federal snare of fiscal year 1998 construction starts. These funds will be committed when initiation of construction is approved. This provides for treatment of new construction starts in this program in a way comparable to treatment of individually authorized construction new starts. Full funding will ensure that those projects funded for construction can proceed on optimal construction schedules, ultimately producing savings for both the sponsor and the Federal Government. It also avoids potential problems which could arise in the future, considering the constrained funding environment in which the Federal Government now operates, such as insufficient funding to continue construction of all projects that have been started.

Section 1135 environmental modifications.—The fiscal year 1998 budget includes $21.2 million for the program authorized by Section 1135 of the Water Resources Development Act of 1986, as amended. This amount includes $7 million to fully fund the Federal share of fiscal year 1998 construction new starts. The program provides for ecosystem restoration either by directly modifying the structures and/or operation of water resources projects constructed by the Corps or, as the authority was expanded by WRDA 96, by restoring areas where a Corps project contributed to the degradation. Since the initial funding for the Section 1135 program in 1991, physical construction of 12 projects has been completed, and 15 additional projects are under construction. Completed projects include Trestle Bay Restoration, Oregon; Salt Bayou, McFaddin Ranch Wetlands, Texas; and Narrows Dam, Lake Greeson, Arkansas. This program demonstrates that the Corps can develop innovative, cost effective and technically sound solutions to a variety of environmental problems. Interest in the program is expected to grow in response to the expanded authority provided by WRDA 1996.

Section 204 beneficial uses of dredged material.—The fiscal year 1998 budget includes $2 million for the program of Beneficial Uses of Dredged Material under Section 204 of WRDA 92, as amended. This includes funds to fully fund the Federal share of any new construction starts. Two projects in Louisiana have been essentially completed under this authority. This valuable program benefits the environment, while making good use of clean material dredged from navigation channels maintained by the Corps.

Hurricane and storm damage reduction policy.—The budget includes $66 million to continue previously initiated projects on which long-term Federal commitments already have been made, regardless of the type of area served or the length of the commitment. However, continuing the policy articulated last year in the President's budget, we are proposing no new Federal commitments for shore protection projects to protect primarily recreation destinations which provide substantial regional income to the state or local economies or would involve long term Federal responsibility for periodic nourishment.

Reprogramming in a funding constrained environment.—Throughout the course of the year, the Army advises the Appropriations Subcommittees of plans to reprogram funds among projects in accordance with long-standing procedures agreed to by the Executive Branch and the Subcommittees, as recently expanded by Section 106 of the Fiscal Year 1997 Appropriations Act. The Corps proposes to exercise these reprogramming authorities when doing so would more efficiently use available funding, taking into account such factors as unanticipated slippage in project schedules or changes in cost estimates. In the past, the Corps has reprogrammed funds from projects which experienced schedule delays or cost savings to other projects with unanticipated needs, such as accelerated contractor earnings or settled claims. Generally, this was accomplished without controversy. Project proponents were aware of the reprogrammings, understood that cost effective management of the Civil Works program required these adjustments, and were confident that funds would be returned to the original projects when they were required.

Over the past year, the Corps has experienced unusual difficulty in identifying sources of funds in its programs that are excess to the current requirements of the project to which they were allocated and can, therefore, be reprogrammed to help keep another project on schedule without adversely affecting the original project. Overall fiscal constraints, combined with the success of our efforts to significantly reduce the Corps' unobligated carryover, have in some cases prevented the Corps from making payments to contractors that keep up with the contractors' progress. In the current funding constrained environment, the need to give priority in re-

programming to payments owed to current contractors may limit somewhat the Corps ability to take advantage of other opportunities to expedite work or, in extreme cases, even maintain announced schedules.

The Corps' ability to reprogram funds is more critical than ever when funding is constrained. Given the importance of reprogramming to efficient and effective program management, I ask this Subcommittee to continue to support the Corps' current reprogramming authorities during the coming year.

Operation and Maintenance (O&M), General

Prudent management of the Nation's investment in water resources projects is an important part of our program. Nearly half of the Army's $3.7 billion Civil Works budget—$1.62 billion—supports the preservation of the valuable assets that make up the existing infrastructure. This budget request will help ensure that the Corps of Engineers can continue to deliver justified levels of service at the least cost to the taxpayer in the five mission areas described below.

Navigation.—A total of $868 million is requested to operate and maintain an extensive system of coastal ports and inland waterways that provide for safe and efficient movement of waterborne commerce. Within this total, $46 million is included to maintain shallow draft harbors, including inland waterway ports, coastal harbors and connecting channels, where the economies of the communities are dependent on commercial fishing and related purposes.

Flood damage reduction.—The prevention of flood damages continues to have a high priority in the Civil Works program. The budget includes $212 million to save lives and reduce the level of property damage incurred by floods.

Hydropower.—The Corps plays a significant role in meeting the Nation's electric power generation needs. The budget request includes $276 million for the production of reliable and cost effective electricity from a renewable source of power.

Recreation.—The Corps is one of the Federal government's largest providers of outdoor recreation opportunities. The budget includes $176 million to provide this service at multipurpose reservoirs, of which an estimated $30,000 would be derived from recreation user fees collected at Civil Works projects.

Environmental stewardship.—In order to assure that the operation of Civil Works facilities and management of associated lands comply with environmental requirements, the budget request includes $80 million to manage Corps projects in an environmentally responsible manner.

Remaining items in the amount of $35 million make up the rest of the O&M budget request. These funds are for research and development and other programmatic activities that support the five mission areas described above. Savings and slippage in the amount of $29 million has been deducted from the above amounts, for a net total O&M request of $1.62 billion.

In support of the Administration's goal to balance the budget by the year 2002, we are exploring various cost saving measures in the O&M program. Aligning operation and maintenance levels at projects with the demand for services is one avenue. For example, where utilization of locks is relatively low, perhaps the same service could be provided for our customers at something less than 24 hours a day. Another example would be to align the length of the recreation season with visitation rates at Corps lakes. Support activities, such as condition and operation studies, master planning, water control management and real estate management are potential cost saving areas. Under current budget constraints, we will need to critically examine all our facilities to ensure that available resources are devoted to the highest priority maintenance requirements.

The above examples are conceptual and will be analyzed further, coordinated with our customers and refined as necessary to achieve the cost savings in an informed and open forum. Also, the individual project amounts included in the fiscal year 1998 budget represent our best estimates of what will be required next year. Undoubtedly, intervening events will change these requirements. The Corps will closely monitor project conditions and will apply the flexibility the Subcommittee has afforded the Civil Works program to make adjustments among projects to ensure that the most urgent O&M requirements are met.

Flood Control, Mississippi River and Tributaries (MR&T)

The President's fiscal year 1998 budget includes $266 million for the MR&T program. All MR&T projects are budgeted for incremental annual funding, as in the past. The budgeted funding level treats MR&T continuing construction schedules comparably with those in the Construction, General, account. The amount budgeted for the streambank Demonstration Erosion Control (DEC) program is intended to complete the Corps' involvement in the DEC in fiscal year 1998. Funding for limited new DEC construction contracts is included as necessary to protect work that is cur-

rently in place. In addition, the budget would continue necessary engineering and design for future work, in order to turn the DEC over to the local sponsor in an orderly manner. We ask the Subcommittee to reconsider this proposal, which would phase out an essentially completed demonstration program.

Regulatory Program

Funding level.—The budget includes $112 million for the Corps Regulatory Program to maintain fair and effective regulation of the Nation's wetlands and other aquatic resources. This is the same amount requested in the President's fiscal year 1997 budget and an increase of $11 million over the $101 million appropriated for fiscal year 1995, 1996 and 1997. The increase is necessary to implement important initiatives that make the regulatory program more responsive, more equitable, and more efficient. Unfortunately, while these initiatives have been planned for several years, they have been delayed due to lack of funds.

For example, the administrative appeals process allows applicants to challenge regulatory decisions without litigation and has drawn support from the private sector. However, implementation of the administrative appeals process has been partial and slow, because of inadequate funding to fully carry out this highly regarded initiative. Of the amount requested in the fiscal year 1998 budget for this program, $5 million is to fully implement the administrative appeals process in fiscal year 1998. Efforts to increase cooperation and coordination with State and local governments on regulatory matters have also been delayed due to funding constraints. These efforts will increase state and local responsibilities for wetlands management, eliminate duplication with Federal programs, provide better service to the public, and reduce costs for the Federal Government. The additional funds also will allow the regulatory program to continue its improved service to the public, such as shorter processing time for permit applications, which currently is only 12–20 days for most permits. Efficiencies which have been introduced into the program are apparent in the fact that permit processing time has improved every year for the last four years, despite a 50 percent increase in the number of permit actions. Without the support of Congress in the form of funding at the requested levels, improvements in performance have leveled off and performance can soon be expected to decline, because the program cannot afford to maintain adequate staffing levels.

Regulatory program user fees.—The Administration is again proposing legislation to establish a more rational system of permit application fees for the Corps regulatory program. In the current system, most permit fees do not cover the cost of collection, let alone the cost of administering the program. Under this proposal, the fees for individual landowners would be eliminated, and fees for commercial applicants would be increased to cover the costs of evaluating and processing the permits, using a sliding scale based on the complexity of the application.

Flood Control and Coastal Emergencies

Civil Works program budget.—The President's budget provides $14 million for basic planning and preparedness in the Flood Control and Coastal Emergencies program. The budget request ensures a minimum level of funding for salaries and expenses, training, coordination with other Federal and non-Federal agencies.

Emergency requirements for natural disasters contingency fund.—A major Government-wide initiative reflected in the President's fiscal year 1998 budget is the proposal to establish a centralized funding of future emergency requirements. This fund is intended to finance a broad range of potential emergency requirements of the Executive Branch and to serve as an alternative to agency-specific emergency supplemental appropriations requests. The President's request for funds appropriated to the President includes $5.8 billion for this contingency fund, the estimated average annual Federal emergency spending from fiscal year 1991 through fiscal year 1997. It is intended for the Corps of Engineers to be provided access to this fund after current appropriations for meeting emergencies are obligated and a Presidential decision has been made to make additional funds available.

Improving Government Efficiency and Effectiveness

The draft Civil Works Strategic Plan, being prepared in response to the Government Performance and Results Act, is currently under discussion between the Army and OMB. Our challenge is to describe how the Corps of Engineers will continue to fulfill its Civil Works missions while meeting the challenges of the five-year funding targets allowed for this program in the President's plan for balancing the budget by 2002.

The Corps is preparing program performance goals and performance measures for each of its eight business programs: flood and coastal storm damage reduction, navigation, environment, hydropower, recreation, regulatory, emergency preparedness and disaster response, and support for others. We will consult with this subcommit-

tee and others on the Strategic Plan as soon as we have completed our consultations with OMB.

CONCLUSION

In conclusion, I would emphasize my commitment to work with this Subcommittee, others in Congress, the broader array of interests within the Administration, and the non-Federal partners of Civil Works projects to develop new policies and priorities to ensure that the Army Civil Works program in the Corps of Engineers continues to serve the vital interests of the Nation by providing efficient, priority investments in public infrastructure. Moreover, this must be achieved in a way that supports and contributes to the President's commitment to balance the Federal budget. Managing the Civil Works program during the coming years of severe funding constraints will be a tremendous challenge requiring the cooperation of all interests. I ask for your support as we move forward to meet these challenges.

Thank you Mr. Chairman, Members of the Subcommittee. This concludes my statement.

TABLE A.—FISCAL YEAR 1998 DIRECT PROGRAM—PRESIDENT'S PROGRAM

[In thousands of dollars]

Program	Harbor maintenance	Trust inland waterways	Coastal wetlands restoration	Recreation user fees	Fund		General	Total	Trust rivers and harbors contributions	Total
					Special permanent appropria-tions	Permit application fees [1]				
Combined (Discretionary and Mandatory):										
General Investigations	.....	.....	.....	.....	.....	.....	150,000	150,000	22,000	172,000
Construction, General	.....	70,185	.....	.....	.....	.....	1,323,065	1,393,250	82,000	1,475,250
Operation and Maintenance, General	489,600	.....	.....	30,000	.....	.....	1,098,400	1,618,000	2,000	1,620,000
Mississippi River and Tributaries Project	.....	.....	.....	.....	.....	.....	266,000	266,000	6,086	272,086
Regulatory Program	.....	.....	.....	.....	.....	7,000	112,000	112 000	.....	112,000
General Expenses	.....	.....	.....	.....	.....	.....	148,000	148,000	.....	148,000
Flood Control and Coastal Emergencies	.....	.....	.....	.....	.....	.....	14,000	14,000	.....	14,000
Revolving Fund	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Coastal Wetlands Restoration	.....	.....	44,000	.....	.....	.....	.....	.....	11,000	55,000
Permanent ppropriations	.....	.....	.....	.....	13,075	.....	.....	.....	.....	13,075
All	489,600	70,185	44,000	30,000	13,075	7,000	3,104,465	3,701,250	123,086	3,881,411
Discretionary	489,600	70,185	.....	30,000	.....	.....	3,104,465	3,701,250	.....	3,701,250
Mandatory	.....	.....	44,000	.....	13,075	.....	.....	.....	123,086	180,161

[1] Proposed fees for processing permit applications.

TABLE B.—FISCAL YEAR 1997 NEW CONSTRUCTION WORK

[Fiscal year 1998]

Project name	Fiscal year 1998 budget request	Total project cost	Federal cost	Non-Federal cost
New Construction Starts:				
American River, CA	$44,744,000	$63,300,000	$47,500,000	$15,800,000
Everglades and South Florida Ecosystem Restoration, FL	75,000,000	150,000,000	75,000,000	75,000,000
Anacostia River and Tributaries, MD and DC	10,799,000	16,000,000	12,000,000	4,000,000
Wilmington Harbor Channel Widening, NC	17,512,000	24,871,000	18,600,000	6,271,000
Las Cruces, NM	6,000,000	8,800,000	6,600,000	2,200,000
Houston-Galveston Navigation Channels, TX	119,100,000	185,100,000	137,900,000	47,200,000
AIWW Bridge at Great Bridge, VA	21,139,000	26,900,000	23,100,000	3,800,000
Major Rehabilitation:				
Buford Powerhouse, GA	27,200,000	27,200,000	27,200,000	.....
Lock and Dam 3, Mississippi River, MN	12,400,000	12,400,000	12,400,000	.....
Dam Safety Assurance: Tygart Lake, PA	28,043,000	29,500,000	29,500,000	.....
Resumptions:				
Alton to Gale Organized Levee District, IL and MO	575,000	7,891,000	7,589,000	302,000
Cooper River, Charleston Harbor, SC	2,738,00	2,738,000	2,738,000	.....
Totals	365,250,000	554,700,000	400,127,000	154,573,000

STATEMENT OF JOE N. BALLARD

Senator DOMENICI. Thank you very much. General Ballard, I appreciate your coming. It was a pleasure meeting with you. Congratulations on being the Army's top engineer. It is great to have you on board.

General BALLARD. Thank you very much, sir. Mr. Chairman and members of the subcommittee, I am pleased to be testifying on the President's fiscal year 1998 budget for the Civil Works Program, and am honored to be appearing before you for the first time as Chief of Engineers.

Thanks to your great support, the Civil Works Program is strong, is balanced, and is highly productive. I look forward to our continued partnership in this essential program that is so beneficial to our great Nation.

Mr. Chairman, with your permission I will now summarize my complete statement, and submit that statement for the record.

CORPS DIVISION STRUCTURE

My summarized statement covers two topics: the new division structure, and the fiscal year 1998 Civil Works Program budget. First I want to take a few minutes to discuss our new division structure that was implemented on the first of April. I know that there is great interest in this, and I want to hit that up front.

You have each been provided an outline of our new structure, so rather than spending time describing it, I would like to address the structure's background and its merits.

I want to make several points. The first point is that we have been trying to restructure since 1989 without success. The second point is that during the intervening years the Corps has made many significant reductions in its work force, particularly at the division and at the headquarters level. Much of the large savings originally envisioned as a result of division office restructuring have been of necessity achieved through other steps. These savings

are reflected in the budget request. The third point is that many other efficiency actions were on hold pending resolution of restructuring. We could not effectively proceed without knowing the outcome. Finally, the years of ongoing restructure initiative were taking their toll on our employees and their morale, since there has been great uncertainty about what would happen. It is important for all of those reasons that we have come to closure on this issue.

The plan submitted to you by the Secretary of the Army and implemented at the beginning of this month responded to all of the requirements of the law, ensuring continued presence in key areas, allowing us to draw down in selected areas, while still maintaining watershed integrity. The new structure optimizes our support to the Army and Air Force, which are also major considerations.

WORK FORCE SIZE

Let me briefly discuss some key points on resourcing. The Corps has already made significant reductions in its executive direction and management work force since 1989. We achieved these reductions through down sizing and reorganization initiatives independent of formal restructuring.

From 1989 to the present, we reduced the size of the Corps headquarters by 24 percent. As a result of this action, the Corps headquarters now accounts for less than 2 percent of the total civil works work force, making it one of the leanest headquarters of any agency in Washington. In October 1996, the Corps completed a major division office restructure initiative. We divested the divisions of operating functions, such as technical review, and we eliminated duplications of efforts. A typical division headquarters has been reduced from 90 Civil Works Program funded FTE's to 76. In total the Corps has reduced its general expenses work force by 29 percent since 1989.

The new structure will provide a work force within which we can continue to draw down without hurting program execution. It allows us to appropriately shape the work force consistent with program workloads.

I want to thank you for your continued support in this difficult area. I strongly feel this structure is the best one for the Corps, and sets in place a more efficient organizational structure permitting greater efficiency in the future.

FISCAL YEAR 1998 CIVIL WORKS PROGRAM

Turning briefly now to the civil works direct program, I know that you have seen and your staffs have analyzed the proposed funding levels. Let me highlight a few key points. The proposed funding level includes the traditional incremental funding plus categories called full and advance funding. As the Secretary explained, this approach is in support of the administration policy to fund up front all Federal investments in fixed assets.

Of the proposed funding, 20 percent will come from sources other than the general fund of the Treasury. All but 7 percent would come from the nine existing special and trust funds. The one new source is a proposed special fund based on fees for permits from commercial applicants.

The overall impact of this budget is positive given the major efforts underway to balance the budget, which is important to the Nation. It provides reasonable amounts for Corps traditional measures. It also provides considerable funding for new starts in each of the 5 years to allow us to respond to the Nation's many pressing water resource management needs.

A special concern of mine is our ability to maintain our existing civil works infrastructure. The facilities are getting older and the dollars are declining. I have asked Major General Fuhrman to make this a special focus area.

In conclusion, Mr. Chairman, the President's budget for the Corps of Engineers provides stable funding with a balance among competing priorities. However, we must continue to find ways to reduce our costs and shift more of those remaining to direct beneficiaries of our services. Meanwhile, we will do our very best to execute the Civil Works Program for the maximum benefit of the Nation. I am confident in our ability to meet that challenge, in continuing to benefit our great Nation.

Thank you, Mr. Chairman, and members of the subcommittee. This concludes my statement.

[The statement follows:]

PREPARED STATEMENT OF LT. GEN. JOE N. BALLARD

INTRODUCTION

Mr. Chairman and Members of the Subcommittee: I am pleased to be testifying on the President's fiscal year 1998 Budget for the Civil Works Program, and am honored to be appearing before you for the first time as Chief of Engineers.

Thanks to your great support, the Civil Works Program is strong, balanced, and highly productive. I look forward to your continued partnership in this fine program, so broadly beneficial to our Nation.

My statement covers six topics: New Division Structure, Fiscal year 1998 Civil Works Program Budget, Improvement of Business Processes, Corps of Engineers Financial Management System, Civil Works Program Execution and Outlook, and Corps Vision and Strategic Plan.

NEW DIVISION STRUCTURE

I want to take a few minutes to discuss our new division structure that was implemented on the 1st of April. You have each previously been provided an outline of the structure. Rather than spending time describing the structure itself, I would like to address the background and merits.

I want to make several points. The first point is that we had been trying to restructure since 1989 without success. The second point is that during the intervening years, the Corps has made many significant reductions in its workforce, particularly at the division and headquarters levels. Much of the large savings envisioned as a result of division office restructuring has been, of necessity, achieved through other steps. The savings are reflected in the budget request. The third point is that many other efficiency actions have been "on-hold" pending resolution of restructuring. In many cases it would have been premature to implement these, not knowing the outcome. Finally, the years of the ongoing restructuring initiative were taking their toll on our employees and their morale, since there has been great uncertainty about what would happen. It is important for all those reasons that we have come to closure on this issue.

The plan submitted to you by the Secretary of the Army, and implemented at the beginning of this month, responds to all requirements of the law, ensuring continued presence in key areas, allowing drawdown in selected areas, maintaining watershed integrity, and optimizing our support to the Army and Air Force, which is also a key consideration. Let me now discuss some key points on resourcing.

The Corps has already made significant reductions in its Executive Direction and Management (ED&M) workforce since 1989. We have made significant progress, exceeding the requirements of the Federal Workforce Restructuring Act (enacted in

1994). We achieved these reductions through downsizing and reorganization initiatives independent of formal restructuring.

For example, from 1989 to the present, we reduced the size of the Corps headquarters in Washington by 24 percent. As a result of this action, the headquarters now accounts for less than 2 percent of the total Civil Works Program workforce, making it one of the leanest headquarters of any federal agency. In October 1996, the Corps completed a major division office reorganization initiative. This initiative reoriented the divisions on their primary functions of command and control, regional coordination, program management, and quality assurance. We divested the divisions of operating functions, such as technical review, and eliminated duplication of effort. A typical division headquarters has been reduced from 90 Civil-Works-funded full-time equivalent employment years (FTE's) to 76. In total, the Corps has reduced its General Expenses (GE) workforce by 29 percent since 1989.

We anticipate that the GE account will be flat-funded in the future. There are two Army-wide initiatives—regionalization of Human Resources Offices (HRO's) and consolidation of Finance Offices. At the end of fiscal year 1995, the Corps had 35 HRO's with a total operating staff of 687 FTE's. In fiscal year 1996, five of these HRO's were regionalized and the operating staff was reduced by 142 FTE's, or 21 percent, to 545 FTE's. We hope to see minor savings from the consolidation of Finance Offices. Also, we will continue to seek ways to reduce the size of the headquarters staff.

We were in a position where we could not make further cuts within division headquarters without affecting their abilities to perform essential functions noted earlier. This new structure will provide a framework within which we can continue to draw down without hurting program execution. It allows us to shape the workforce consistent with program workload.

Thank you for your continued support in this difficult area. I strongly feel the new structure is the best one for the Corps, and sets in place a more efficient organizational structure, permitting greater efficiencies in the future.

FISCAL YEAR 1998 CIVIL WORKS PROGRAM BUDGET

INTRODUCTION

New fiscal year 1998 funding for the Civil Works Program, including the Direct and Reimbursed programs, is expected to approach $4.68 billion. The Direct Program is formulated by the federal government and funded through appropriations of discretionary and mandatory amounts directly to the Corps. The Reimbursed Program is formulated, under provisions of law, by the Corps in collaboration with other federal agencies, State and local governments, and other nations. Usually, it is funded from discretionary amounts of the Direct Program, initially, and, ultimately, through reimbursement by the agencies, governments, and nations.

DIRECT PROGRAM

Overview

The proposed fiscal year 1998 Civil Works Direct Program budget provides for continued funding of nearly all studies and projects underway, including many started in fiscal year 1997. It also provides for funding of new starts under the General Investigations (GI) and Construction, General, (CG) programs.

Funding includes traditional "incremental" and newly instituted "advance" and "full" funding amounts. All programs, except the CG Program, are funded in the traditional incremental way. Appropriations are made for the budget year of amounts needed then, based on estimates in the justification statements for that year. The CG Program is funded in all three ways in order to comply, as fully as currently practicable, with the government-wide initiative to fund, upfront, federal investments in fixed assets. Ongoing projects not completing in the 5-year program, fiscal year 1998—2002, are incrementally funded, as described above. Those completing within outyears of the 5-year program, fiscal year 1999—2002, are fully funded through advance appropriation in each year of amounts needed in that year, based on outyear estimates in the budget year justification statements. All fiscal year 1998 new start projects, including any under the Continuing Authorities Program (CAP) and the Project Modifications for Improvement of the Environment Program (Section 1135), are fully funded, upfront, through appropriation in fiscal year 1998 of the full amount needed to complete these projects.

The new start program includes 10 new studies, including nine reconnaissance studies and one new feasibility study. Also, 17 preconstruction engineering and design studies, following cost-shared feasibility studies, are being funded for the first time. The new start program also includes new construction projects, including 12

specifically authorized by Congress, and an undetermined number generally authorized under the CAP. The specifically authorized projects include seven regular construction projects, two project resumptions, two major rehabilitation projects, and one dam safety assurance project.

New Funding

The fiscal year 1998 budget provides for $3.88 billion in new funding. This includes $3.70 billion in discretionary appropriations being requested through the Fiscal Year 1998 Energy and Water Development Appropriations Act, and $180 million in mandatory appropriations to be made available under existing law. Discretionary funding includes incremental, advance, and full funding amounts of $3.09 billion, $228 million, and $380 million, respectively. Mandatory appropriations include $13 million in permanent appropriations for maintenance of hydraulic mining debris reservoirs in California; $44 million from the Coastal Wetlands Restoration Trust Fund (CWRTF); and $123 million in nonfederal contributions from the Rivers and Harbors Contributions Trust Fund (R&HCTF), representing costsharing paid under five programs and one project. The programs are the GI; CG; Operation and Maintenance, General (O&M); and Coastal Wetlands Restoration programs. The project is the Flood Control, Mississippi River and Tributaries (MR&T) Project.

Effect of Full Funding

As shown in the table, new funding for the fiscal year 1998 budget, including discretionary and mandatory funding, is slightly larger than the total of appropriations for fiscal year 1997, exceeding the total by $104 million. However, the discretionary part exceeds last year's total by more than $179 million. Of the $1.39 billion in discretionary appropriations for this program, $380 million, or 28 percent, is provided to fully fund new construction starts upfront, in accordance with the government-wide initiative to fully fund fixed assets. Of this full funding amount, an estimated $42 million will be obligated in fiscal year 1998; the remaining $338 million is programmed for use over the next four years. Outlays of discretionary funding for fiscal year 1998 are expected to be about $280 million less than for fiscal year 1997.

Net New Funding

Of the $3.88 billion in total new funding, $777 million, or 20 percent, would come from 10 sources other than Treasury's General Fund. These sources—nine existing and one proposed—include five Special and five Trust Funds. The largest amounts would come from the Harbor Maintenance Trust Fund (HMTF) ($490 million), R&HCTF ($123 million), Inland Waterways Trust Fund (IWTF) ($70 million), CWRTF ($44 million), and Special Recreation User Fees (SRUF) Fund ($30 million). As discussed later, under Program Execution and Outlook, the one proposed source would be a special fund for the Regulatory Program, with collections estimated to amount to $7 million in fiscal year 1998 and increase to $14 million, annually, thereafter.

Significance of Budget for Corps

Given the President's plan to balance the federal budget by fiscal year 2002, the Corps' relatively strong budget and flat funding ceiling of nearly comparable magnitude in the outyears of its 5-year program are very encouraging. It provides adequate amounts for our traditional missions. It enables continuing, with few exceptions, ongoing planning, design, and construction projects. Additionally, it provides considerable funding for new construction starts in each of the five years, supporting the Corps' traditional, highly developed, and important role in water resources problem-solving for the Nation.

Ever-shrinking resources challenge us to become even more efficient and innovative in producing for our customers. As discussed later, we have been working hard at this, and have met with many successes already. However, much more is needed. My recently released Strategic Plan, discussed under the Corps Vision and Strategic Plan, commits us to achieve "dramatic improvement in performance and customer satisfaction." Our goal is to "revolutionize" our effectiveness in problem-solving—continually maximizing the actual and potential values of our organization to Civil Works Program customers and the Army, and, thereby, the Nation. This budget promotes implementation of the Strategic Plan, not only confirming its necessity, but also providing adequate funding to facilitate its diligent pursuit.

Full funding for acquisition of fixed assets will allow us to coordinate far more intensively, quickly, and effectively with local sponsors in determining optimum work and funding schedules based on capabilities and constraints of both parties. Both parties should benefit significantly—the Corps, because of more efficient work schedules; and the customer, because of greater certainty of financial obligation and faster delivery of needed facilities and expected benefits.

REIMBURSED PROGRAM

Through the Civil Works Reimbursed Program we help other agencies with timely, cost-effective implementation of their programs, while maintaining and enhancing capabilities for execution of our Civil Works Direct Program and Military Program missions. Other agencies look to us for help with engineering and construction management because of our vast experience and capabilities, enabling us to do the work better, faster, and cheaper. In recognition of this, OMB makes available manpower for response to agency requests.

We provide reimbursable support for about 60 other federal agencies and several State and local governments through help with environmental, engineering, and construction management work. Total reimbursement for such work in fiscal year 1998 is projected to be close to $800 million. About half of this is for environmental work. The largest share—nearly $300 million—is expected from the Environmental Protection Agency (EPA) for cleanup of wastes at numerous sites under its Superfund program. 98 percent of our Reimbursed Program funding is provided by federal agencies.

STAFFING

Total staffing for the Civil Works Program for fiscal year 1998 is 26,371 FTE's. This reflects a reduction of 830 FTE's from the fiscal year 1997 total. Of the total, 25,133 FTE's are for the Direct Program and 1,238 FTE's are for the Reimbursed Program. Total staffing is 90 percent to districts, 4.5 percent to laboratories and other separate field operating agencies, 3.5 percent to division offices, and less than 2.0 percent to headquarters. Under our new structure, the headquarters share will remain essentially unchanged, while district and separate field operating agency shares will grow from reallocation of division office savings.

IMPROVEMENT IN BUSINESS PROCESSES

INTRODUCTION

This part of my testimony summarizes efforts to improve business processes of the Civil Works Program over the past few years, with emphasis on accomplishments in fiscal year 1996, and efforts underway in fiscal year 1997.

DECISION DOCUMENT REVIEW/APPROVAL

We have implemented important changes in our Civil Works Program document production and approval processes. Headquarters now restricts its review of decision documents to "policy review," ensuring compliance with law and Administration policy. Divisions restrict their reviews of these documents to "quality assurance reviews," ensuring quality of planning and engineering in accordance with approved quality assurance plans implemented for each of their districts. Districts accomplish "technical reviews," controlling the technical adequacy of the planning and engineering in these documents. Each district has adopted generic quality control plans for routine projects, and specific quality control plans, as needed, for high risk projects.

Former successive reviews by districts, divisions, headquarters, the former Washington Level Review Center, Army, and OMB made review times for project reports exorbitant. Implementation of the new "division of labor," based on new roles and missions, has significantly reduced these times. For example, assigning districts complete responsibility for technical review, including independent review, enables "one stop" accomplishment of a function formerly requiring three stops—one at district, division and headquarters levels. This greatly compresses review time, promoting much more timely approval of project designs and implementation of project starts.

HEADQUARTERS RESPONSIVENESS TO FIELD OFFICES

In addition to restricting its review to policy review, our Washington-level review office continues to improve its review process in an effort to provide more timely decisions to districts.

In fiscal year 1996, we received and completed review of more than 320 decision documents, including reconnaissance, feasibility, design, and real estate reports. These reviews led to preparation of 31 Chief of Engineers Reports recommending projects ultimately authorized in the Water Resources Development Act of 1996 (WRDA96). Average processing time for these and other decision documents reviewed during the first quarter of fiscal year 1997 was 110 days. This is 18 days fewer than the 128-day-average in fiscal year 1995. We will continue to try to shorten this average.

Additionally, in fiscal year 1996, this office completed review of and approved more than 46 Project Cooperation Agreements (PCA's) for specifically authorized projects. Average processing time for these documents was only 55 days, enabling project construction to begin expeditiously.

Much of our success in shortening policy review time has resulted from aggressive monitoring of timeliness through use of a recently implemented internal control system.

Finally, in the interest of further expediting the decision document review process, Army recently proposed to reduce State and agency review times from 90 to 30 days. In light of the significant involvement of State and federal agencies in development of project proposals, we found the 90-day review time to be lengthy and duplicative. This initiative was enacted into law in WRDA96, and, combined with the internal control system, promoted timely signing of 13 Chief's Reports for projects authorized in Section 101(b) of WRDA96.

PROJECT COOPERATION AGREEMENTS

A key milestone in execution of cost-shared projects is execution of Project Cooperation Agreements (PCA's). These legal contracts spell out roles and responsibilities of both the federal government and nonfederal sponsor. Negotiation and processing of PCA's are complex and time-consuming and can lengthen project schedules. Since 1991, we have worked to make such negotiation and processing more predictable and efficient in two ways.

First, in consultation with nonfederal project sponsors, we have developed several new model PCA's reflecting principles of partnering, described below under Partnering, and addressing recurring concerns of sponsors. We continue to develop models to respond to needs of sponsors and expedite the process. Two of the models, cover a major portion of the Corps' program. They cover specifically authorized flood control projects, including recreation features, and commercial navigation projects. Other models cover continuing authorities projects; four new models cover WRDA92 section 304 projects. Latest versions of all models are available and easily accessible on the world-wide web.

Second, we have delegated authorities to division and district commanders to execute PCA's conforming to the models, without Washington-level review.

These steps have fostered partnerships and expedited negotiations, and in cases of conforming PCA's for specifically authorized projects, cut 60 days off the average schedule of 120 days.

PARTNERING

The Alternative Dispute Resolution (ADR)/Partnering Program—our new way of doing business—is a corporate success story which has spawned a cultural phenomenon. Through partnering, goals are established in common interest to produce win-win outcomes. The process is based on trust, openness, teamwork, and risk-sharing by all stakeholders in projects—customers and vendors alike. Its purpose is to minimize misunderstandings and claims, avoid costly litigation, and expedite production. The success of partnering has resulted in better administrative and cost control throughout the Corps. Contract claims have been reduced by more than 70 percent in five years. Appeals have also been dramatically reduced.

Success has been achieved in related areas as well. For example, the Corps training program in ADR/Partnering techniques was first of its kind in the Federal Government, and has been the longest running as well. It has served as a model for programs of other federal agencies, including the Office of Personnel Management's program for executive management, and for programs of several law schools and universities. Also, under the Administration's National Performance Review and Reinventing Government Initiative, the Corps was given the lead in producing the tri-service's Partnering Guide for Environmental Missions of the Air Force, Army, Navy. This guide, now in its second printing, is strongly supported by EPA.

We expect additional successes in partnering and customer service in the future. In September 1996, we conducted a partnering workshop with our division offices. The objectives of the workshop were to examine ways to:

—increase the use of partnering techniques throughout the entire project development process prior to, as well as during, the construction phase;

—increase the involvement of our local sponsors in more of the day-to-day management activities of the project, and;

—increase the amount and type of work that our local sponsors may accomplish during the project development process.

The workshop resulted in a number of recommendations that are being pursued. One of the most significant was for development of a Civil Works partnering guide,

following the pattern of the tri-service's environmental guide. This document will provide policy, tools and techniques for partnering throughout the project development process.

GOVERNMENT PERFORMANCE AND RESULTS ACT OF 1993

The landmark Government Performance and Results Act of 1993 (GPRA) requires that we show how improvements in our business processes, and efforts to balance scarce budgetary resources between operation and maintenance and new investments, ultimately impact delivery of our products and services to the Nation.

The improvements in our business processes, discussed elsewhere in this statement, include: streamlined decision document review processes, eliminating duplication of functions at different levels; intensively monitored policy review, significantly reducing average review times; standardized PCA models, simplifying and expediting development, review, and approval of PCA's; broader application of partnering techniques to strengthen partnerships with sponsors, expediting construction and minimizing costs; and intensively managed program execution, for more efficient and timely production and greater customer satisfaction.

Until recently, we could demonstrate benefits of these process improvements only at the project level; we did not have means to display them at the program level. Likewise, we could demonstrate the impacts of varying funding levels on levels of program services and the timing of program results at the project level; however, again, we did not have means to measure such impacts at the program level.

Currently, we are testing an initial set of results-oriented performance measures for demonstrating the contributions of internal process improvements and impacts of different levels of funding for programs. Our goal is to comply with GPRA in development of a comprehensive set of results-oriented program performance measures. We are discussing these measures with OMB, and beginning the consultation process with Congress. This should lead to successful development of our first Annual Performance Plan in fiscal year 1999, as required. The plan will assist managers, the Administration, Congress, and the American people in determining what program results should be achieved with resources entrusted to us.

CORPS OF ENGINEERS FINANCIAL MANAGEMENT SYSTEM

Since our last appearance before you, we received formal Department of the Army Major Automation Information Systems Review Council (MAISRC) approval to deploy the Corps of Engineers Financial Management System (CEFMS) Corps-wide. As a result, during fiscal year 1996, we completed deployment in the Southwestern Division and in the National Capitol Region, initiated and completed deployment in the South Atlantic Division, and initiated deployment in the Missouri River Division. In fiscal year 1997, to date, we have completed deployment in the Missouri River Division and initiated deployment in the Pacific Ocean and the Great Lakes and Ohio River divisions. We anticipate completing the process in February 1998 with the North Atlantic Division.

The Department of Defense, in the person of Dr. John Hamre, the Under Secretary of Defense (Comptroller/Chief Financial Officer), has endorsed CEFMS by selecting it as a migratory system for General Fund Accounting for the Army and Air Force, and for Defense Transportation Business Systems, and by supporting the nomination of CEFMS for the 1997 Innovations in American Government Award from the Ford Foundations and the Kennedy School of Government at Harvard University.

PROGRAM EXECUTION AND OUTLOOK

INTRODUCTION

Program Execution continues to be very important throughout the Corps. In fiscal year 1996, our divisions and districts generally succeeded in improving their execution, as measured in terms of expenditures. We are continuing to emphasize the importance of meeting obligation and expenditure schedules in fiscal year 1997.

In following discussions, the term "expenditure" is substituted for "accrued expenditure."

GENERAL INVESTIGATIONS

Scheduled expenditure for the General Investigations (GI) Program in fiscal year 1996 was $162 million. We spent $147 million, or 91 percent of this, and 80 percent of funding available. Performance based on funding available surpassed that of the preceding four years.

Scheduled report production for the program in fiscal year 1996 included 52 reconnaissance and 25 feasibility reports. The performance goal for reconnaissance reports was completion of 47 of the 52, or 90 percent, within the 12–18-month legislative time frame. We completed 51 for a performance result of 98 percent. The performance goal for feasibility reports was completion of 20 of the 25, or 80 percent, within the four-year regulatory time frame for reports of cost-shared studies. We completed 24 for a performance result of 96 percent.

Scheduled expenditure for the GI Program in fiscal year 1997 is $161 million. Our goal is to expend 95 percent of this amount. Based on first quarter results, we will exceed that goal.

We continue to streamline the study process. New start reconnaissance studies are being budgeted and funded at the $100,000 level and prosecuted under the Expedited Reconnaissance Study Program. Additional steps will be taken to shorten the time and reduce the cost of feasibility studies.

The President's Budget provides for $150 million in new funding for the GI Program. The outlook for program workload is healthy. We will continue striving to enhance our performance during these times of limited resources.

CONSTRUCTION, GENERAL

Last year we scheduled and expended $1.10 billion and carried an unexpended balance of $279 million over into fiscal year 1997. This unexpended carryover was significantly less than our historical average. Moreover, it included $154 million earmarked in law for specific activities or projects which could not be accomplished that year.

In fiscal year 1997, $1.36 billion was available for expenditure in the CG account at the beginning of the year. Expenditures scheduled for this year total $1.10 billion, leaving $250 million to be carried over into fiscal year 1998. Again, this is significantly less than our historical average. At the end of the first quarter expenditures were on schedule at $204 million.

The President's Budget provides for $1.39 billion in new funding for the CG Program in fiscal year 1998. It also provides for advance new obligation authority of $576 million for the four-year fiscal year 1999–2002 period for completion of 65 specifically authorized projects scheduled for completion during that period. Of the fiscal year 1998 amount, $380 million is for full funding of 12 new starts and other new work projects, and an undetermined number of new starts under the Continuing Authorities Program (CAP). These new start funds will be expended over the five-year fiscal year 1998–2002 period. The balance of $1,013 million, reflecting reduction for savings and slippage of the total program, is for specifically authorized continuing projects and remaining items, including projects under CAP. About $978 million of this is for specifically authorized projects.

We expect to expend $1.16 billion in fiscal year 1998, and to carry over about $490 million unexpended into fiscal year 1999. About $328 million of the carryover will be used to complete the fully funded fiscal year 1998 new starts, including any under CAP. The rest represents the balance of funding for Congressional adds not completed in fiscal year 1998.

OPERATION AND MAINTENANCE, GENERAL

In fiscal year 1996, we expended 94 percent of funds available for expenditure to operate and maintain water resources projects for the benefit of navigation, flood damage reduction, hydropower generation, recreation, and environmental stewardship. Our normal workload was financed with the $1.7 billion regular appropriation. In addition, we received a $30 million emergency supplemental appropriation to repair projects damaged by flooding in the Northeast and Northwest parts of the Nation at the end of 1995 and in early 1996.

Our fiscal year 1997 O&M Program performance is off to a good start and should equal or exceed that of fiscal year 1996. The regular appropriation is once again $1.7 billion. This has been augmented by another emergency supplemental appropriation, this time of $19 million, to fund repair of projects impacted by Hurricane Fran in September 1996. Our projects have also been damaged by other natural disasters, including more flooding in Western states, Tropical Storm Josephine, and Hurricane Dolly.

On March 19, 1997, the President submitted an emergency supplemental funding request to Congress for $39 million. This request has been subsequently modified by our updated estimate of costs related to recent flood disasters, bringing the total request to $112 million. This amount would be used to repair facilities damaged by winter flooding in the Pacific Northwest, California, and the Ohio and Mississippi and River Basins, as well as facilities damaged by other natural disasters.

Fiscal year 1998 performance is expected to be on a par with, or greater than, that of fiscal year 1996. We are working on ways to constrain the growth of the O&M Program in order to achieve a balance in the overall Civil Works Program, explained below, under Balancing New Construction and O&M.

FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES

In fiscal year 1996, we expended 98 percent of funds available for expenditure on the MR&T Project. Of the unexpended funds, $4 million was left unobligated with an additional $7 million obligated but unexpended. The unobligated carryover was about 1 percent of new budget authority for fiscal year 1996.

We anticipate excellent financial performance on the MR&T Project in fiscal year 1997.

Updated estimates since the President's March 19 emergency supplemental request to Congress contain $13 million for the MR&T account. This amount would be used to pay for emergency operation activities in fighting winter flooding in Louisiana and other Mississippi River Basin states and to repair federal levees and other facilities damaged by the flooding.

The President's Budget request for $266 million in new funding for the MR&T Project continues the recent downward trend of funding for this program. We anticipate completion of the Yazoo Basin Demonstration Erosion Control work in Mississippi, and transferring implementation of any remaining work to the local sponsor.

REGULATORY PROGRAM

The President's Budget provides for $112 million in new funding for the Regulatory Program. The increase of $11 million over the fiscal year 1997 appropriation is necessary to maintain a high level of service to the public and to continue implementation of the President's Wetlands Plan of August 1993.

Requested new funding supports a labor intensive initiative to increase the roles of States and local entities in wetlands regulation through development of programmatic general permits. This will enable State and local entities to handle permitting responsibilities for specific activities in certain areas, which will greatly reduce Corps workload. Funds will also be used to develop special area management plans for environmentally sensitive geographic areas and watersheds.

Additionally, requested new funding supports a program, authorized in WRDA90, to certify individuals as wetland delineators in order to improve quality of jurisdictional determinations by private consultants and reduce need for Corps verifications in the future.

As mentioned earlier, we propose a new special fund for the Regulatory Program, with collections to be derived from fees to the cost of processing and evaluating permit applications for commercial activities. These fees would only be assessed against commercial applicants, and would be assessed on sliding scale in accordance with the complexity of the permit evaluation. No fees would be assessed against private landowners. We estimate that collections for this fund would amount to $7 million in fiscal year 1998 and increase to $14 million, annually thereafter.

FLOOD CONTROL AND COASTAL EMERGENCIES

The President's Budget provides for $14 million in new funding for the Flood Control and Coastal Emergencies (FC&CE) Program. This is sufficient for administration of the Disaster Preparedness and Emergency Response programs, in the absence of major events. Such events requiring extraordinary flood-fighting or subsequent repair of damaged water management facilities, would necessitate additional funding from the proposed contingency fund. The President's Budget proposes the establishment of a contingent emergency reserve to fund anticipated needs arising from both natural and man-made disasters. This fund would be used by the Departments of Agriculture, Interior, and Transportation, the Federal Emergency Management Agency, the Small Business Administration, and the Corps to cover costs that exceed budget assumptions for these types of requirements.

Under this program, we provide leadership and expertise in preparation for and response to disasters throughout the Nation. Since receiving our emergency mission in 1941, we have developed and sustained an engineering organization capable of responding to both natural and technological disasters, such as hurricanes, floods, earthquakes, and oil spills. This mission also entails supporting deployed U.S. Forces and accomplishing reimbursable work for other agencies, particularly, the Federal Emergency Management Agency.

Recently, we responded to several natural disasters, including the Northeast and Northwest Floods of 1996, and Hurricanes Bertha and Fran along the Atlantic

coast. We are working to restore flood protection and normalcy to distressed communities in the Western United States, especially in California, recently ravaged by severe flooding. Damage assessments will continue as the floodwaters recede.

On March 19, 1997, the President submitted an emergency supplemental funding request to Congress for $252 million. The March 19 request has been subsequently modified by our updated estimates of $25 million for additional needs, bringing the total request to $277 million. This amount would be used to pay for emergency operation activities in fighting winter flooding in western States, including California, Idaho, Oregon, and Washington; to repair federal and nonfederal levees that are in the Corps program damaged by this flooding; and to implement nonstructural alternatives to levee repair, as appropriate. It would include $75 million in contingency funding for natural disasters, including potential spring flooding in northern California, the Northwest, and the Midwest. The supplemental also requests authorization of construction of an emergency outlet at Devils Lake, North Dakota, and appropriation of $2 million to begin construction of the emergency outlet. The supplemental request also includes an advance appropriation request of $30.5 million to complete construction in fiscal year 1998 of the emergency outlet. While the Secretary is urged to expedite the process, the project must fulfill all NEPA requirements, meet all obligations under the 1909 Boundary Water Treaty with Canada, and consider the views and sovereignty of the Spirit Lake Nation.

Additionally, we supported security and contingency planning for last Summer's Olympic Games in Atlanta, and, currently, are providing support for U.S. forces in Bosnia.

GENERAL EXPENSES

The President's Budget provides for $148 million in new funding for GE, allocated approximately 70 percent, 20 percent, and 10 percent for labor, fixed, and discretionary costs, respectively. It includes funding for deployment of CEFMS at the remaining four division offices.

The budget supports projected staffing of 1,257 FTE's in the 8-division organization. This represents less than 5 percent of the Civil Program workforce, and includes headquarters staff of less than 500 FTE's, representing less than 2 percent of the workforce.

BALANCING NEW CONSTRUCTION AND O&M

Consistent with reducing discretionary spending to balance the federal budget, we expect that funding for the Civil Works Program will be constrained into the foreseeable future. In light of this, we are challenged to prioritize our work in order to distribute, or "balance," funding among programs, especially those providing for construction of new water resource management facilities, on the one hand, and for care of existing facilities and facilities under construction, on the other.

Programs providing for construction of new facilities include the CG Program and construction part of the MR&T Project. Programs providing for care of facilities, existing and scheduled to come on line, include the O&M Program and maintenance part of the MR&T Project.

Presently, we are addressing this challenge by reviewing the O&M Program for cost saving opportunities. In the coming months, we will be exploring ways of working within constrained resources to provide justified levels of service. Our goal is to align provided and demanded levels of operation and maintenance service.

CORPS VISION AND STRATEGIC PLAN

Finally Mr. Chairman, I would like to present, briefly, the new Corps Vision and Strategic management plan. The Corps is a great organization with a long proud history. But, every organization needs to be challenged to improve and must adapt to the many changes occurring in our Nation at every level. We need to have an end state in sight and a road map to get there. Here is our Vision for the Corps.

The U. S. Army Corps of Engineers is:

—the world's premier engineering organization, trained and ready to provide support any time, any place.

—a full-spectrum engineer force of high quality, dedicated soldiers and civilians: a vital part of the Army; the engineer team of choice—responding to our Nation's needs in peace and war; and a values-based organization—respected, responsive, and reliable.

—changing today to meet tomorrow's challenges!

As you can see, the Vision touches on many different areas. All of these are important, but several are critical. The first of these is to focus on our customers, as embodied in "The Engineer Team of choice." The second is to build on the successes

in responding to our Nation's needs in peace, with the Civil Works Program being the cornerstone. The third is to become more relevant to the Army, where our roots are.

This Vision and Plan were arrived at through a rigorous ongoing program, which will continue for my entire tenure. The team that helped me to develop this consisted of employees and commanders at every level, customers from both the Civil Works and Army side and other stakeholders in our success. The resulting strategic management plan, augmented by the campaign plans, will start moving us toward that Vision. You can expect a series of changes over the years, that will keep what is good, significantly improve some weak areas, and posture us for the next century.

CONCLUSION

The President's Budget for the Corps of Engineers provides stable funding with a balance among competing priorities. However, we must continue to find ways to reduce our costs and shift more of those remaining to direct beneficiaries of our services. Meanwhile, we will do our very best to execute the Civil Works Program for maximum benefit of the Nation.

We have a long history of improving production of the Civil Works Program and achieving greater customer satisfaction, while conserving resources. A recently passed milestone in this history was formalized Corps-wide institution of project management, given impetus by nonfederal cost sharing requirements of WRDA86. This led to marked improvement in program execution and greatly improved partnerships with state and local governments.

Lately, we have been improving business processes, including the decision document review and approval process, project cooperation agreement execution process, and partnering process. Improvements adopted have eliminated duplication of effort; empowered districts to accomplish work formerly done at higher levels; expedited policy and nondepartmental reviews, yielding more timely answers for districts; and preset compatible goals for stakeholders in projects, enabling win-win outcomes with less rework, claims, and lawsuits. These improvements have further improved our production and customer satisfaction, while, simultaneously, enabling us to participate significantly in ongoing efforts to downsize government.

And now, my Strategic Plan commits us to dramatic improvement in performance and customer satisfaction within available resources, with a goal of revolutionizing our effectiveness in problem solving—continually maximizing actual and potential values of our organization to the Civil Works Program and the Army, and, thereby, the Nation. This, in conjunction with our ongoing implementation of GPRA, promises even greater improvements in future business operations.

Finally, the Energy and Water Development Appropriations Act, 1997, challenges us to accomplish a large workload in the current year. I am confident in our ability to meet that challenge, in continuing to benefit our great Nation.

Thank you Mr. Chairman and Members of the Committee. This concludes my statement.

FISCAL YEAR 1998 DIRECT PROGRAM FUNDING

[New obligation authority in thousands]

Source/account	Fiscal year		
	1996 actual	1997 assumed	1998 requested
Appropriation:			
Discretionary: General Investigations	$121,767	$153,872	$150,000
Construction, General:			
General Fund (Finally):			
Incremental Funding	744,447	1,003,255	949,015
Full Funding			374,050
Total	744,447	1,003,255	1,323,065
Harbor Maintenance Trust Fund:			
Inland Waterway Trust Fund:			
Incremental Funding	58,750	78,687	63,985
Full Funding			6,200

FISCAL YEAR 1998 DIRECT PROGRAM FUNDING—Continued

[New obligation authority in thousands]

Source/account	Fiscal year		
	1996 actual	1997 assumed	1998 requested
Total	58,750	78,687	70,185
Total (General Fund, Initially)	803,197	1,081,942	1,393,250
Operation and Maintenance, General:			
General Fund (Finally)	1,184,674	1,167,743	1,098,400
Harbor Maintenance Trust Fund	523,607	519,272	489,600
Special Recreation User Fees Fund	22,298	29,000	30,000
Total (General Fund, Initially)	1,730,579	1,716,015	1,618,000
Flood Control, Mississippi River and Tributaries	307,434	310,374	266,000
Regulatory Program:			
General Fund (Finally)	101,000	101,000	105,000
Proposed Permit Fees	.....	.....	7,000
Total (General Fund, Initially)	101,000	101,000	112,000
General Expenses	151,500	149,000	148,000
Flood Control and Coastal Emergencies	145,000	10,000	14,000
Oil Spill Liability Trust Fund	850	.....	.....
Total (General Fund, Initially)	3,361,327	3,522,203	3,701,250
Mandatory:			
Permanent Appropriations	12,324	13,271	13,075
Coastal Wetlands Restoration Trust Fund	38,372	43,000	44,000
Rivers and Harbors Contributions	174,907	198,900	123,086
Total	225,603	255,171	180,161
Total	3,586,930	3,777,374	3,881,411

NEW ARMY CORPS TEAM

Senator DOMENICI. Thank you very much. General Fuhrman, I understand you have no statement.

General FUHRMAN. No; I do not, sir.

Senator DOMENICI. What we have got is almost a whole new top leadership team, correct, 8 months old.

General BALLARD. About 8 months for me, sir.

Senator DOMENICI. The Secretary is more than that.

Mr. LANCASTER. But not much.

Senator DOMENICI. A year, they say. Is that about right?

Mr. LANCASTER. About 16 months.

Senator DOMENICI. Let me recognize the presence of Senator Kohl. Would you like to make a statement?

STATEMENT OF HERB KOHL

Senator KOHL. I have a couple of questions, Mr. Chairman.

Senator DOMENICI. Do you need to go somewhere at a time certain?

Senator KOHL. I would just take 5 minutes.

Senator DOMENICI. Proceed.

Senator KOHL. Thank you, Mr. Chairman. I am delighted to be a member of this committee. I appreciate having the opportunity to work with you and members of the committee.

Senator DOMENICI. It is a pleasure to have you on board.

FOX RIVER LOCKS, WI

Senator KOHL. General Fuhrman, as you know, in my State of Wisconsin, we have a system of very historic locks called the Fox Locks, which have been a navigation project operated by the Corps of Engineers since 1872. Currently, the locks continue to be significant from a historic and recreational boating perspective, but commercial use of the locks is now less significant. The Corps has proposed to turn over the locks to the State of Wisconsin, to let the State and the Fox River communities decide what to do with the system. The problem is that the locks, under prior management, have been allowed to fall into a state of disrepair, and the cost of rehab and/or closure will be very high.

I understand the State of Wisconsin and the Corps of Engineers have been in negotiations over this issue of disposition of the locks, however, the main question of how much funding the Corps will be offering to the State when the locks are turned over is still not resolved. Can you tell us the status of those negotiations and the time line for letting the Wisconsin negotiators know how much funding the Corps is offering to compensate for the transfer?

General FUHRMAN. Sir, the Detroit district engineer has sent a letter to Mr. George Meyer, the secretary of the Wisconsin Department of Natural Resources, just a couple of days ago. This letter provides the best estimate of the maximum potential lump sum settlement the Federal Government could provide to the State of Wisconsin for assuming responsibility for all or part of the navigation portion of that system, sir.

LAFARGE DAM, WI

Senator KOHL. All right. One other question, General Fuhrman. In the mid-1960's, Congress authorized the Corps of Engineers to build a flood control dam on the Kickapoo River at Lafarge. In order to proceed with the project, the Corps of Engineers condemned 140 farms, covering an area of about 8,500 acres. To Lafarge, a community of only 840 people, that is a significant loss. With the loss of economic activity, the community eagerly awaited the completion of the dam and the creation of a lake that promised to provide some economic benefits in the form of recreational and tourism activities. But because of budgetary and environmental concerns the project was never constructed and the people of Lafarge were left holding the bag.

We now have a solution to the problem, and it involves returning the land back to the State of Wisconsin for the creation of a large preserve. A provision was included in last year's water resources bill to authorize this land transfer, and a small amount of funding to accompany the transfer. A small amount of funding was pro-

vided in fiscal year 1997 for preliminary work on this project. Since it is the assumption of most all parties involved that a larger amount of funding will be provided for the process in 1998, I was alarmed to see no money requested in the Corps' 1998 request.

It is my intention to request funding for this project for 1998. Would you explain why no funding was included in the Corps' budget request?

General FUHRMAN. As you are aware, Senator, in 1997 the Appropriations Committee authorized $20,000 for us to gather data and do preliminary work with the State of Wisconsin and various Federal, State, and local interests. In addition to that, we have reprogrammed an additional $75,000 into that effort in fiscal year 1997 to move forward with that.

From the 1998 perspective, it is a matter of budget priorities. Subject to the usual qualifications our capability for that work would be about $450,000.

Senator KOHL. If Congress provides funding in 1998, you will cooperate with that?

General FUHRMAN. Yes, sir.

Senator KOHL. All right, that would be fine.

Senator DOMENICI. What he is saying, Senator, is that they could only use $450,000 this year. That is what he is telling you.

Senator KOHL. But there was no funding requested in 1998.

Senator DOMENICI. So, if we get $450,000 for you, that is the full capability that they could apply to the project. I did not say when we get it yet, I said if.

Senator KOHL. Can I count on it, Mr. Chairman, in 1998?

Senator DOMENICI. Well, let us see what we can count on you for. [Laughter.]

Senator KOHL. Thank you, Mr. Chairman. I have another question, but I will insert it in the record. I thank you very much for your support.

Senator DOMENICI. Sorry about your basketball team this year.

Senator KOHL. Yes, well, as we always say, there is next year.

Senator DOMENICI. You do a great job. I do not know how you can put up with this for so long, but it is sort of like me trying to get a balanced budget

Senator KOHL. Well, I will tell you one thing. We did not do badly this year because I do not pay them enough. They get paid in full.

Thank you, Mr. Chairman.

Senator DOMENICI. Senator Craig, do you have some questions?

Senator CRAIG. Mr. Chairman, I do. But, I think both you and I want to leave at about 10:45, do we not?

Senator DOMENICI. Shortly around there. When I have to leave, if nobody else is here—I understand Senator Byrd will be here shortly, and we will let him go as acting chairman for as long as he wants.

RECENT IDAHO FLOODING

Senator CRAIG. Mr. Chairman, I will have several questions then that I will submit for the record, but let me very quickly say that the Army Corps and I and the State of Idaho have a close working relationship. We got a lot closer in the last 2 years with two major

flood incidents, one just concluded in early January in 13 counties. In fact, it is interesting to note that the Army Corps was on the ground in a small community in north Idaho last night because we were flooding again. So, while it was not as dramatic, certainly, as what is going on in the Dakotas, it is dramatic for the citizens of Julietta. I must say for the record that Lieutenant Colonel Curtis in Walla Walla has been a delightful man to work with. He has been most responsive.

We have got several situations, though, and one of them—and I say this, Mr. Chairman, and I think it responds to, General, your reorganizational concerns and how that gets handled. In early January, we had several major counties under water. We had our major north-south highway breached in nine locations. Idaho and the Pacific Northwest was besieged by a Chinook climatal transition, warm, lots of rain, and lots of snow. The community of Emmett, the city of Emmett lost a major dike, and some limited flooding occurred. In some instances major flooding occurred.

But the dike had to be quickly rebuilt. This was a dike that, when reviewed by the Corps, the levee itself I should say, when it looked at the benefits of fixing the levee outweighed the cost by about a 16-to-1 ratio. Yet it took, from the time of the incidence, from the time the city itself requested assistance, it took a grand total of 52 days. Now, that does not seem like a lot, I guess, in the mix of things. But this was January, and it was still snowing and raining, and the major run off is about to occur in Idaho now, my mention of flooding last night. So what had happened was a unique situation that deserved tremendously quick response. We got it done. Fortunately we got it done. We could have had flooding within just a few days or weeks later.

I only use that as an example to suggest to you that areas for approval, levels of approval from the time the district office signs off, such as Walla Walla, to review the field officer's recommendations and make approval of emergency work—I guess is it necessary that it goes to Seattle and then it comes to Washington? I mean, in these instances where it is everyone's obvious recognition of the problem and the ratios are tremendously high, yet I got on the phone here encouraging the Washington office to get with it. It just so happened that at the time I was doing that, the applications were on the desk, approval was being made.

But my point is 2 months, just about 2 months at a time when this city is basically exposed and bare to its needs to repair a problem. So, I wish you would look at that. I have talked with Colonel Curtis about it. I have to think there are times when these actions can move along a good deal more quickly.

General BALLARD. Senator, I appreciate your comments. If I recall correctly, I think you and I talked about this on the telephone.

Senator CRAIG. Yes, we did.

General BALLARD. I am looking into that. It is an area that concerns both the Secretary and I on how quickly we address situations of this nature. I will take your comments under advisement. We will definitely consider how we can speed some of these processes along.

Senator CRAIG. Well, I appreciate that, because response, especially in communities where a levee is down and they are bare to

exposure of an additional run off coming—I mean, there are just circumstances where the normal process does not fit. There are times where it should fit.

LEVEE MAINTENANCE REQUIREMENTS

Here is another problem—a year ago in February, another major flooding incident in north Idaho, the community of St. Mary's underwater, aerial photos of it. I was over it in Army helicopters looking at it, and on the ground with Senator Kempthorne and Congressman Chenoweth. Same situation as Grand Forks, hundreds of homes under water, major levees breached in a better than 100-year flood. The community of St. Mary's received a block grant from the Economic Development Administration to fix two severely damaged levees in the middle of the town. A condition of the grant was that the levees' repair met Corps of Engineers standards. As a result, all trees greater than 2 inches in diameter were removed from the levee.

IMPACT OF ENDANGERED SPECIES ACT ON LEVEE MAINTENANCE AND REPAIR

Since then, U.S. Fish and Wildlife Service got into it, Audubon Society got into it, section 7 ESA consultation process began. A year later, we are seeing that situation now at near flood stage again, and we are in a battle over trees and habitat. I think we are going to get it worked out, but my point is we could have destroyed a lot of people's properties again.

While I know this problem was not caused by the Corps, I would appreciate any comments you have and an analysis of the effects of the Endangered Species Act on your ability to respond quickly. First off. And second off, are you aware of the legislation in the House that would exempt flood control activities from the Endangered Species Act, and has the Corps taken a position on it?

General BALLARD. I think this requires a two-part answer. I will give you my answer to your questions, and defer to the Secretary for any additional comments he may have. First of all, we support the Endangered Species Act.

Senator CRAIG. Sure, we all do.

General BALLARD. Now, there are some cases where the act has precluded effective maintenance of some of our flood control projects, and it is a matter of sequence and the timing of when we do that work. That has occurred.

Senator CRAIG. I would suggest that the loss of the levee in Emmett this year was probably a result of the inability to get instream and do necessary maintenance over the last decade. We had tremendous buildup and movements of gravel bars and that kind of thing in a flood prone area, and we just simply cannot get to them anymore. Now we are thousands, if not millions, of dollars later, additional property damage and some loss of life, still trying to figure out a way to get around it.

General BALLARD. We are currently evaluating that. I would tell you that it is my opinion that there have been cases where the Endangered Species Act has possibly impacted on our maintenance capability. We have not determined or seen any indication, at least that I am aware of, where the act has contributed to failure of a

project due to a lack of maintenance. We are currently assessing that.

The other part of your question is whether or not I am supportive of an exemption, I think?

Senator CRAIG. Exemption—there is a piece of legislation in the House now that would exempt flood control activities from ESA.

General BALLARD. Mr. Secretary.

Senator CRAIG. First of all, it is very nice to see you again, Secretary Lancaster.

Mr. LANCASTER. Good to see you. First of all, we believe that we are not inhibited in emergency work by the Endangered Species Act, because there are waivers that exist which allow us to take immediate action, and then to catch up the ESA provisions following the emergency. We believe that that is adequate for us to meet our emergency needs, and do not believe in the California instance, which is the impetus for this legislation to which you refer, we do not believe in any case were we inhibited in our doing the work, the emergency work necessary.

Our concern with that legislation is the breadth of that language is such that in our opinion it will completely abrogate the Endangered Species Act in a wide range of activities that have nothing to do with emergencies, because ongoing maintenance, ongoing construction of new flood control structures that would be totally exempted from the Endangered Species Act we believe is far broader than is necessary to respond to emergency work, especially in light of the fact that we believe that emergency work has not been hampered in any way by the ESA. So we would oppose that legislation as being overly broad and not necessary to respond to emergencies.

Senator CRAIG. Martin, one of the things that is happening on the ground, two instances, ESA and the Clean Water Act—in the instance of ESA, the word on the ground is the moment a flood happens, go like heck. Get in the stream, fix it, and get out before the Feds get there, because you will be stopped. Or the window is closed of the emergency, no longer does the incident of the emergency occur, now we are in the rehab stage. And the moment we go to rehab, or reshaping, then we fall under all these structures. That is clearly an attitude on the ground. I have been involved in conversations where the word on the ground is go for it, get in there, redo that thing, rechannel, restructure before we have to fall under this thing, and then nothing will get done for 1 year or 2 or 3, and cost later.

The second thing is—and I will say, General, your people on the ground comment to me about it, the inability to get in-stream, redirect water because of gravel bar buildup over decades and does put levee structures at risk. Levees that you constructed, that are under your auspices. The inability to get in the stream or to get the permit to do that kind of thing is inhibiting, and in my opinion probably this year on the Payette and the Weiser Rivers in Idaho ended up costing us money, a loss of marvelous agricultural ground, because of the buildup over the last decade in those rivers where we could not get in and do the appropriate management.

Mr. Chairman, I have taken enough time. I will have other questions. Thank you, gentlemen.

ENDANGERED SPECIES ACT WAIVER

Senator DOMENICI. Thank you very much. Let me be very precise on this issue Mr. Secretary. On repair of levees and the like that have been damaged and are in need of repair because of flood, do you oppose waiver of the Endangered Species Act for a reasonable period of time?

Mr. LANCASTER. Mr. Chairman, it is our belief that we have that waiver authority already, and that further broadening of that authority is not necessary.

Senator DOMENICI. I did not talk about broadening it. I talked about that. And you do support that on the basis that you think you already have that authority?

Mr. LANCASTER. We believe that we already have it, Mr. Chairman.

Senator DOMENICI. OK. How long do you think that exists for you now?

Mr. LANCASTER. For doing the initial work necessary to repair——

Senator DOMENICI. What if that takes a long time, 3 years, 2 years—do you still have it for that period of time if it takes that long?

Mr. LANCASTER. Well, during that time we believe we can respond to whatever requirements of the ESA occur, if it is going to be a long-term rehabilitation project. What we believe is necessary is to get in, as Senator Craig said, and to get the work done and get out before we get bogged down in these kinds of coordination. But if it is a 3 or 4 year project, then we believe that there is adequate time in a project of that nature to respond to the various requirements of the ESA.

MITIGATION REQUIREMENTS

Senator DOMENICI. I guess what is concerning some of us, and I understand the House in its counterpart bill is trying to address the issue, you may think what they are talking about is too broad, you may think it is not needed. But what if it happens that additional mitigation related to this repair work is required? Should we reach that point where we are talking about additional mitigation if we are just repairing the facility?

Mr. LANCASTER. Well, the waiver authority that we have now allows us to do the emergency work immediately, and then to do whatever mitigation is required by the interagency process, dealing with Fish and Wildlife and other agencies after the fact. The authority that we have now does not waive the requirement for mitigation later, it simply allows us to do the work immediately and then to take whatever mitigation actions are needed after the fact.

Senator DOMENICI. I guess the fundamental question is why additional mitigation would be necessary. Did we not have a structure constructed and mitigated under the Endangered Species Act? If we repair or replace it, why should there be additional mitigation?

Mr. LANCASTER. Well, oftentimes we are not replacing it with exactly the same structure that existed before the storm event. In some cases it is, in fact, a modification.

LEVEL OF THE CIVIL WORKS PROGRAM

Senator DOMENICI. We will get into that in more detail. I have two questions, and then I am going to, from my standpoint, leave. As I indicated, Senator Byrd has a series of questions for you, and I am going to turn it over to him.

Mr. Secretary, let me go through your statement a bit and see if I can clarify something. On page 2 of your statement you indicate that the amount requested by the President for Corps Civil Works Program for 1998 exceeds the 1997 appropriation by $180 million, but because of changes in financing procedures for new construction starts, the amount to be spent in 1998 is approximately $280 million less than 1997. Your statement also says that the President's budget proposes to cancel, rescind, about $50 million of 1997 construction with general appropriations to offset increases necessary in other high priority programs.

Now, this does not make sense to me. It seems to me you are saying it is going up, but it is really coming down. Which is it?

Mr. LANCASTER. It is going up because of the administration's proposal to full fund up front all fixed asset to investment, so that we are appropriating in advance the full cost of new starts. In some cases, of course, these funds will not be needed in the first year, but will be available for expenditure as needed so as to expedite the construction of these projects without the necessity of coming back for periodic appropriations. So that is the reason. It goes up because of the full funding up front of projects, but the amount that we will have available is less because some of that is not actually going to be spent in this first year.

Senator DOMENICI. OK. Now, we are not on board on this new process yet. I hope you understand that, this advance funding. First of all, what I look at is, if I look at your entire package, then the logical progression of that is that under full funding concept, which includes a $200 million wedge for new starts annually into the future, if that would leave the Corps at some point in time with a $200 million construction program down the line some place as projects underway are completed. Is this the formal goal of this administration?

Mr. LANCASTER. The administration's goal is, as is the case with many other Federal construction programs unrelated to the Corps of Engineers, to full fund up front all capital investment. The $200 million wedge is for the first time putting into our 5-year projection new starts, something that we have never done before. It may very well be that if full funding is adopted as a philosophy of the committee and of the Congress and it is determined that $200 million a year for new starts is inadequate, that that is a matter to be discussed as a part of the budget deliberations.

However, the approach that the administration is taking here is to put the Corps of Engineers on the same footing with other Federal agencies which do, in fact, fully fund their construction at the beginning of the project. We are one of the unique agencies that has had annual funding for many years.

Senator DOMENICI. A lot of us are not so sure we ought to get rid of the incremental approach to funding. Frankly, I want to make sure that if we were, and I am not suggesting this sub-

committee is going to do this, but if we were to go with this wedge funding scheme—fund all the new starts up front. I am not sure that we would not be committing that about $200 million is the total amount we will ever get, that this administration, at least for the next 3½ years, is going to say $200 is all you get, and I do not know that we would agree to that. I just want you to know I will not. This committee might, but I doubt it.

I hope that I have hit on a couple of points that you concur with me on, Senator Byrd.

Senator BYRD. You have, you have, Mr. Chairman, and I would say right on. I liked what I heard you say.

Senator DOMENICI. Thank you, Senator. I am going to proceed to this other meeting.

Mr. LANCASTER. We will be happy to discuss this full funding matter with the chairman more fully as we proceed down the road.

Senator DOMENICI. Fine. I want very much to make sure that the two people in the Corps know that for the next few months we want to work with you very closely. We do not have a big staff like you all, but we trust you for giving us honest numbers and information, and we are pretty good at it. We want to make sure we know where we are going, and we want to make sure we can tell Senators what is happening to their projects out there. That is very important to this subcommittee.

Mr. LANCASTER. Thank you.

FULL FUNDING OF NEW CONSTRUCTION

Senator BYRD [presiding]. Thank you, Mr. Chairman, and thank you, Mr. Secretary, and gentlemen, for your appearance and for your testifying. I want to pursue the line of questions that was last opened by the distinguished chairman, the financing of new construction projects by proposing to provide the full amount of funding up front. The proposal appears to fund a few selected projects while numerous other projects that are capable of proceeding are not funded. Now, I understand the argument for this new approach, but how do you think that this fixed asset initiative will contribute to improved control of cost, schedule, and performance goals on Corps projects?

Mr. LANCASTER. Senator Byrd, at the present time, not having full funding in place, it is necessary, with the incremental funding basis, to structure our contracts accordingly. If you have the money up front, you know that it is going to be in place when needed, you can structure your contract in a way that is not only more efficient, but also has greater certainty for the contractor. The theory is that, that being the case, the contractor will give a lower bid than if he has to prepare his contract on a basis that has contingencies for future reductions in funding or perhaps even in some years there not being funding for a multiyear project. If you have the money up front, then you can contract in a more efficient way, can pay out in a more efficient way.

As the Senator knows, we have a number of projects where the contractor moves much more quickly than anticipated, and when that occurs if only a certain amount of money is appropriated for that project and he is moving more quickly than the money is

available, we then have to reprogram funds from other projects rather than pay interest on that project.

Senator BYRD. Has not that approach worked very well during this period, especially during this period of tight budget constraints?

Mr. LANCASTER. We have tried to make it work as effectively as we could. The argument is that you can more efficiently plan these projects and more efficiently fund them if you have all of the money up front, rather than depend, as we must at the present time, on reprogramming or slowing up the project.

Senator BYRD. Has this new approach as of now ever been utilized before?

Mr. LANCASTER. It is, in fact, a process that is used in most Federal construction——

Senator BYRD. No; I am talking about in your area.

Mr. LANCASTER. As far as I am aware, Senator, it has not been used previously in the Corps.

Senator BYRD. My attention is being called to the fact that we have been doing it the current way for about 75 years.

Mr. LANCASTER. We are not aware of it being used in the Corps projects. It is used for other Federal agencies.

INFORMING CONGRESS OF PROGRESS

Senator BYRD. Yes; well, there is nothing inherent in the full funding initiative that will control costs. How do you propose to keep the Congress informed regarding the cost and schedules for projects if the agency does not have to come back and justify its funding each year?

Mr. LANCASTER. Well, we would assume, Senator, that when the Congress authorizes, first through the authorizing committees and then appropriates the funds, that it is their intention that the project be built, and we will simply build the project using the funds that have been appropriated and according to the contract signed. The hearing process, of course, would hold us accountable to doing just that.

Senator BYRD. So you think that Congress would be kept informed regarding the cost and schedules for projects if the agency does not have to come back and justify its funding each year?

Mr. LANCASTER. Mr. Chairman, we believe that if this funding scheme were used, that this would be an element of oversight as opposed to a request for funding on an annual basis. It would change the manner in which Congress received its information and had its oversight over our budget. It would not necessarily change the level of information that the Congress had, but simply the manner in which that information would be transmitted to the Congress. It would be an oversight hearing instead of an appropriations hearing.

Senator BYRD. Well, are you saying that appropriations hearings are not oversight hearings?

Mr. LANCASTER. No, sir; by no means. They are, in fact. But it would be in a different context. Instead of an annual request for funding there would be oversight hearings to determine, if it were determined that that was necessary, there would be oversight hear-

ings to determine if we were spending the funds according to the authorization in the appropriation for the fully funded program.

Senator BYRD. It seems to me that any cost overruns would be presented to the committee down the road if we proceed on this multiyear project basis with funding fully up front. Cost overruns would be presented to the committee down the road, and the appropriations committee would be faced with a fait accompli. The OMB will control the rate that the project could proceed through the level of outlays to the Corps, the level of outlays that the Corps is allocated each year.

So it seems to me to some extent this puts a wall between the Congress and its constitutional responsibility of oversight. We want to stay right on the scent, s-c-e-n-t, as an old hound dog hunter, right on the scent, up close, not let that scent grow cold. Do you want to comment further?

Mr. LANCASTER. No, Senator. I am a hound dog hunter too. [Laughter.]

Senator BYRD. General, do you have any comment on this?

General BALLARD. No, sir; I do not have anything to add to what the Secretary said.

Senator BYRD. The budget proposes that Congress appropriate $365 million to fund fully 12 projects in fiscal year 1998. What is the Corps' estimate as to how much of this $365 million can actually be expended in fiscal year 1998?

General FUHRMAN. About $50 million, sir.

Senator BYRD. Fifty million dollars? How would you see the rest of the $365 million, how would you see the flow of the remainder? Fifty million the first year would be expended, but $365 million would be appropriated. You see, we are not talking about full funding for a battleship or an aircraft carrier. How would you see the flow of the remainder? What would you see the second year?

General FUHRMAN. I do not have the numbers, sir, but that would be spread over 5 years, the remaining $315 million spread over the remaining 5 years.

Senator BYRD. Suppose you see the remaining $315 million is not going to be enough, you are going to run short. What happens then?

Mr. LANCASTER. It would be necessary then, as with all cost overruns, for Congress to appropriate the funds to complete—whether it is an aircraft carrier or a lock and dam project.

Senator BYRD. Do you not see the overruns being brought to the attention of Congress in the fifth year most of the time rather than in the second or the third year?

Mr. LANCASTER. There is certainly the potential for that, Senator, but again, it is the theory at least that the oversight hearings during that 5-year period would keep the Congress fully informed on the expenditure rate so that it would not be a surprise at the fifth year.

FULL FUNDING OF WRDA 96

Senator BYRD. Do you have an estimate of the total amount of funding necessary to fund fully all of the new project authorizations contained in the omnibus water authorization bill passed last year?

General FUHRMAN. The total is around $5.4 billion, of which $3.8 billion of that would be Federal dollars, sir.

Senator BYRD. If dollars remained constricted for the out-years, how would the administration determine which projects to fund fully in any given year when the vast number of authorized projects are taken into consideration?

Mr. LANCASTER. That would simply be, as is currently the case, a weighing on the part of the White House, of its priorities with the funds that are available. They would then be submitted in a request and it would be up to Congress to actually make the final determination by the appropriations process as to which of those projects would be fully funded and begun in any given year.

Senator BYRD. I happen to be of the old school that believes the determination of priorities remains here, not at the White House.

Mr. LANCASTER. The White House must, however, have its own priorities in the request. It is, as I have indicated in my most recent answer, up to the Congress to ultimately set those priorities, and I concur fully with the Senator's statement.

FATE OF LARGE PROJECTS

Senator BYRD. Another concern with the proposed policy is that it might create a disincentive to large capital-intensive projects such as inland navigation, for which a large project is the most effective solution. Would it be possible, Mr. Secretary, that the full funding approach would cause the organization to underengineer solutions out of a belief that such approaches would fare better in the quest for funding?

Mr. LANCASTER. Well, there certainly is, I guess, that potential. However, we believe that we have demonstrated in this budget request with the example of the Houston-Galveston Harbor a method in which very large projects can be segmented with requests in the budget for full funding of segments of the project as opposed to doing it all in one fully funded appropriations request.

Senator BYRD. So you think it would indeed be possible that the full funding approach might cause, might bring about an underengineering solution?

Mr. LANCASTER. I say there is always the potential for that. We do not believe that the Corps would do that, because we are an organization made up of professional engineers and planners. We would propose what we think is the very best solution to the problem, and would do so, if it were a very large project, in a way that could still fit within the fully funded philosophy.

IMPACT OF FULL FUNDING ON HELPING COMMUNITIES

Senator BYRD. I am asking a question now on behalf of Senator Domenici, the chairman. How does this proposal increase our ability to help more communities in need of infrastructure improvements or help, for example, commercial navigation to be more efficient and competitive in the world marketplace?

Mr. LANCASTER. That, of course, is not the objective of the fully funded philosophy. The philosophy is to more efficiently use the funds that are available for projects by allowing them to be built on a basis that gets the maximum amount of project for the dollars available. It may very well result in some communities getting

projects sooner than others, but in both cases, the community that gets the project first and the community that gets the project second, will get projects for less cost than if they were both to receive them but on a stretched out basis using incremental funding.

Senator BYRD. Mr. Secretary, you have stated the philosophical side. There is a practical side also. I think my question really had to do with that practical side, which we have to consider in this equation. There will be communities that will be in need of infrastructure improvements. There will be a need for commercial navigation to be more efficient and competitive in the world marketplace. So I am interested in philosophy and in the philosophy behind the administration's approach here, but I am also very interested in the day-to-day practical side of things, and I do not see this new approach as being conducive to our helping more communities in need of infrastructure improvements, and smaller projects, for example, that might be very, very vitally needed by smaller communities in rural areas.

So I am conveying my concern about the impact of this proposed policy. I think it will have an impact on the efforts of communities around the country to address their water resource management requirements. And while the administration is to be commended for at least acknowledging the need for new starts, I do not believe it is prudent at this time to fund a selected few while many other communities are forced to wait until funding becomes available.

Now, if we were not subject to the very strict discretionary caps, it might be possible to consider a new way of financing large public infrastructure investments. We are going to have some projects in West Virginia that we think are very important, and they are going to be pushed aside if this approach is used. I cannot be unmindful of that, philosophy aside. The consequence of fully funding a limited number of projects is to create further delay and opportunity for cost growth on other projects in the pipeline that are also needed and that are ready to proceed.

In West Virginia there are people who know that they will have to relocate as a result of the rehabilitation of the locks and dam at Marmet along the Kanawha River. Now that authorization is finally in place, the Corps' proposal to include funding to initiate real estate activities was cut out of the budget in order to shift resources to the fully funded projects. Now, I cannot explain this to my colleagues on the basis of philosophy, so I urge my colleagues to reject this policy which will have a few winners, but many losers.

Do you care to comment?

Mr. LANCASTER. No, Senator Byrd, I do not care to comment further.

Senator BYRD. General Ballard, do you care to comment?

General BALLARD. No, Senator, I do not care to comment.

MARMET LOCK AND DAM

Senator BYRD. Let us talk about Marmet Lock and Dam project, now that I have brought up the subject. The Corps is in the process of initiating a major lock replacement program at Marmet Lock and Dam along the Kanawha River. The Kanawha River might be referred to as a Ruhr Valley, when we think in terms of the giant

chemical industries that are in the movement of coal. This project was authorized in the Water Resources Development Act of 1996, but unfortunately the fiscal year 1998 budget includes funding only to complete the preengineering and design activities, and no funding is requested to begin the necessary real estate acquisition which must occur before construction can proceed.

If funding is provided, is the Corps ready to proceed with real estate acquisitions for those individuals whose homes and businesses must be relocated to accommodate this project?

General FUHRMAN. The answer to that, Senator, is yes.

Senator BYRD. What is the Corps' estimate of land acquisition that could be conducted in fiscal year 1998 if funding were to be provided?

General FUHRMAN. Subject to the usual qualifications, we could use $8 million for engineering and design, and land acquisition, sir.

Senator BYRD. Why were those funds not included in the budget?

Mr. LANCASTER. Again, Senator, it was necessary in order to achieve the allocations of funding within the Corps. Some needed projects of necessity had to be dropped out so that we would come within the allocation given to us.

Senator BYRD. Well, West Virginia has been in the dropped out category a long time in many respects, and I do not want to see us continue to be dropped out. I understand that funding was included in the Corps' initial request. Is that correct?

Mr. LANCASTER. That is correct, Senator.

Senator BYRD. But it was not included in the final amounts approved by OMB. Would Marmet have received funding in the fiscal year 1998 budget request if there were no full funding initiative?

Mr. LANCASTER. That, of course, Senator, is difficult to say. In our recommended budget it was present. If we had not been subject to this new funding philosophy, it is difficult to know what would have ultimately been approved for the request that was ultimately submitted to the Congress.

Senator BYRD. But does it not stand to reason that it would have stood a better chance of being included?

Mr. LANCASTER. Yes, Senator, because there would have been funds available for a broader range of projects if we had not fully funded those that are present in the request.

Senator BYRD. Thank you, Mr. Secretary. Let me say again I am disappointed in this new approach, because it is obvious that while the Secretary cannot say with definiteness that Marmet would have been included otherwise, it is also clear that, as the Secretary stated, it potentially might have made the grade. So, I am disappointed that the Corps' fiscal year 1998 budget does not include the funding necessary to proceed with real estate acquisition and other preconstruction activities at Marmet Lock and Dam. The people in that community are supportive of the work that is to be done there, I understand. Does the Corps know of any objections from people in the locale?

Mr. LANCASTER. Senator, it was my pleasure to visit Marmet last year and to meet with the people there. There appears to be broad and deep support for this project in the community.

Senator BYRD. The people in that community are anxious to have the uncertainty which has clouded their lives removed, and I will

do whatever I can do to ensure that the fiscal year 1998 Energy and Water bill provides sufficient funding to allow the Corps to get on with the business of acquiring properties and allowing my constituents to relocate so that the project can get underway.

GREENBRIER RIVER FLOOD WARNING SYSTEM

Now, if we might shift to the Greenbrier River. Last year this committee agreed to provide the funding necessary to install early flood warning systems in the Cheat and Greenbrier River basins. These are intended to be interim measures while the Corps continues to assist these communities as they seek to address their long-term flood control requirements. What is the status of your efforts to install these systems in the communities in these areas?

General FUHRMAN. Senator, equipment will be procured, and it is scheduled for installation beginning in October 1997.

Senator BYRD. The Corps of Engineers is in the process of completing phase 2 of its evaluation report regarding possible flood control protection for the Greenbrier River basin. This assessment will reflect information updated following the devastating floods that occurred during 1996. Is the Corps still on schedule for completion of the report this fall?

General FUHRMAN. Yes, sir; that is still scheduled for October 1997 also.

Senator BYRD. Do you anticipate being able to provide an array of alternatives for the local communities to consider in evaluating how best to address their flood protection requirements?

General FUHRMAN. Yes, sir.

Senator BYRD. Do you anticipate that the Corps will endorse one of the alternatives, or would it simply provide comparable information regarding each of the options?

General FUHRMAN. What we would like to do, sir, is develop consensus within the community on one of those plans.

Senator BYRD. So you are not likely to present alternatives until that hope is realized?

Mr. LANCASTER. I think the report will be issued in October even if there is not consensus, but the hope is that consensus will develop around one of the recommendations.

Senator BYRD. If a local consensus then develops around one of the alternatives presented this fall, what will be the next step to address flood protection in the Greenbrier River basin?

Mr. LANCASTER. It would then be necessary, Senator, for an authorization to be requested for the project around which consensus has been built. And following that, of course, the appropriation.

Senator BYRD. If local opinion remains divided, and it is divided about how to proceed, what options are available to the Corps in order to continue addressing flood control requirements along the Greenbrier River?

Mr. LANCASTER. At that point, Senator, it would be up to the Congress to make that determination as to which project is to be authorized and funded. That would not be a prerogative of the Corps to make a decision for the community, but rather that its elected officials do that.

Senator BYRD. Absent any authorization to proceed with any alternative, would the Corps follow normal channels and conduct fur-

ther study if money were provided, and prepare a decision document for policy review by Corps headquarters and the Congress?

Mr. LANCASTER. If that were the manner in which Congress directed us to proceed, yes, sir.

Senator BYRD. Does the Corps have any cost estimate or a range of possible cost estimates for the various alternatives?

Mr. LANCASTER. At this point we do not, because we do not have the alternatives. As alternatives are developed, a measure of that would be an estimated cost.

Senator BYRD. This subject has been discussed with the Corps and with the people of the area involved. Are you saying that you do not have any estimates of the range of these cost estimates, because various alternatives have been discussed?

Mr. LANCASTER. That is a part of the process, Senator, to develop not only the alternatives but the costs, because the cost will affect the consensus which you are able to achieve in the community, because they will need to know what their cost sharing would be if cost sharing is required, and the nature of the recommendations so that they can balance the various elements of cost and effectiveness of the project.

Senator BYRD. Now, I have heard of options that range from $60 million to $125 million. Any comment?

Mr. LANCASTER. I do not have information with regard to that, but General Fuhrman may.

General FUHRMAN. I could not comment on the accuracy of those numbers.

Senator BYRD. General Ballard?

General BALLARD. No, sir; I am not privy to any estimates along those lines, sir. I would not care to comment on it.

Senator BYRD. Well, whatever the cost, and whatever the alternatives, and whatever the option exercised, it is going to become more expensive as time passes.

Mr. LANCASTER. That is why it is so important for consensus to be developed in the community, and we hope that the Corps can work with the community in developing that consensus.

IMPACT OF FULL FUNDING

Senator BYRD. If the new philosophy is implemented and goes into effect, how might it affect the situation we are talking about here in the Greenbrier Valley?

Mr. LANCASTER. That, of course, would depend on the total cost of the project and how that stacked up with other projects that were being considered by the administration in setting its priorities for requesting funds in subsequent years' appropriations.

Senator BYRD. If a project were to be selected, what would be the cost sharing requirements for construction?

Mr. LANCASTER. I assume it would be the normal 65–35 percent cost sharing established by Congress last year.

Senator BYRD. May I say, Mr. Secretary, I remain supportive of the efforts of the residents of the Greenbrier River basin to address their flood control needs, and in this respect I should recognize the efforts that have been put forth by Representative Rahall, Nick Rahall, who represents this particular district that we are discussing. He is very, very concerned, and he has made a proposal, I believe.

I have not endorsed any particular alternative, but have sought to ensure that the Corps of Engineers has the resources necessary to provide these citizens with adequate information regarding the alternatives.

Is the Corps to stay on schedule for the completion of the updated study this fall so that consensus hopefully can develop around a viable option? I share the desire of many of my people to have the studies come to an end and get on with the business of taking action to preclude the potential for future flood damages in the Greenbrier River basin.

REPROGRAMMING PROCEDURES

Now, with respect to reprogramming procedures, we are in a constrained budget environment. Nevertheless, project proponents are necessarily concerned about the impact that reprogrammings may have on donor projects as replenishment becomes more and more difficult. As a stalwart defender of Congress' role in determining spending priorities, I share that concern. What is your policy with regard to keeping Congress informed when the Corps needs to reallocate funds among projects?

Mr. LANCASTER. Senator, any reprogramming request exceeding the guidelines of the committee is immediately reported to committee, and committee then has the authority to act, if it chooses to do so.

Senator BYRD. Therefore, you consult with Members from the affected States, or do you just report any reallocations to the appropriations committee after the fact?

Mr. LANCASTER. We generally report when we make the reprogramming request. If there is any anticipation that there will be an adverse impact on a project, then we do attempt to discuss that with the Member affected. But in reprogramming, we try always to only reprogram from projects that cannot use the funds immediately and where we anticipate that the funds will be available by various means before those funds are needed. Oftentimes this has been the case. All of this year we have been struggling to meet the needs all over the country where there have been unanticipated disasters. We sometimes are scrambling for the dollars. We hope that we do not adversely impact any Member's project of interest, but if so then we do attempt to discuss that with the Member in advance.

Senator BYRD. I would expect to be informed of any reprogrammings that impact on West Virginia.

Mr. LANCASTER. Yes, sir.

Senator BYRD. Before the fact. General Ballard.

General BALLARD. Yes, sir.

Senator BYRD. I can appreciate the Corps' desire to retain as much flexibility as possible, but I must express my reservation about the consequences of too much flexibility absent congressional approval during a time when replenishment is so difficult. I encourage you and the Corps to make every effort to keep all those affected by possible reprogrammings informed so that we do not learn about these situations through panicked phone calls from our constituents who are often the local sponsors on these projects.

I have several other questions. I will submit those for the record. Is there anything that I should know at this point about West Virginia projects?

Mr. LANCASTER. Senator, I think you know all there is to know about West Virginia projects, so I would not even suggest that there is something you do not know that you should.

Senator BYRD. That is a very dangerous question. [Laughter.]

I hope you fully realized that, because that shifts the burden, you see.

ADDITIONAL COMMITTEE QUESTIONS

All right, the following Senators have questions which will be submitted for the record, Senator Reid, Senator Murray, Senator Burns, Senator Hollings, Senator Domenici, and Senator Byrd.

Senator BYRD. Do you have anything further?

Mr. LANCASTER. No, Senator. Thank you for your attention and time today.

[The following questions were not asked at the hearing, but were submitted to the Corps for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DOMENICI

MAJOR CHALLENGES FACING THE U.S. ARMY CORPS OF ENGINEERS OVER THE NEXT FEW YEARS

Question. Mr. Lancaster, General Ballard, and General Fuhrman, what are the major challenges facing the U.S. Army Corps of Engineers over the next few years, and what are you doing to meet those challenges?

Mr. LANCASTER. Consistent with reducing discretionary spending to balance the federal budget, we expect that funding for the Civil Works Program will be constrained into the foreseeable future. In light of this, we are challenged to prioritize our work in order to distribute, or "balance," funding among programs, especially those providing for construction of new water resource projects, on the one hand, and for care of existing facilities and facilities under construction, on the other.

Presently, we are addressing this challenge through review of the O&M Program for cost saving opportunities. In the coming months, we will be exploring ways of working within constrained resources to provide justified levels of service. Our goal is to align provided and demanded levels of operation and maintenance service.

Also, by improving the Corps' efficiency, we intend to make better use of the resources available to us.

General BALLARD. Mr. Chairman, the Corps is a great organization with a long proud history. But, every organization needs to be challenged to improve and must adapt to the many changes occurring in our Nation at every level. To this end, we need a guiding "vision." Our new vision is to be:

—the world's premier engineering organization, trained and ready to provide support any time, any place.

—a full-spectrum engineer force of high quality, dedicated soldiers and civilians: a vital part of the Army; the engineer team of choice—responding to our Nation's needs in peace and war; and a values-based organization—respected, responsive, and reliable.

—changing today to meet tomorrow's challenges!

All of these premises are important, and three are critical. The first is that we remain "the engineer team of choice," as determined by satisfied customers; the second is that we build on the successes of responding to our Nation's needs in peace, with the Civil Works Program being the cornerstone. The third is that we become more relevant to the Army, where our roots are.

The "strategic plan" for achieving our vision has been formulated through a rigorous ongoing program, which will continue for my entire tenure. The resulting plan, augmented by "campaign plans," will enable us to start moving toward that vision. You can expect a series of changes over the years that will keep what is good, significantly improve some weak areas, and posture us for the next century.

General FUHRMAN. Mr. Chairman: The President's Budget for the Corps of Engineers provides stable funding with a balance among competing priorities. However,

we must continue to find ways to reduce our costs and shift more of those remaining to direct beneficiaries of our services. Meanwhile, we will do our very best to execute the Civil Works Program for maximum benefit of the Nation.

We have a long history of improving production of the Civil Works Program and achieving greater customer satisfaction, while conserving resources. A recently passed milestone in this history was formalized Civil-Program-wide institution of project management, given impetus by nonfederal cost sharing requirements of WRDA86. This led to marked improvement in program execution and greatly improved partnerships with state and local governments.

And now, our strategic plan commits us to dramatic improvement in performance and customer satisfaction within available resources, with a goal of revolutionizing our effectiveness in problem solving—continually maximizing actual and potential values of our organization to the Civil Works Program and the Army, and, thereby, the Nation. This, in conjunction with our ongoing implementation of GPRA, promises even greater improvements in future business operations.

LEVEL OF SUPPORT THE CORPS' CIVIL WORKS PROGRAM HAS WITHIN THE ADMINISTRATION

Question. Mr. Lancaster, on page 2 of your statement you indicate that the amount requested by the President for the Corps' Civil Works program for 1998 exceeds the 1997 appropriations by $180 million, but because of changes in financing procedures for new construction starts, the amount to be spent for fiscal year 1998 is approximately $280 million less than fiscal year 1997. Further, it also states that the President's budget proposes to "cancel" (rescind) $50 million of fiscal year 1997 Construction, General appropriations to offset increases necessary in other, higher priority programs of the President in fiscal year 1997.

Mr. Secretary, the above statement seems to be contradictory to an earlier statement on page 1 which indicates that the President's budget supports a relatively steady funding level for the Civil Works program. Could you help the subcommittee better understand what level of support the Corps' Civil Works program has within the Administration?

Mr. LANCASTER. Given the President's plan to balance the federal budget by fiscal year 2002, the Corps' relatively strong budget and flat funding ceiling of nearly comparable magnitude in the outyears of its 5-year program are very encouraging. The plan provides adequate amounts for our traditional missions. It enables continuing, with few exceptions, ongoing planning, design, and construction projects. Additionally, it provides considerable funding for new construction starts in each of the five years, supporting the Corps' traditional, highly developed, and important role in water resources problem-solving for the Nation.

Full funding for acquisition of fixed assets will allow us to coordinate far more intensively, quickly, and effectively with local sponsors in determining optimum work and funding schedules based on capabilities and constraints of both parties. Both parties should benefit significantly—the Corps, because of more efficient work schedules; and the customer, because of greater certainty of financial obligation and faster delivery of needed facilities and expected benefits.

FULL FUNDING INITIATIVE AND ADVANCED APPROPRIATIONS PROPOSALS

Question. The budget request for fiscal year 1998 includes two, new major initiatives: one dealing with full funding new construction starts for fiscal year 1998; and the other involves providing advanced appropriations for fiscal years 1999 through 2002 to fully fund the Federal share to complete 65 continuing construction projects.

Why is a change of this type needed? What evidence, e.g. studies or analysis, support the conclusion that the historic incremental funding approach is flawed or has caused increased costs? What specific examples can you point to where incremental funding has caused project costs to increase?

Mr. LANCASTER. Mr. Chairman, incremental funding works quite well during times when budgetary ceilings match or exceed the needs of the continuing construction program. As projects complete, new projects take their place in the program. That is not the current situation, however. This year's budget preparation started with project schedules that were based on completing projects in the most efficient manner. However, after a portion of the fiscal year 1998 budget ceiling was set aside for new construction starts, high priority projects, and remaining items, the balance of available ceiling for the remainder of our continuing projects was approximately 62 percent of the funds needed to meet the recommended schedules. The result was stretched out project completions and increased costs due to inflation over the extended time periods as compared to the project schedules that could be achieved without funding constraints. Consequently, 170 projects had their sched-

ules and costs revised this year to reflect our constrained budgetary ceiling. This is the third year in a row in which such an adjustment has had to be made in a large number of projects. If these projects had been fully funded at the outset, they could have proceeded on the most efficient schedules possible.

Question. The logical progression under the full funding concept, which includes a $200 million wedge for new starts annually into the future, would leave the Corps with a $200 million construction program down the line as projects underway today are completed. Is this, in fact, a goal of the Administration?

Mr. LANCASTER. No, Mr. Chairman. The total Federal cost for new construction starts has averaged about $1.4 billion per year from fiscal year 1990 through fiscal year 1996. A $200 million per year cap would be significantly smaller than the recent average. This amount, however, was set to provide funds for new starts in the fiscal years from 1999 to 2002, when normal assignment of ceiling would have provided little or no funds for new construction starts.

Question. How do you respond to concerns that proposals such as these are just another way to reduce funding for the Corps' Civil Works program over time down to a level which can accommodate only a very small number of water resource development projects?

Mr. LANCASTER. In the past, new work was always considered to have a lower priority than the continuing program, and there were years in which either the executive or legislative branch did not recommend or fund new construction starts for budgetary reasons. The present proposal assumes that a predictable level of funding will be available every year for new construction starts, regardless of the progress in completing ongoing work. In that sense, it reverses historical priorities, and allows new investments to proceed in a fiscal environment that might otherwise discourage funding of new initiatives. It is very important that the Civil Works program continue to address new water resource problems and work with our present study sponsors to address identified problems

Question. How does this proposal increase our ability to help more communities in need of infrastructure improvements, or help, for example, commercial navigation to be more efficient and competitive in the world marketplace?

Mr. LANCASTER. We believe that full funding for these projects will improve our ability and that of local project sponsors to manage and complete projects on time and within budget. At the district level, there are a number of practical advantages. The most time and cost efficient sequencing of design, land acquisition, and construction can be followed. Lump sum fully funded construction contracts can be used, rather than incrementally funded continuing contracts. Local sponsors and contractors can be provided with firmer information about project schedules. Project slowdowns will be avoided due to insufficient incremental funding to award subsequent contracts. Clear accountability by districts for overall accomplishment of project construction on time and within budget is possible. The end result will be to allow our limited budget authority to be used on more badly needed projects than we can presently afford to pursue.

COMPLETION SCHEDULES

Questions. What impact do these proposals have on the completion schedules of other ongoing projects in the Civil Works program? Please provide for the record a list which shows the expected completion schedule for all construction projects for fiscal 1996, 1997, and 1998; along with a brief explanation of why the schedule has changes.

Mr. LANCASTER. As I indicated before, fiscal year 1998 new start proposals will have little or no impact on the completion of other projects because the schedules had already been stretched out for the ongoing projects and the new start projects were allocated additional budget ceiling over and above the ceiling without new starts to implement the full funding proposal. I will provide a list for the record.

[The information follows:]

CONSTRUCTION, GENERAL
COMPLETION DATE OF SCHEDULED WORK

PROJECT NAME	FY 95 CURR COMP DATE	FY 97 CURR COMP DATE	FY 98 CURR COMP DATE	REASON FOR SCHEDULE CHANGES
KAKE HARBOR, AK	NONE	30-SEP-1998	30-SEP-1999	FUNDING CEILINGS
BLACK WARRIOR AND TOMBIGBEE RIVERS, VICINITY OF JACKSON, AL	30-SEP-1996	30-SEP-2003	30-SEP-2002	INCREASED SCOPE AND FUNDING CEILINGS
TENNESSEE - TOMBIGBEE WATERWAY WILDLIFE MITIGATION, AL & MS	30-SEP-1996	30-SEP-1997	30-SEP-1998	DELAY DUE TO IDENTIFYING WILLING SELLERS
WALTER F GEORGE LOCK AND DAM, AL & GA (MAJOR REHAB)	NONE	30-SEP-2003	30-SEP-2002	FUNDING CEILINGS
CHANNEL IMPROVEMENT, AR, IL, KY, LA, MS, MO & TN	31-MAR-2010	30-SEP-2020	30-SEP-2020	FUNDING CEILINGS
DARDANELLE LOCK AND DAM POWERHOUSE, AR (MAJOR REHAB)	31-DEC-1998	31-DEC-1999	31-DEC-1999	SLOW CONTRACTOR EARNINGS
EIGHT MILE CREEK, AR	NONE	30-SEP-2003	30-SEP-2003	NO CHANGE
HELENA & VICINITY, AR	NONE	30-SEP-2001	30-SEP-2001	NO CHANGE
MCCLELLAN - KERR ARKANSAS RIVER NAVIGATION SYSTEM, AR & OK	30-SEP-2000	30-SEP-2005	30-SEP-2006	FUNDING CEILINGS
MISSISSIPPI RIVER LEVEES, AR, IL, KY, LA, MS, MO & TN	30-SEP-2008	30-SEP-2029	30-SEP-2031	FUNDING CEILINGS
MONTGOMERY POINT LOCK & DAM, AR	NONE	NONE	30-SEP-2007	NO CHANGE
ST FRANCIS BASIN, AR & MO	01-JAN-1999	30-SEP-2003	30-SEP-2004	FUNDING CEILINGS
TENSAS BASIN, AR & LA	01-APR-2013	01-APR-2013	01-SEP-2013	FUNDING CEILINGS
WHITEMAN'S CREEK, AR	31-AUG-1997	30-SEP-1999	30-SEP-1999	SPONSOR FINANCING AND FUNDING CEILINGS
CLIFTON, AZ	30-DEC-1996	01-JUL-1997	30-SEP-1998	SPONSOR FINANCING AND SECTION 902 PROBLEMS
AMERICAN RIVER WATERSHED, CA	NONE	NONE	30-SEP-2002	NO CHANGE
CORTE MADERA CREEK, CA	NONE	NONE	30-SEP-2000	NO CHANGE
COYOTE AND BERRYESSA CREEKS, CA	30-SEP-1997	30-JAN-1997	30-SEP-1998	DELAY IN SCHEDULE
GUADALUPE RIVER, CA	30-SEP-1997	31-JAN-2002	30-SEP-1999	DELAY IN SCHEDULE AND FUNDING CEILINGS
HUMBOLDT HARBOR AND BAY, CA	NONE	NONE	21-AUG-1999	FUNDING CEILINGS
LOS ANGELES COUNTY DRAINAGE AREA, CA	NONE	30-SEP-2006	30-SEP-2006	FUNDING CEILINGS
LOS ANGELES HARBOR, CA	NONE	29-JUL-2002	31-DEC-2004	FUNDING CEILINGS
LOWER SACRAMENTO AREA LEVEE RECONSTRUCTION, CA	NONE	30-SEP-2003	30-SEP-2000	FUNDING CEILINGS
MARYSVILLE/YUBA CITY LEVEE RECONSTRUCTION, CA	30-SEP-1999	30-SEP-2000	31-DEC-2000	FUNDING CEILINGS
MERCED COUNTY STREAMS, CA	INDEFINITE	INDEFINITE	INDEFINITE	NO CHANGE
MID-VALLEY AREA LEVEE RECONSTRUCTION, CA	NONE	30-SEP-2004	30-SEP-2001	FUNDING CEILINGS
OAKLAND HARBOR, CA	30-APR-1997	30-APR-1997	30-SEP-1998	DELAY DUE TO SITE CHANGES AND FUNDING CEILING
RICHMOND HARBOR, CA	14-SEP-1997	31-JUL-1999	30-SEP-1999	REEVALUATION OF PROJECT PLAN
SACRAMENTO RIVER BANK PROTECTION PROJECT, CA	INDEFINITE	INDEFINITE	INDEFINITE	NO CHANGE
SACRAMENTO RIVER, GLENN-COLUSA IRRIGATION DISTRICT, CA	NONE	NONE	01-NOV-1999	NO CHANGE
SAN LORENZO RIVER, CA	NONE	30-SEP-2001	30-SEP-1999	FUNDING CEILINGS
SAN LUIS REY RIVER, CA	01-MAY-1996	01-MAY-1996	30-SEP-1998	SECTION 902(A) LIMIT
SANTA ANA RIVER MAINSTEM, CA	30-SEP-2000	30-MAR-2003	30-MAR-2006	FUNDING CEILINGS
SANTA PAULA CREEK, CA	30-SEP-1998	01-SEP-1999	01-SEP-1999	FUNDING CEILINGS
UPPER SACRAMENTO AREA LEVEE RECONSTRUCTION, CA	NONE	NONE	30-SEP-2000	NO CHANGE
WEST SACRAMENTO, CA	NONE	31-MAY-1999	31-MAY-1999	DELAY IN COMPLETING DESIGN
ALAMOSA, CO	31-JAN-1997	15-SEP-1998	15-SEP-1998	DESIGN CHANGES
DELAWARE COAST PROTECTION, DE	30-SEP-2021	30-SEP-2021	30-SEP-2021	NO CHANGE
CANAVERAL HARBOR, FL	30-JUL-1995	NONE	31-MAY-2044	EXPANDED PROJECT SCOPE
CENTRAL AND SOUTHERN FLORIDA, FL	30-APR-1999	30-SEP-2004	31-JUL-2005	INCREASED SCOPE
DADE COUNTY, FL	31-DEC-2038	31-DEC-2038	31-DEC-2038	NO CHANGE
DUVAL COUNTY, FL	30-SEP-2030	NONE	31-DEC-2028	PCA EXECUTED IAW SEC 934 REPORT
EVERGLADES AND SOUTH FLORIDA ECOSYSTEM RESTORATION, FL	NONE	NONE	30-SEP-2002	NO CHANGE
FOUR RIVER BASINS, FL	31-MAR-1996	31-MAY-1999	31-MAY-1999	DELAY DUE TO LOCAL PERMIT
JIM WOODRUFF LOCK & DAM POWERHOUSE, FL & GA (MAJOR REHAB)	NONE	30-SEP-2003	30-SEP-2001	FUNDING CEILINGS
KISSIMMEE RIVER, FL	NONE	30-SEP-2009	30-SEP-2009	NO CHANGE
MANATEE COUNTY, FL	NONE	NONE	01-APR-2034	NO CHANGE

CONSTRUCTION, GENERAL
COMPLETION DATE OF SCHEDULED WORK

PROJECT NAME	FY 95 CURR COMP DATE	FY 97 CURR COMP DATE	FY 98 CURR COMP DATE	REASON FOR SCHEDULE CHANGES
MANATEE HARBOR, FL	30-JUN-2000	30-JUN-2000	31-MAR-1999	FUNDING CEILINGS
MARTIN COUNTY, FL	NONE	30-APR-2046	30-APR-2046	NO CHANGE
MIAMI HARBOR CHANNEL, FL	01-DEC-1994	01-DEC-1997	30-JUN-1998	DELAY DUE TO OCEAN DISPOSAL PERMIT
PALM BEACH COUNTY, FL (REIMBURSEMENT)	NONE	31-OCT-2043	31-OCT-2043	NO CHANGE
PINELLAS COUNTY, FL	30-SEP-2048	INDEFINITE	30-SEP-2043	CLEARWATER ELEMENT MOVED TO UNSCHEDULED
SARASOTA COUNTY, FL	NONE	NONE	30-JUN-2047	NO CHANGE
BUFORD POWERHOUSE, GA (MAJOR REHAB)	NONE	NONE	30-SEP-2002	NO CHANGE
HARTWELL LAKE POWERHOUSE, GA & SC (MAJOR REHAB)	NONE	30-JUN-1998	31-OCT-1998	FUNDING CEILINGS
RICHARD B RUSSELL DAM AND LAKE, GA & SC	30-SEP-1996	30-SEP-1999	30-SEP-1999	ADDITIONAL ENVIRONMENTAL REQUIREMENTS
THURMOND LAKE POWERHOUSE, GA & SC (MAJOR REHAB)	NONE	30-APR-2003	30-APR-2003	NO CHANGE
IAO STREAM FLOOD CONTROL, MAUI, HI (DEF CORR)	31-MAR-1997	31-MAR-2003	21-JUL-2003	EXPANDED PROJECT SCOPE
MAALAEA HARBOR, MAUI, HI	30-SEP-1996	31-MAY-1999	31-MAY-2000	DELAY DUE TO ENVIRONMENTAL CONCERNS
LOCK AND DAM 14, MISSISSIPPI RIVER, IA (MAJOR REHAB)	30-JUL-1999	31-AUG-2000	31-AUG-2000	FUNDING CEILINGS
MISSOURI RIVER LEVEE SYSTEM, IA, NE, KS & MO	30-Sep-2001	31-MAR-2003	31-MAR-2003	REVISED SCHEDULE
MUSCATINE ISLAND, IA	31-DEC-1998	31-JUL-2000	31-JUL-2000	DELAY IN RE ACQUISITION AND FUNDING CEILINGS
PERRY CREEK, IA	30-JUL-1999	31-JUL-2001	31-JUL-2001	DELAY DUE TO RELOCATIONS
ALTON TO GALE ORGANIZED LEVEE DISTRICT, IL & MO (DEF CORR)	01-SEP-1996	NONE	30-SEP-1998	NEW LEVEE SLIDES
CHICAGO SHORELINE, IL	NONE	30-SEP-2000	30-SEP-2008	EXPANDED PROJECT SCOPE
EAST ST LOUIS, IL	30-SEP-1996	15-DEC-1998	15-DEC-1998	DELAY IN EXECUTING PCA
LOCK AND DAM 24, MISSISSIPPI RIVER, IL & MO (MAJOR REHAB)	NONE	30-JAN-2005	30-SEP-2001	FUNDING CEILINGS
LOCK AND DAM 25, MISSISSIPPI RIVER, IL & MO (MAJOR REHAB)	01-MAY-1997	30-JUL-2003	30-SEP-2000	FUNDING CEILINGS
LOVES PARK, IL	31-DEC-1998	30-SEP-2000	30-SEP-2000	FUNDING CEILINGS
MCCOOK THORTON, IL	30-JUN-2010	INDEFINITE	INDEFINITE	REEVALUATION OF PROJECT PLAN
MELVIN PRICE LOCK AND DAM, IL & MO	01-OCT-1998	30-SEP-2004	30-SEP-2004	FUNDING CEILINGS
OLMSTED LOCKS AND DAM, IL & KY	30-SEP-2006	01-SEP-2008	30-SEP-2008	FUNDING CEILINGS
REND LAKE, IL (DEF CORR)	NONE	30-SEP-1998	30-SEP-1998	NO CHANGE
UPPER MISS RVR SYSTEM ENV MGMT PROGRAM, IL, IA, MO, MN & WI	01-SEP-2002	01-SEP-2002	30-SEP-2002	NO CHANGE
BURNS WATERWAY HARBOR, IN (MAJOR REHAB)	30-SEP-1998	30-SEP-1999	30-SEP-1999	FUNDING CEILINGS
FORT WAYNE METROPOLITAN AREA, IN	30-SEP-1999	30-SEP-2001	30-SEP-2001	FUNDING CEILINGS
LITTLE CALUMET RIVER, IN	30-SEP-1999	30-JUN-2004	30-JUN-2004	FUNDING CEILINGS AND SPONSOR FINANCING
ARKANSAS CITY, KS	NONE	30-JAN-2002	30-SEP-2003	DELAY IN RE ACQUISITION
WINFIELD, KS	NONE	30-JAN-2000	30-JAN-2000	NO CHANGE
BARKLEY DAM AND LAKE BARKLEY, KY & TN	30-SEP-1997	30-SEP-1998	30-SEP-2002	FUNDING CEILINGS
DEWEY LAKE, KY (DAM SAFETY)	NONE	30-SEP-2001	30-SEP-2002	FUNDING CEILINGS
MCALPINE LOCKS & DAMS, KY & IN	NONE	30-SEP-2006	30-SEP-2006	NO CHANGE
METROPOLITAN LOUISVILLE, POND CREEK, KY	NONE	31-JUL-1999	31-MAY-2000	DELAY IN RE ACQUISITION AND FUNDING CEILINGS
ALOHA - RIGOLETTE, LA	30-SEP-1997	30-SEP-1999	30-MAR-1999	DELAY IN EXECUTING PCA
ATCHAFALAYA BASIN, FLOODWAY SYSTEM, LA	30-SEP-2013	30-SEP-2016	30-SEP-2016	FUNDING CEILINGS
ATCHAFALAYA BASIN, LA	01-FEB-2011	30-SEP-2021	30-SEP-2021	FUNDING CEILINGS
LAKE PONTCHARTRAIN AND VICINITY, LA (HURRICANE PROTECTION)	01-NOV-2013	01-NOV-2013	01-NOV-2013	NO CHANGE
LAROSE TO GOLDEN MEADOW, LA (HURRICANE PROTECTION)	01-NOV-2002	01-SEP-2004	30-SEP-2004	FUNDING CEILINGS
MISSISSIPPI AND LOUISIANA ESTUARINE AREAS, LA & MS	01-FEB-2002	01-APR-2007	01-APR-2008	FUNDING CEILINGS AND COORDINATION WITH MS AND LA
MISSISSIPPI DELTA REGION, LA	01-FEB-2002	01-FEB-2003	01-SEP-2003	DELAY IN RE ACQUISITION AND FUNDING CEILINGS
MISSISSIPPI RIVER - GULF OUTLET, LA	INDEFINITE	INDEFINITE	INDEFINITE	NO CHANGE
MISSISSIPPI RIVER SHIP CHANNEL, GULF TO BATON ROUGE, LA	31-MAR-1996	INDEFINITE	INDEFINITE	SCHEDULED CONSTRUCTION COMPLETE
NEW ORLEANS TO VENICE, LA (HURRICANE PROTECTION)	01-SEP-2013	01-SEP-2013	30-SEP-2013	NO CHANGE
RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LA	30-JAN-1995	INDEFINITE	INDEFINITE	SCHEDULED CONSTRUCTION COMPLETE

CONSTRUCTION, GENERAL
COMPLETION DATE OF SCHEDULED WORK

PROJECT NAME	FY 95 CURR COMP DATE	FY 97 CURR COMP DATE	FY 98 CURR COMP DATE	REASON FOR SCHEDULE CHANGES
SOUTHEAST LOUISIANA, LA	NONE	INDEFINITE	INDEFINITE	NO CHANGE
WEST BANK - EAST OF HARVEY CANAL, LA (HURRICANE PROTECTION)	NONE	NONE	01-SEP-2011	NO CHANGE
WESTWEGO TO HARVEY CANAL, LA (HURRICANE PROTECTION)	01-DEC-2002	01-DEC-2005	30-SEP-2006	REVISED PMP AND FUNDING CEILINGS
BOSTON HARBOR, MA	NONE	31-MAR-2000	31-MAR-2000	NO CHANGE
HODGES VILLAGE DAM, MA (MAJOR REHAB)	NONE	30-SEP-2001	31-MAY-1999	FUNDING CEILINGS
ROUGHANS POINT, REVERE, MA	31-JUL-1998	30-SEP-1998	30-JUN-1999	DELAY IN RE ACQUISITION
TOWN BROOK, QUINCY AND BRAINTREE, MA	31-AUG-1997	30-SEP-1997	30-APR-1999	DESIGN CHANGES
ANACOSTIA RIVER AND TRIBUTARIES, MD & DC	NONE	NONE	30-SEP-2000	NO CHANGE
ATLANTIC COAST OF MARYLAND, MD	NONE	NONE	30-SEP-2044	NO CHANGE
CHESAPEAKE BAY OYSTER RECOVERY, MD	NONE	30-SEP-2000	30-SEP-2000	NO CHANGE
POPLAR ISLAND, MD	NONE	30-SEP-2021	30-SEP-2022	RESCHEDULING OF PHASED CONSTRUCTION
LOCK AND DAM 3, MISSISSIPPI RIVER, MN (MAJOR REHAB)	NONE	NONE	30-SEP-1998	NO CHANGE
MARSHALL, MN	NONE	30-SEP-2001	30-SEP-2000	FUNDING CEILINGS
PINE RIVER DAM, CROSS LAKE, MN (DAM SAFETY)	NONE	30-SEP-2002	30-SEP-2003	FUNDING CEILINGS
BLUE RIVER CHANNEL, KANSAS CITY, MO	30-SEP-1998	30-SEP-2006	30-SEP-2005	DELAY IN SCHEDULE AND FUNDING CEILINGS
CAPE GIRARDEAU - JACKSON, MO	28-APR-1997	29-DEC-1999	29-DEC-1999	SECTION 902(A) LIMIT
MERAMEC RIVER BASIN, VALLEY PARK LEVEE, MO	01-NOV-1996	30-JUN-2000	30-SEP-2000	DELAY IN ACQUIRING ROW
MINGO CREEK, TULSA, OK	30-JUL-1996	30-SEP-1999	30-SEP-1999	DELAY IN RE ACQUISITION AND CHANGE IN PLAN
MISS RIVER BTWN THE OHIO AND MO RIVERS (REG WORKS), MO & IL	01-MAR-2000	30-DEC-2005	30-SEP-2014	REVISED MASTER PLAN AND FUNDING CEILINGS
ST JOHNS BAYOU - NEW MADRID FLOODWAY, MO	NONE	NONE	30-SEP-2002	NO CHANGE
STE GENEVIEVE, MO	NONE	INDEFINITE	30-SEP-2002	NO CHANGE
TABLE ROCK LAKE, MO & AR (DAM SAFETY)	NONE	30-MAR-2005	30-MAR-2005	NO CHANGE
YAZOO BASIN, MS	01-JUL-2013	01-SEP-2029	01-SEP-2031	FUNDING CEILINGS
AIWW - REPLACEMENT OF FEDERAL HIGHWAY BRIDGES, NC	31-DEC-1999	31-DEC-1999	31-MAY-2000	DELAY IN EXECUTING PCA
CAROLINA BEACH AND VICINITY, NC	31-MAY-2047	31-MAY-2046	31-MAY-2046	CONGRESSIONAL ADD
WILMINGTON HARBOR CHANNEL WIDENING, NC	NONE	NONE	30-SEP-1999	NO CHANGE
WRIGHTSVILLE BEACH, NC	NONE	NONE	30-APR-2036	NO CHANGE
GARRISON DAM AND POWER PLANT, ND (MAJOR REHAB)	NONE	30-SEP-2006	30-SEP-2005	FUNDING CEILINGS
HOMME LAKE, ND (DAM SAFETY)	30-SEP-1999	30-SEP-2001	30-SEP-2002	FUNDING CEILINGS AND EXPANDED SCOPE
LAKE ASHTABULA AND BALDHILL DAM, ND (DAM SAFETY)	30-SEP-1999	30-SEP-1999	30-SEP-1999	NO CHANGE
LAKE ASHTABULA AND BALDHILL DAM, ND (MAJOR REHAB)	30-SEP-1999	30-SEP-1999	30-SEP-2001	PERMIT COORDINATION
SHEYENNE RIVER, ND	30-JUN-1999	30-SEP-2003	30-SEP-2003	FUNDING CEILINGS AND PERMIT COORDINATION
MISSOURI NATIONAL RECREATIONAL RIVER, NE & SD	30-SEP-2002	30-SEP-2008	30-SEP-2008	FUNDING CEILINGS
MISSOURI RIVER FISH AND WILDLIFE MITIGATION, IA, NE, KS & MO	30-SEP-1999	30-SEP-2007	30-SEP-2006	FUNDING CEILINGS
WOOD RIVER, GRAND ISLAND, NE	02-JAN-1998	30-SEP-1999	30-SEP-2000	FUNDING CEILINGS
CAPE MAY INLET TO LOWER TOWNSHIP, NJ	30-SEP-2041	30-SEP-2041	30-SEP-2041	NO CHANGE
GREAT EGG HARBOR INLET AND PECK BEACH, NJ	30-SEP-2043	30-SEP-2043	30-SEP-2043	NO CHANGE
MOLLY ANN'S BROOK AT HALEDON, PROSPECT PARK & PATERSON, NJ	30-SEP-1997	30-JUN-1999	30-JUN-1999	FUNDING CEILINGS
PASSAIC RIVER PRESERVATION OF NATURAL STORAGE AREAS, NJ	NONE	NONE	30-SEP-2000	NO CHANGE
RAMAPO RIVER AT OAKLAND, NJ	NONE	30-SEP-2004	30-SEP-2001	FUNDING CEILINGS
SANDY HOOK TO BARNEGAT INLET, NJ	30-SEP-2048	30-SEP-2048	30-SEP-2048	NO CHANGE
ABIQUIU DAM EMERGENCY GATES, NM	NONE	30-APR-1998	30-APR-1999	DELAY IN SCHEDULE
ACEQUIAS IRRIGATION SYSTEM, NM	01-MAR-2009	01-MAR-2009	01-MAR-2020	FUNDING CEILINGS
ALAMOGORDO, NM	01-DEC-2000	30-SEP-2006	30-SEP-2006	FUNDING CEILINGS
GALISTEO DAM, NM (DAM SAFETY)	NONE	30-SEP-2000	30-SEP-2000	NO CHANGE
LAS CRUCES, NM	NONE	NONE	30-AUG-2000	NO CHANGE
MIDDLE RIO GRANDE FLOOD PROTECTION, BERNALILLO TO BELEN, NM	30-SEP-1998	30-JUN-2005	30-JUN-2005	FUNDING CEILINGS

CONSTRUCTION, GENERAL
COMPLETION DATE OF SCHEDULED WORK

PROJECT NAME	FY 95 CURR COMP DATE	FY 97 CURR COMP DATE	FY 98 CURR COMP DATE	REASON FOR SCHEDULE CHANGES
RIO GRANDE FLOODWAY, SAN ACACIA TO BOSQUE DEL APACHE, NM	23-MAR-2000	03-MAY-2006	03-MAY-2007	INCREASED COORDINATION - ENDANGERED SPECIES
TWO RIVERS DAM, NM (DAM SAFETY)	NONE	30-SEP-1998	30-SEP-1998	NO CHANGE
TROPICANA AND FLAMINGO WASHES, NV	30-SEP-2001	30-SEP-2006	30-SEP-2006	FUNDING CEILINGS
ATLANTIC COAST OF NYC, ROCKAWAY INLET TO NORTON POINT, NY	30-SEP-2045	30-SEP-2045	30-SEP-2045	NO CHANGE
EAST ROCKAWAY INLET TO ROCKAWAY INLET AND JAMAICA BAY, NY	30-Sep-2001	30-SEP-2004	30-NOV-2004	RESCHEDULING OF APPROVED RENOURISHMENTS
FIRE ISLAND INLET TO JONES INLET, NY	30-SEP-2039	30-SEP-2039	30-SEP-2039	NO CHANGE
FIRE ISLAND INLET TO MONTAUK POINT, NY	INDEFINITE	INDEFINITE	INDEFINITE	NO CHANGE
KILL VAN KULL AND NEWARK BAY CHANNEL, NY & NJ	30-SEP-1995	INDEFINITE	INDEFINITE	PROGRAMMED WORK COMPLETE
BEACH CITY LAKE, MUSKINGUM RIVER LAKES, OH (DAM SAFETY)	NONE	30-SEP-1999	30-SEP-2000	FUNDING CEILINGS
HOLES CREEK, WEST CARROLLTON, OH	31-DEC-1998	INDEFINITE	30-SEP-1998	DESIGN CHANGES
METROPOLITAN REGION OF CINCINNATI, DUCK CREEK, OH	NONE	30-SEP-2001	30-SEP-2001	NO CHANGE
MILL CREEK, OH	NONE	NONE	INDEFINITE	NO CHANGE
WEST COLUMBUS, OH	30-SEP-2002	30-SEP-2004	30-SEP-2003	ACCELERATED EARNINGS AND FUNDING CEILINGS
FRY CREEKS, BIXBY, OK	09-JUL-1997	15-DEC-1998	01-SEP-1998	REVISED SCHEDULE AND REAL ESTATE DELAYS
TENKILLER FERRY LAKE, OK (DAM SAFETY)	NONE	30-SEP-2007	30-SEP-2008	FUNDING CEILINGS
BONNEVILLE POWERHOUSE PHASE II, OR & WA (MAJOR REHAB)	30-SEP-2002	30-SEP-2003	30-SEP-2004	FUNDING CEILINGS
COLUMBIA RIVER TREATY FISHING ACCESS SITES, OR & WA	30-SEP-1995	30-SEP-2002	30-SEP-2005	INCREASED SCOPE AND FUNDING CEILINGS
ELK CREEK LAKE, OR	INDEFINITE	INDEFINITE	INDEFINITE	NO CHANGE
LOWER SNAKE RIVER FISH & WILDLIFE COMPENSATION, WA, OR & ID	30-SEP-1996	30-SEP-1999	30-SEP-2002	INCREASED SCOPE AND FUNDING CEILINGS
GRAYS LANDING LOCK AND DAM, MONONGAHELA RIVER, PA	30-SEP-1995	INDEFINITE	30-SEP-2000	INCREASED SCOPE
JOHNSTOWN, PA (MAJOR REHAB)	NONE	30-SEP-2000	30-SEP-2002	REEVALUATION OF PROJECT SCHEDULE
LACKAWANNA RIVER, OLYPHANT, PA	NONE	30-NOV-1999	30-SEP-2001	DELAY IN RE ACQUISITION AND EXECUTING PCA
LACKAWANNA RIVER, SCRANTON, PA	NONE	30-SEP-2000	30-SEP-2001	DELAY IN RE ACQUISITION AND EXECUTING PCA
LOCKS AND DAMS 2, 3 AND 4, MONONGAHELA RIVER, PA	NONE	30-SEP-2008	30-SEP-2008	NO CHANGE
PRESQUE ISLE PENINSULA, PA (PERMANENT)	30-JUN-2042	30-JUN-2042	30-JUN-2042	NO CHANGE
SAW MILL RUN, PITTSBURGH, PA	NONE	INDEFINITE	30-SEP-2001	NO CHANGE
WYOMING VALLEY, PA (LEVEE RAISING)	NONE	30-SEP-2003	30-SEP-2001	FUNDING CEILINGS
PORTUGUES AND BUCANA RIVERS, PR	30-JUN-1999	30-SEP-2003	30-SEP-2003	FUNDING CEILINGS
RIO DE LA PLATA, PR	NONE	30-APR-2005	30-SEP-2006	DELAY IN RE ACQUISITION
RIO PUERTO NUEVO, PR	30-JUN-2005	01-SEP-2007	01-JAN-2011	DELAY IN RE ACQUISITION AND FUNDING CEILINGS
SAN JUAN HARBOR, PR	NONE	NONE	01-NOV-2001	NO CHANGE
COOPER RIVER, CHARLESTON HARBOR, SC	NONE	NONE	30-MAR-1999	NO CHANGE
MYRTLE BEACH, SC	NONE	30-MAY-2047	30-MAY-2047	NO CHANGE
NONCONNAH CREEK - OVERALL, TN & MS	30-SEP-1997	30-SEP-1999	30-SEP-2000	FUNDING CEILINGS
WEST TENNESSEE TRIBUTARIES, TN	28-FEB-1998	30-SEP-2000	30-SEP-2004	FUNDING CEILINGS
CHANNEL TO VICTORIA, TX	06-JUN-1997	31-MAR-1998	02-MAR-1999	DELAY IN RE ACQUISITION
CLEAR CREEK, TX	30-SEP-1998	30-SEP-2006	30-SEP-2006	DELAY IN ACQUIRING ROW
EL PASO, TX	30-OCT-1997	30-SEP-2000	30-SEP-2002	DELAY IN RE ACQUISITION AND FUNDING CEILINGS
FREEPORT HARBOR, TX	30-SEP-1994	INDEFINITE	23-DEC-1997	CHANGE IN PROJECT SCOPE
GIWW - SARGENT BEACH, TX	20-JAN-1998	30-JAN-1998	30-JAN-1998	NO CHANGE
HOUSTON - GALVESTON NAVIGATION CHANNELS, TX	NONE	NONE	30-SEP-2002	NO CHANGE
MCGRATH CREEK, WICHITA FALLS, TX	30-MAY-1997	16-AUG-1999	30-SEP-1998	DELAY IN EXECUTING PCA AND SCHEDULE CHANGES
SAN ANTONIO CHANNEL IMPROVEMENT, TX	30-JUN-1996	31-MAR-1997	30-SEP-1998	FUNDING CEILINGS AND HTRW PROBLEMS
SIMS BAYOU, HOUSTON, TX	08-AUG-2002	30-SEP-2006	30-SEP-2006	FUNDING CEILINGS
WACO LAKE, TX (DAM SAFETY)	NONE	30-MAR-2001	30-MAR-2001	NO CHANGE
UPPER JORDAN RIVER, UT	NONE	NONE	30-SEP-2000	NO CHANGE
AIWW BRIDGE AT GREAT BRIDGE, VA	NONE	NONE	30-APR-2001	NO CHANGE

CONSTRUCTION, GENERAL
COMPLETION DATE OF SCHEDULED WORK

PROJECT NAME	FY 95 CURR COMP DATE	FY 97 CURR COMP DATE	FY 98 CURR COMP DATE	REASON FOR SCHEDULE CHANGES
NORFOLK HARBOR AND CHANNELS (DEEPENING), VA	INDEFINITE	INDEFINITE	INDEFINITE	NO CHANGE
ROANOKE RIVER UPPER BASIN, HEADWATERS AREA, VA	31-JUL-1998	30-APR-2001	31-JUL-2001	DELAY IN RE ACQUISITION AND HTRW PROBLEMS
COLUMBIA RIVER FISH MITIGATION, WA, OR & ID	30-SEP-2001	30-SEP-2007	30-SEP-2007	ADDITIONAL PROJECT REQUIREMENTS
THE DALLES POWERHOUSE (UNITS 1-14), WA & OR (MAJOR REHAB)	NONE	30-SEP-2005	30-SEP-2007	FUNDING CEILINGS
PORTAGE, WI	NONE	30-SEP-1999	30-SEP-1999	NO CHANGE
LEVISA AND TUG FORKS AND UPPER CUMBERLAND RIVER, WV, VA & KY	INDEFINITE	INDEFINITE	INDEFINITE	NO CHANGE
ROBERT C BYRD LOCKS AND DAM, WV & OH	01-JUN-1999	01-SEP-2002	01-SEP-2003	FUNDING CEILINGS
TYGART LAKE, WV (DAM SAFETY)	NONE	NONE	30-SEP-2002	NO CHANGE
WINFIELD LOCKS AND DAM, WV	30-SEP-1999	30-SEP-2001	30-SEP-2001	FUNDING CEILINGS

Question. How would regional balance be kept under the full funding proposal? Is regional balance important?

Mr. LANCASTER. The Civil Works program is a nationwide program that addresses infrastructure needs that are common to all parts of the country. Every year, in making our budget recommendations we specifically examine our choices to insure that the program contains a balanced workload, both as to project types and regional distribution. If we simply let a calculation set the program's priorities, we might find ourselves in a situation where our relationship to regional interests was stronger than our relationship to the Nation's goals. We might also find ourselves losing valuable engineering skills in portions of the country where, in fact, the nation has need of those skills.

Question. I understand that the Corps is proceeding with Division Restructuring as required by law. Could you describe how the new structure is designed to meet the Corps' current and future operational needs?

General BALLARD. Let me start by pointing out that all projections indicate that funding for the Corps Civil Works and Military Programs will continue to decline over the next several years. Consequently, it makes sense to appropriately shape our executive direction and management structure as program dollars decrease.

In developing this plan, we considered several principles. First, of course, was the provisions of Public Law 104–206. Second, we wanted to maintain a geographical balance within the continental United States and ensure that major watersheds would continue to be managed under one division headquarters. For example, all of the Mississippi River basin is now under one division. We also wanted to minimize district realignments, sustain our customer focus, maintain our regional relationships with established interests, and minimize personnel and workload disruptions. Finally, we also wanted to optimize support to military forces in the Pacific. We did this by transferring Alaska District to the Pacific Ocean Division, thereby aligning the Corps organization in the Pacific with that of the Pacific Command (PACOM).

Question. What are some of the important considerations facing the Corps as you proceed with implementation?

General BALLARD. Each division office performs four essential functions. These are command and control over subordinate districts; program management; quality assurance; and regional interface. My primary consideration is ensuring each division is resourced and organized to adequately perform these functions throughout their respective regions.

Also of concern to me is how we communicate with our people during this transition. I need to ensure they are kept informed and adequately provided for as we implement the new organization.

Finally, I want to ensure our customer service is not adversely affected by these changes. My intent is that our reorganization is transparent to our customers and that they will continue to receive quality products and services from their districts as they did before.

Question. Now, part of the restructuring moved the Albuquerque District from the Southwestern Division to the South Pacific Division. I also understood that the restructuring and move of the Albuquerque District would not effect the current mission of the District, both Civil Works and Military Construction. General Ballard, do I have your commitment that the mission and activities, both Civil and Military, of the Albuquerque District will not be changed or reduced in accordance with this understanding?

General BALLARD. Yes. Under this plan, Albuquerque District is transferred to South Pacific Division with all Civil and Military missions, activities, functions, staffing levels, and workload intact.

RESTRUCTURING OF THE CORPS OF ENGINEERS

Question. What are the near and longer-term savings anticipated from restructuring and when do you expect to realize those savings? Can additional savings be realized under the new organizational structure, and over what period of time? Are you aware of anything that would significantly impact these savings?

General BALLARD. The anticipated annual savings from the restructuring plan for fiscal year 1999 are estimated at approximately $2 million and are expected to grow to $19 million by fiscal year 2002, with an estimated annual cost avoidance of $20 million thereafter. These savings are in addition to the savings we have realized from ongoing internal initiatives undertaken to date, which have resulted in a net reduction of 228 FTE since fiscal year 1995. For the period from fiscal year 1995 to fiscal year 1998, savings from these reductions alone have grown to a projected fiscal year 1998 annual savings of about $20 million. Therefore, by fiscal year 2002,

our total projected annual savings from the fiscal year 1995 base are estimated at $40 million. We fully anticipate achieving these savings with minimal adverse impacts on staffing.

Question. What is your recommendation on how to proceed to maximize the potential savings from restructuring?

General BALLARD. Let me begin by saying that I envision little or no immediate savings from this restructuring plan. We have already come a long way, through voluntary restructuring initiatives, reducing our Executive Direction and Management workforce by about 29 percent since 1989. But we were left with too much organizational structure. The plan implemented on April 1 allowed us to reduce organizational structure to a level consistent with our program and funding. In essence, we have already realized much of the savings this reorganization has to offer. What this plan does do is provide the flexibility to shape the size of our workforce as appropriate, consistent with future Congressional funding.

Question. What actions has the Corps already taken to bring about a simpler structure and efficiency of operation? What additional actions, if implemented, would contribute to a more efficient and effective Corps operation?

General BALLARD. The Corps voluntarily initiated restructuring actions in 1989. We have reduced our Washington headquarters staff by about 24 percent. The headquarters now accounts for less than 2 percent of our total work force, making it one of the leanest headquarters in Washington. We completed a major reorganization of our division headquarters, which resulted in divesting divisions of operating functions (such as technical design review) and focussing on the four primary division level functions of command and control, quality assurance, regional interface, and program management. Our division headquarters now account for only another 3.5 percent of our total workforce. So we have already come a long way, reducing our Executive Direction and Management workforce by about 29 percent since 1989. This represents a significant savings.

The Corps has experienced a number of changes over the last few years. I believe it important for the immediate future to consolidate the gains we have made and get our new structure established. Consequently, I do not envision any additional large scale organizational changes in the near future.

However, it is clear that available dollars will continue to decline in the foreseeable future. The Corps will need to restructure in the sense of adjusting internal processes and structure to align with that reality. I recently released my vision and long term strategy for the Corps. One of the goals of that strategy is to revolutionize effectiveness. I have selected two of my divisions as test-beds to experiment with ways to improve our business processes, systems, and organizational structure at the district and division level. We will share the lessons learned from these experiments and spread them, as appropriate, throughout the Corps. We are also going to study the processes, systems, and organization of our Washington headquarters. I therefore foresee continuous assessment and—when appropriate—reengineering of our processes to best meet our customers need.

CONTRACTING OUT PLANNING, ENGINEERING, AND DESIGN

Questions. The Conferees included language for 1997 indicating their expectation that the Corps would increase the use of the private sector in performing planning, engineering and design of Corps water resources projects. What is the status of this effort?

General BALLARD. I have assigned targets to each of the divisions so that at the end of the year, the Corps will achieve the programmatic goals of 40 percent contracting for engineering and 35 percent for planning. We are monitoring the execution of each division to insure a real increase in contracting to the private sector.

Questions. What are the current goals and how do they compare to the language included in the Conference report for 1997?

General BALLARD. The goals assigned to each division are based on their workload mix. While there are differences among divisions, they all support the overall programmatic goal for the Corps included in the Conference report for 1997.

Questions. General Ballard and General Fuhrman, do you have any concerns regarding this change? How do you expect this initiative to affect budgetary and personnel resources?

General BALLARD. I have a few concerns. Although the Corps has approximately 1,500 FTE in planning and 4,100 FTE in engineering in our division offices and districts, these are spread relatively thin in some of our offices. The requirement to increase contracting has necessarily caused us to reduce these professionals in most, if not all of the locations. It is our estimate that somewhere between 250 and 300 engineers and planners were or will be eliminated from the Corps as a result of the

language included in the Conference report for 1997. In some of these locations, we are beginning to hit a critical point which reduces our ability to respond to natural emergencies and to retain a competent workforce. There are few direct budgetary impacts. This comes about because of contracting processing costs and the necessity of reviewing the product for technical sufficiency. There are also some impacts in terms of private sector contractors not being familiar with our technical regulations and standards.

Questions. Does this have an adverse impact on the Corps of Engineers capability to respond to national emergencies both civil and military?

General BALLARD. Yes. As our professional staff of engineers and planners is reduced, so is our capability to respond in a time of crisis. A prime example would be the case of the Northridge Earthquake of 1994 in California, where the Corps responded with over 700 people offering assistance during this disaster. Of this total, over 300 were structural engineers, an engineering expertise desperately needed to immediately assess safety, damages and impacts. This cadre of highly competent, trained, technical expertise is being diminished.

RECONNAISSANCE STUDIES

Question. Last year the Congress supported your efficency initiative to fund all new reconnaissance studies at $100,000 in an effort to return the reconnaissance phase to the traditional concept of a relatively short, inexpensive analysis. The Committee has heard from several groups that feel that the change will not allow the Corps to conduct a thorough study in some cases. The Committee recognized this in the Conference report and allowed the Corps to exercise appropriate judgment in adjusting the scope of the reconnaissance effort. Could you update the Committee on how this initiative is progressing, and what processes are in place to allow more complex reconnaissance studies to be adjusted?

What specific guidelines, procedures or policy changes have been made or are being considered, to guide the Corps in evaluating the need to reduce the cost and shorten the time of reconnaissance studies? Provide those guidelines for the record.

Mr. LANCASTER. Planning Guidance Letter 96–3, Expedited Reconnaissance Study Phase dated 16 August 1996, provided guidance on accomplishing reconnaissance studies at a reduced cost and shortened schedule. The goal of the expedited reconnaissance study phase is to demonstrate Federal interest and the reasonable prospect of a justified project. This approach relies heavily on the use of existing information and the expertise of Corps districts, other Federal agencies, States, and local governments in developing plans to solve water resources problems. The development of a Project Study Plan (PSP) is an essential task in the Expedited Reconnaissance Study. A PSP is a plan of study which is used to define and manage the development and conduct of a feasibility study.

Existing, readily-available data will be used during the Expedited Reconnaissance Study. Determining Federal interest and the reasonable prospect of a justified project will be based on professional and technical judgement of an experienced study team. To keep the Expedited Reconnaissance Study focused, costs low, and durations short, the following items will not be included for these studies: (1) development and formalized displays of detailed cost estimates (such as MCACES); (2) detailed engineering and design studies and data gathering; (3) detailed environmental resources evaluations; (4) optimization and benefit-cost analyses; (5) detailed real estate information; (6) report preparation; (7) formal coordination with other Federal and state agencies; and (8) other studies not directly needed to support the essential tasks. The requirement for a traditional Reconnaissance Report is waived and an abbreviated document called Section 905(b) (WRDA 86) Analysis, is to be used. I will provide a copy of Planning Guidance Letter 96–3 for the record. (The information follows:)

Question. How many 1997 reconnaissance studies have been adjusted to exceed the $100,000/12 month model, and how many are being reviewed for possible expansion? Provide a list for the record which lists these studies and a brief explanation of why the expansion is warranted.

Mr. LANCASTER. We have had two requests to increase the scope of a reconnaissance study. One study is for the Memphis Metro area. Approval was given for a 12–15 month study at a cost of $850,000. Approval was based on the lack of available data, complexity of the hydrology and the many governmental entities involved. We are currently reviewing a request to expand the Chemung Basin in New York and Pennsylvania in light of the basin's size and complexity of the possible projects.

Question. Late last year, Congress passed a new water resource development authorization bill, the so called WRDA 1996. First, what is the magnitude of this authorization in terms of dollars and projects?

General FUHRMAN. Sir, the Water Resources Development Act of 1996 provides authorizations for approximately $5,222 million for over 320 projects, programs, studies, and other activities. This amount includes non-Federal contributions of $1,375 million, and a Federal cost estimate of $3,847 million.

Question. What priority programs, projects, or activities in WRDA 1996 have been included in the Corps' 1998 budget request and what funding level is being requested for each? Please provide a list for the record and a brief description of each.

General FUHRMAN. Sir, the following table lists the sixty-eight studies and projects for which funds have been requested in the fiscal year 1998 budget which were authorized in the Water Resources Development Act of 1996.

[In thousands of dollars]

Title	Name	Fiscal year 1998			Description
		PED	CG	OTH	
	TITLE I—PROJECT AUTHORIZATIONS				
101	American River, CA	401	44,744		
101	Humbolt Harbor, CA		6,000		
101	Marin Co., San Clemente, CA			150	OTH: Survey Funding.
101	Port of Long Beach, CA	160			
101	San Lorenzo River, CA		4,200		
101	Santa Barbara Harbor, CA			1,492	OTH: O&M Purchase of dredge.
101	Anacostia River, DC and MD		10,799		
101	AIWW, FL	90			
101	Cedar Hammock, FL	330			
101	Lower Savannah, GA, SC	94			
101	Lake Michigan, IL		10,000		(Chicago Shoreline).
101	Kentucky Lock and Dam, KY	1,750			
101	Pond Creek, KY		1,800		
101	Port Fourchon, LA	129			
101	W. Bank of MS River, N.O., LA		2,385		
101	Blue River Basin, MO	656			
101	Wood River, Grand Isl, NE		500		
101	Las Cruces, NM		6,000		
101	Atlantic Coast Lng Isl, NY		1,000		
101	Cape Fear, NC	330			
101	Wilmington Hrbr, NC		17,512		
101	Duck Creek, OH		2,120		
101	Willamette River, OR	520			
101	Rio Grande de Arecibo, PR	665			
101	Charleston Harbor, SC	200			
101	GIWW, ANWR, TX	334			
101	Houston Gal Nav Ch, TX		119,100		
101	Marmet Lock, WV	830			
101	Projects subject to a report:				
101	Cook Inlet, AK	125			
101	St.Paul Isl Harbor, AK	138			
101	Terminus Dam, CA	1,100			Kaweah proj auth.
101	Westwego,Harvey Canal, LA	470			Lake Cataouache element PED.
101	Chesapeake, MD and DE	1,625			
	TITLE III—PROJECT MODS				
301	San Frnsco Rv, Clifton, AZ		2,300		
301	Oakland Harbor, CA		8,935		

[In thousands of dollars]

Title	Name	Fiscal year 1998			Description
		PED	CG	OTH	
301	San Luis Rey, CA		5,400		
301	Molly Ann's Brook, NJ		7,090		
301	Ramapo Rv, Oakland, NJ		277		
301	Wilmington Hrbr-NE, NC	100			
301	Saw Mill Run, PA		500		
301	San Juan Hrbr, PR		2,400		
301	Upr Jordan Riv, UT		700		
301	Projects Subject to Reports:				
301	Alamo Dam, AZ			1,055	O&M cost for reoperation.
301	Phoenix,AZ (Tres Rios)			400	Feasibility Study Funding.
301	Glenn-Colusa, CA		600		
301	Comite Rvr, LA	265			
301	Arthur Kili, NY and NJ	378			
301	Kill Van Kull, NY and NJ		429		
305	Channel Isl Hrbr, CA			3,000	Adds sand bypass to O&M.
307	LA and Lng Bch Hrbr, CA		16,100		Credit for sewer relocation.
315	Central and So FL, Canal 51		1,457		Flood Control.
316	Central and So FL,Canal 111		16,300		Environmental Restoration.
334	Acequias Irrig Sys, NM		600		
342	Lakawanna Rv, Scrntn, PA		425		
346	Wyoming Valley, PA		13,000		
	Project Reauthorizations:				
363	Alpena Hrbr, MI			324	O&M funded in fiscal year 1998.
363	Ontonagon Hrbr, MI			407	O&M funded in fiscal year 1998.
	TITLE V—MISCELLANEOUS				
506	Palm Beach Co, FL			202	
506	Raritan Bay and Sandy, NJ			1,200	Feasibility study.
506	Fire Island Inlet, NY		285		
509	Humboldt Hrbr and Bay, CA			1,425	O&M Funding.
509	Mare Is Str, San Pablo Bay, CA			1,680	O&M Funding.
509	Blair Wtwy, Tacoma Hrbr, WA			600	GI Feasibility Study.
510	Chsapke Bay Envrnmtl R&P				
528	Tampa, FL		75,000		
537	Poplar Isl, MD		30,621		
538	Smith Isl, MD			2200	Feasibility Study.
551	Hudson Rvr Hab Rest, NY			250	Feasibility Study.
555	Drdg Mtrl Prt of NY–NJ			1,250	O&M Funding.
572	East Ridge, TN	300			

1997 EMERGENCY FLOODING SUPPLEMENTAL

Question. What is the current situation regarding flooding around the United States and how is the Corps financing its flood fighting operations?

General FUHRMAN. We are continuing to meet emergencies as they occur. In January of this year, the Corps, together with other Federal and state agencies, responded to the severe flooding in the Western United States, especially in California. Next came the March flooding in the Ohio River and Mississippi River basins. Most recently, we have responded to the floods in the upper Midwest. Needless to say, these events have all but exhausted the emergency fund and have placed a tremendous financial burden on the Operation and Maintenance, General, and Flood Control, Mississippi River and Tributaries, accounts. I hope the Congress will quickly approve the President's request for supplemental funds so the Corps will be ready

to meet emergency requirements which will arise from additional Spring flooding and other events. Thus far, we have been able to meet requirements by reprogramming funds scheduled to be obligated in the fourth quarter. The Assistant Secretary of the Army for Civil Works intends to transfer unallotted Construction, General, funds to the Flood Control and Coastal Emergencies account, under his emergency authority, pending receipt of a supplemental appropriation.

Question. Once funding from Flood Control and Coastal Emergencies is exhausted, how would the Corps meet its emergency responsibilities? Has the Corps been forced to borrow from other appropriation accounts to finance emergency needs? If so, why hasn't the Committee been notified as required? Provide for the record a list of those programs, projects or activities from which funds have been borrowed.

General FUHRMAN. The Assistant Secretary of the Army for Civil Works notified the Appropriations Committees this morning that he intends to use his emergency authority to transfer Construction, General, funds to the Flood Control and Coastal Emergencies account. The funds would be restored upon receipt of a supplemental appropriation. Meanwhile, we have been managing the remaining funds in the Flood Control and Coastal Emergencies account very carefully. We have been using our fourth quarter operating funds, including labor money, to meet the present emergencies.

The source of the Construction, General, funds to be transferred is the unallotted funds for the continuing authorities program which are not required until the fourth quarter. We do not plan at this time to revoke funds from specific projects. With a timely supplemental appropriation, there should be only minor impacts on the construction program.

1997 EMERGENCY FLOODING SUPPLEMENTAL

Question. In mid-March, the President transmitted an emergency supplemental funding request for fiscal year 1997 totaling $290.7 million to address requirements resulting from natural disasters. Did that request include funding to address recurring flooding in the Pacific Northwest, the Ohio River Basin, the upper Midwest, and the impacts of flooding in the lower Mississippi River? What are the Corps additional needs, beyond what the President has requested, as a result of flooding in these areas and to respond to the continuing devastating flooding in the Northern Great Plains.

General FUHRMAN. The President recently amended his emergency supplemental funding request to cover changed conditions and contingencies. The President's amended request is $401.5 million which includes a $75 million contingency to meet new emergencies which may occur throughout the Nation in fiscal year 1997. The President's fiscal year 1998 budget request includes a centralized disaster account from which fiscal year 1998 emergency requirements would be funded. In addition to funds for the Flood Control and Coastal Emergencies, and Operation and Maintenance, General, accounts, the amended request also includes $13 million for the Flood Control, Mississippi River and Tributaries, project for emergencies in the lower alluvial valley of the Mississippi River.

Question. Has the Corps made a request to OMB for additional funding to take care of these additional needs? What is the potential impact on the Corps programs and activities if this additional funding is not provided?

General FUHRMAN. The additional requirements for fiscal year 1997 were submitted to OMB by the Assistant Secretary of the Army for Civil Works and are included in the President's amended emergency supplemental funding request. If the additional funds were not received, the Corps would face some very difficult choices on how to accomplish our emergency mission and still continue scheduled work on projects and activities. Clearly, we would not have the funds to do both.

Question. What would be the impact if the emergency supplemental is limited to the amount requested by the President?

General FUHRMAN. The President's amended request would allow the Corps to meet known and anticipated emergency needs in fiscal year 1997. Funding requirements which arise or carry over into fiscal year 1998 would be funded from the centralized disaster account requested by the President in his fiscal year 1998 budget.

1997 EMERGENCY FLOODING SUPPLEMENTAL

Question. The fiscal year 1998 budget request for Operation and Maintenance is significantly less than the amount appropriated for fiscal year 1997. What effect will the past and ongoing flooding situation have on your fiscal year 1998 O&M program?

General FUHRMAN. This year's events have caused much damage to Corps projects and navigation channels. To meet emergency dredging and repair requirements, we

have had to reprogram already-scarce O&M dollars from scheduled work, in anticipation of receiving a supplemental appropriation. However, some of the slippage in schedules, especially dredging, will overflow into fiscal year 1998. This situation will be exacerbated if supplemental funding is not received on a timely basis.

OPERATION AND MAINTENANCE REQUEST

Question. The total request for Operation and Maintenance activities for fiscal year 1998 is $1.618 billion, a decrease of $98 million below the 1997 level, excluding supplementals. How will this reduction impact program, projects of activities in the O&M account?

Mr. LANCASTER. The $98 million decrease includes a $19 million supplemental appropriation to repair damages caused by Hurricane Fran. Moreover, the regular appropriation of $1.697 million was $34 million greater than the President's budget request of $1.663 million for fiscal year 1997. Therefore, the fiscal year 1998 O&M budget request of $1.618 billion is $45 million, or 2.7 percent, less than our recommended program of $1.663 million for fiscal year 1997.

This reduction is necessary to achieve balance with other important priorities, such as investing in new infrastructure, continuing construction, and environmental restoration projects. In order to achieve this savings, various efficiency measures, combined with a concerted effort to target available resources on the most essential maintenance, are being pursued to align operation and maintenance levels with the demand for services.

The Corps of Engineers will not be able to conduct business as usual with $45 million less than the fiscal year 1997 budget request. However, I believe there are opportunities to save money in a program of this magnitude and diversity. Accordingly, the budget request includes some proposals to adjust service levels and scale back maintenance, while still preserving the investment in our water resources infrastructure. The budget reflects cost savings in all mission areas, to varying degrees. The proposals are not final—they are concepts that will be analyzed further, coordinated with our customers, and refined as necessary so as to achieve the cost savings in an informed and open forum.

Question. What funding level did the Corps request of OMB for Operation and Maintenance for fiscal year 1998 and why do you feel that level of funding is more realistic?

Mr. LANCASTER. The Army's recommendation to OMB for the fiscal year 1998 O&M program was $1.75 billion. Without regard to other budgetary considerations, this was realistic because it would support current service levels. However, in order to achieve the Administration's goal to balance the budget, and still be able to address other important investments in new infrastructure, continuing construction and the environment, it is necessary to pursue cost saving measures in the O&M program.

Question. Does the fiscal year 1998 budget request contemplate any major policy changes in light of this sizable reduction in resources?

Mr. LANCASTER. No, sir. The Army proposes to achieve cost savings in the O&M program while continuing to perform all of its traditional missions in accordance with authorized project purposes.

Question. Could you provide for the record a list of those activities which would normally be accomplished in fiscal year 1998 that will not be undertaken because of the funding shortfall?

Mr. LANCASTER. Candidate proposals for achieving the cost savings are outlined below. Since they are conceptual in nature, the potential savings are preliminary estimates, subject to change as the concepts are refined. There are some offsetting increases in other areas, and so the estimated gross savings are greater than the $45 million net decrease from the fiscal year 1997 budget request.

Inland waterways. Many of our navigation locks are staffed 24 hours per day; but, the utilization varies extensively. Where the utilization rates are relatively low, perhaps the same level of service could be provided for our customers with something less than around the clock availability. Locks with utilization rates of less than 30 percent have been initially targeted for further analysis. Estimated savings are $8 million.

Shallow draft harbors. The budget request includes funding to maintain shallow draft harbors, especially those where communities' economies are dependent on commercial fishing and related activities. On the other hand, the budgetary climate will challenge our ability to maintain harbors where the benefits are primarily recreational. Estimated savings are $24 million.

Recreation. The length of the recreation season should be commensurate with visitation at Corps lakes. The recreation season could be shortened in some cases, par-

ticularly where there are other recreation areas close by. Some of our campgrounds might be leased to the private sector and relieve the financial burden from the taxpayer. Cost savings could also be obtained by reducing the hours of operation at visitor centers, especially when visitation is low. Estimate savings are $20 million.

Supporting elements. Since cost savings are contemplated in the primary mission areas, activities that support them would also be expected to achieve efficiencies. These activities include studies, master planning, water control management, and real estate management. Estimated savings are $5 million.

Maintenance. The budgetary climate does not allow us to perform all the maintenance that could otherwise be accommodated in a more robust budget. We do not believe this will result in unsatisfactory performance. It simply means that some work will be deferred until the particular feature reaches the point where maintenance is needed to keep it in operational working order. Estimated savings are $12 million.

UPPER RIO GRANDE WATER OPERATION MODEL, NEW MEXICO

Question. The Committee provided $210,000 for fiscal year 1997 for the Corps to continue joint activities with other Federal agencies in the upper Rio Grande River Basin related to reservoir operations, water accounting and evaluation of water operation alternatives. What is the nature of the requirement and current status of this work?

General FUHRMAN. Model development and other joint activities related to the need for an Upper Rio Grande Water Operations Model were initiated in fiscal year 1997. In summary, six cooperating Federal Agencies finalized a Plan for Development for this model in February 1997, which outlined the tasks and schedule required for model development. The computer hardware and software needed for the river and reservoir simulation computer model was selected and obtained. The Rio Chama, the major tributary in the study reach, has been selected as a Test Case for the model. By the end of 1997, the Test Case will be completed and model evaluated for application to the rest of the Middle Rio Grande Basin.

Question. What work is planned for fiscal year 1998?

General FUHRMAN. As you know, sir, the Corps of Engineers participation in this work is under the Operation and Maintenance, General, (O&M) account. In support of the goal to balance the budget and also provide funds for new construction and environmental restoration projects, reductions have been proposed in the fiscal year 1998 O&M budget request. We will be reviewing the O&M program to determine the best way to achieve cost savings and still provide reasonable levels of service. Efficiency measures, combined with a concerted effort to target available resources on the most critical maintenance, are being pursued.

Continuing Construction, General, projects and O&M projects, including the Upper Rio Grande Water Operations Model Study, are affected by the decision to maintain a balanced Civil Works program. There are no "no cost" options.

Due to the constrained O&M budget, specific funding for this work could not be identified in the fiscal year 1998 President's budget due to funding requirements of other more critical O&M activities. If no additional funds are received in fiscal year 1998, the Albuquerque District will only make minimal progress on the development of the water operations model and other associated activities using extremely limited project operation and maintenance funds. Also, the district will only be able to minimally coordinate related activities with the other Federal Agencies involved.

However, the allocation of funds available for O&M in the fiscal year 1998 budget is ultimately dependent upon Congressional action on the budget and, of course, upon actual circumstances in the field as Corps Division and District Commanders implement the O&M program during the budget year. It is too early to anticipate the precise manner and extent to which individual commanders will apply cost savings and efficiency measures. We most certainly will make every effort to allocate funds among projects and project purposes so as to minimize the impact on current users of project services.

Question. How much funding is needed in fiscal year 1998 and how will the funds be used?

General FUHRMAN. Subject to the usual qualifications, a fiscal year 1998 capability of $1,165,000 is approved for the Corps of Engineers share to develop the model and related activities for water management.

Question. What is the schedule for completing the evaluation of alternatives and making a recommendation?

General FUHRMAN. If additional funding is made available, completion of evaluation of the computer model program used in the "Test Case" and the final decision

on which particular program to modify for the full basin could be made in November 1997.

Question. What other Federal, State or local agencies are involved in the work?

General FUHRMAN. The principal federal agencies involved with development of the model are the Corps of Engineers; U.S. Fish and Wildlife Service; U.S. Geological Survey; U.S. Bureau of Reclamation; Bureau of Indian Affairs; and International Boundary and Water Commission (U.S. Section). The states include Colorado; New Mexico; and Texas; including their respective State Engineers. Local groups include the Cities of Albuquerque and Santa Fe, New Mexico.

Question. Who other than the Corps is providing funding to support this work?

General FUHRMAN. The Bureau of Reclamation provides funding.

Question. Do those agencies have funding requested in their fiscal year 1998 budgets?

General FUHRMAN. The Bureau of Reclamation has $170,000 in the fiscal year 1998 President's budget for the model in their Middle Rio Grande Project under operation and maintenance.

DEVILS LAKE, NORTH DAKOTA

Question. What can be done in fiscal year 1997 to expedite the Devils Lake feasibility study? If so, what needs to be done in the way of resources or direction?

General FUHRMAN. Currently, we are focusing our resources on measures related to the rising lake level, i.e. the outlet, upper basin storage and water quality. In general, little can be done to substantially speed up the study process. Some elements of the feasibility study could be accelerated with unlimited funding; however, critical path items will continue to control the schedule.

FISCAL YEAR 1997 STUDIES AND PROJECTS NOT BUDGETED IN FISCAL YEAR 1998

Question. Provide for the record a list of all studies and projects funded in fiscal year 1997 for which no funding is requested in the fiscal year 1998 budget. Include a brief explanation of why additional funding is not requested.

Mr. LANCASTER. I will provide it for the record.

[The information follows:]

ALL FY 1997 CONFERENCE STUDIES/PROJECTS NOT IN FY 1998 BUDGET

STUDY/PROJECT NAME	REASON FOR NOT BUDGETING FOR FY 98
GENERAL INVESTIGATIONS	
CHIGNIK HARBOR, AK	STUDY FULLY FUNDED
ALAMO LAKE, AZ	PROCEEDING UNDER O&M CONTRACT
GILA RIVER, TORTOLITA DRAINAGE AREA, AZ	NOT ECONOMICALLY JUSTIFIED
CENTRAL BASIN GROUNDWATER PROJECT, CA	NOT IN ACCORD WITH POLICY
CITIES OF ARCADIA AND SIERRA MADRE, CA	NOT IN ACCORD WITH POLICY
CITY OF HUNTINGTON BEACH, CA	NOT IN ACCORD WITH POLICY
CRESCENT CITY HARBOR, CA	PED FULLY FUNDED
MALIBU COASTAL AREA, CA	LACK OF LOCAL SUPPORT
N CA STREAMS, WINTERS & VICINITY, CA	PROCEEDING VIA CONTINUING AUTHORITIES
NORCO BLUFFS, SANTA ANA RIVER, CA	NOT IN ACCORD WITH POLICY
NOYO RIVER AND HARBOR (BREAKWATER), CA	PED FULLY FUNDED
PENINSULA BEACH, CA	NOT IN ACCORD WITH POLICY
SACRAMENTO-SAN JOAQUIN DELTA, LITTLE HOLLAND TRACT, CA	LACK OF LOCAL SUPPORT
SAN JOAQUIN RIVER BASIN, CALIENTE CREEK STREAM GROUP, CA	LACK OF LOCAL SUPPORT
SANTA MONICA WATER INFRASTRUCTURE RELIABILITY, CA	NOT IN ACCORD WITH POLICY
SEVEN OAKS AND PRADO DAMS WATER CONSERVATION, CA	SPONSOR PROCEEDING INDEPENDENTLY
VENTURA AND SANTA BARBARA COUNTY SHORELINE, CA	NOT IN ACCORD WITH POLICY
DELAWARE RIVER MAIN CHANNEL DEEPENING, DE, NJ AND PA	LACK OF LOCAL SUPPORT
BREVARD COUNTY, FL	NOT IN ACCORD WITH POLICY
DADE COUNTY WATER REUSE FACILITY, FL	NOT IN ACCORD WITH POLICY
HILLSBORO COUNTY, FL	NOT IN ACCORD WITH POLICY
LIDO KEY SARASOTA COUNTY, FL	NOT IN ACCORD WITH POLICY
ST JOHNS RIVER, FL	NOT IN ACCORD WITH POLICY
MAUI SECOND HARBOR, MAUI, HI	LACK OF LOCAL SUPPORT
FREEPORT, IL	STUDY TERMINATED, NO IMPLEMENTABLE PLAN
OHIO RIVER, SOUTHEASTERN ILLINOIS, IL	NOT IN ACCORD WITH POLICY
PEORIA RIVERFRONT DEVELOPMENT, IL	DECISION DOCUMENT UNDER REVIEW
LAKE GEORGE, HOBART, IN	NOT IN ACCORD WITH POLICY
LITTLE CALUMET RIVER BASIN (CADY MARSH DITCH), IN	NOT IN ACCORD WITH POLICY
NEW HARMONY, IN	NOT IN ACCORD WITH POLICY
TIPPECANOE RIVER, IN - SEDIMENTATION	LACK OF LOCAL SUPPORT
GRAND (NEOSHO) RIVER, KS	STUDIES COMPLETE
KANOPOLIS LAKE, KS	TERMINATED AT SPONSOR'S REQUEST
LOWER CUMBERLAND RIVER,KY	LACK OF LOCAL SUPPORT
PANTHER CREEK, KY	LACK OF LOCAL SUPPORT
BAYOU BLANC;CROWLEY,LA.	NOT IN ACCORD WITH POLICY

ALL FY 1997 CONFERENCE STUDIES/PROJECTS NOT IN FY 1998 BUDGET

STUDY/PROJECT NAME	REASON FOR NOT BUDGETING FOR FY 98
SABINE DIVERSION CANAL, LA	NOT IN ACCORD WITH POLICY
ST TAMMANY PARISH, LA	BUDGETED FOR CONSTRUCTION
WEST BANK - EAST OF HARVEY CANAL, LA	BUDGETED FOR CONSTRUCTION
CHESAPEAKE BAY TIME VARIABLE MODEL, MD, VA, PA AND DC	MODEL COMPLETED
JENNINGS RANDOLPH LAKE - REALLOCATION, MD AND WV	NEGATIVE REPORT
GREAT LAKES CONNECTING CHAN & HRBRS REPL LOCK, MI	LACK OF LOCAL SUPPORT
FABIUS RIVER LEVEE AND DRAINAGE DISTRICT, MO	NEGATIVE REPORT
TENNESSEE RIVER & TRIBUTARIES,NC	LACK OF LOCAL SUPPORT
BARNEGAT INLET TO LITTLE EGG HARBOR, NJ	NOT IN ACCORD WITH POLICY
BRIGANTINE INLET TO GREAT EGG HRBR INLT, (ABSECON ISLAND), NJ	NOT IN ACCORD WITH POLICY
GREAT EGG INLET TO TOWNSEND INLET, NJ	NOT IN ACCORD WITH POLICY
MANASQUAN INLET TO BARNEGAT INLET, NJ	NOT IN ACCORD WITH POLICY
RARITAN BAY AND SANDY HOOK BAY, (CLIFFWOOD BEACH), NJ	NOT IN ACCORD WITH POLICY
RARITAN RIVER BASIN, GREEN BOOOK SUB-BASIN, NJ	DECISION DOCUMENT UNDER REVIEW
TOWNSENDS INLET TO CAPE MAY INLET, NJ	NOT IN ACCORD WITH POLICY
LAS CRUCES, NM	BUDGETED FOR CONSTRUCTION
RIO CHAMA, ABIQUIU DAM TO ESPANOLA, NM	NEGATIVE REPORT
LONG BEACH ISLAND, NY	NOT IN ACCORD WITH POLICY
NORTH SHORE OF LONG ISLAND, NY	NOT IN ACCORD WITH POLICY
SOUTH SHORE OF STATEN ISLAND, NY	NOT IN ACCORD WITH POLICY
YONKERS SHORELINE, NY	NOT IN ACCORD WITH POLICY
CUYAHOGA RIVER, CLEVELAND, (BULKHEADS), OH	FULLY FUNDED
HOCKING RIVER BASIN ENVIRONMENTAL RESTORATION, OH	LACK OF LOCAL SUPPORT
MIDDLE FORK WILLAMETTE FISHERY RESTORATION, OR	DEFERRED AT SPONSORS REQUEST
JUNIATA RIVER BASIN, PA	LACK OF LOCAL SUPPORT
LACKAWANNA RIVER, (PLOT) SCRANTON, PA	NOT ECONOMICALLY JUSTIFIED
MUSSERS DAM, MIDDLE CREEK, SNYDER COUNTY, PA	NOT IN ACCORD WITH POLICY
SCHUYLKILL HAVEN (SCHUYLKILL RIVER BASIN), PA	LACK OF LOCAL SUPPORT
GEORGETOWN HARBOR, SC	NEGATIVE REPORT
DUCK RIVER BASIN, TN	LACK OF LOCAL SUPPORT
WING DEER PARK, BOONE LAKE, JOHNSON CITY, TN	LACK OF LOCAL SUPPORT
HOUSTON - GALVESTON NAVIGATION CHANNELS, TX	BUDGETED FOR CONSTRUCTION
AIWW BRIDGE AT GREAT BRIDGE, VA	BUDGETED FOR CONSTRUCTION
CHESAPEAKE BAY SHORELINE, POQUOSON, VA	NOT IN ACCORD WITH POLICY
JOHN H KERR LAKE, VA & NC	NEGATIVE REPORT
NORFOLK VIRGINIA, VICINITY OF WILLOUGHBY SPIT, VA	NOT IN ACCORD WITH POLICY
POWELL RIVER WATERSHED,VA	LACK OF LOCAL SUPPORT
SANDBRIDGE, VIRGINIA BEACH, VA	NOT IN ACCORD WITH POLICY

ALL FY 1997 CONFERENCE STUDIES/PROJECTS NOT IN FY 1998 BUDGET

STUDY/PROJECT NAME	REASON FOR NOT BUDGETING FOR FY 98
FOX RIVER, WI	NEGOTIATIONS WITH STATE ONGOING
KANAWHA RIVER BASIN COMP, (MARLINTON/GREENBRIER), WV	LACK OF LOCAL SUPPORT
MERCER COUNTY, WV	LACK OF LOCAL SUPPORT
TYGART, PHILIPPI, WV	LACK OF LOCAL SUPPORT

ALL FY 1997 CONFERENCE STUDIES/PROJECTS NOT IN FY 1998 BUDGET

STUDY/PROJECT NAME	REASON FOR NOT BUDGETING FOR FY 98
CONSTRUCTION, GENERAL	
BETHEL BANK STABILIZATION, AK	STREAMBANK EROSION CONTROL IS LOW PRIORITY
DILLINGHAM, AK	SHORELINE EROSION CONTROL IS LOW PRIORITY
BAYOU LA BATRE, AL	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
RILLITO RIVER, AZ	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
SAN FRANCISCO BAY TO STOCKTON, CA	DECISION DOCUMENT (GRR) NOT COMPLETE
SILVER STRAND SHORELINE, IMPERIAL BEACH, CA	NEW BEACH NOURISHMENT IS LOW PRIORITY
SURFSIDE - SUNSET - NEWPORT BEACH, CA	NEW BEACH NOURISHMENT IS LOW PRIORITY
FAULKNERS ISLAND, CT	SHORELINE EROSION CONTROL IS LOW PRIORITY
FORT PIERCE BEACH, FL	NEW BEACH NOURISHMENT IS LOW PRIORITY
LEE COUNTY, FL (REIMBURSEMENT)	PERIODIC NOURISHMENT CONTRACT EXPIRED
PANAMA CITY BEACHES, FL	NEW BEACH NOURISHMENT IS LOW PRIORITY
ST. JOHNS COUNTY (ST. AUGUSTINE BEACH), FL	NEW BEACH NOURISHMENT IS LOW PRIORITY
TYBEE ISLAND, GA	NEW BEACH NOURISHMENT IS LOW PRIORITY
ALENAIO STREAM, HAWAII, HI	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
KAWAIHAE SMALL BOAT HARBOR, HAWAII, HI	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
WEST DES MOINES, DES MOINES, IA	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
EAST ST LOUIS AND VICINITY (INTERIOR FLOOD CONTROL), IL	ECONOMIC REVALUATION NOT COMPLETE
O'HARE RESERVOIR, IL	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
INDIANA SHORELINE EROSION, IN	RESPONSIBILITY OF NATIONAL PARK SERVICE
INDIANAPOLIS CENTRAL WATERFRONT, IN	NEW RECREATION IS LOW PRIORITY
OHIO RIVER FLOOD PROTECTION, IN	OPERATION AND MAINTENANCE SHOULD BE LOCAL RESPONSIBILITY
SALYERSVILLE, KY	INCREMENTAL COST OF PREFERRED PLAN LOCAL RESPONSIBILITY
GRAND ISLE AND VICINITY, LA	DECISION DOCUMENT (GDM) NOT COMPLETE
LAKE PONTCHARTRAIN AND VICINITY, LA (PARALLEL PROTECTION)	INCREMENTAL COST OF PREFERRED PLAN LOCAL RESPONSIBILITY
LAKE PONTCHARTRAIN STORM WATER DISCHARGE, LA	MODIFYING LOCAL WASTEWATER TREATMENT PLANT IS LOW PRIORITY
OUACHITA RIVER LEVEES, LA	LEVEE REPAIR SHOULD BE NON-FEDERAL RESPONSIBILITY
RED RIVER BELOW DENISON DAM, LA, AR, TX	LEVEE REPAIR SHOULD BE NON-FEDERAL RESPONSIBILITY
RED RIVER EMERGENCY BANK PROTECTION, LA	NO PLAN DEVELOPED
CHASKA, MN	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
STILLWATER, MN	STREAMBANK EROSION CONTROL IS LOW PRIORITY
NATCHEZ BLUFF, MS	STREAMBANK EROSION CONTROL IS LOW PRIORITY
SOURIS RIVER, ND	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
NEW YORK CITY WATERSHED, NY	WATER SUPPLY SHOULD BE NON-FEDERAL RESPONSIBILITY
NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT, NY & NJ	LOW PRIORITY BENEFITS - REAL ESTATE ENHANCEMENT
BONNEVILLE POWERHOUSE PHASE I, OR & WA (MAJOR REHAB)	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
BONNEVILLE SECOND POWERHOUSE, OR & WA	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS

ALL FY 1997 CONFERENCE STUDIES/PROJECTS NOT IN FY 1998 BUDGET

STUDY/PROJECT NAME	REASON FOR NOT BUDGETING FOR FY 98
COOS BAY, OR	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
GLEN FOERD, PA	STREAMBANK EROSION CONTROL IS LOW PRIORITY
SOUTH CENTRAL PENNSLYVANIA, PA	SEWERAGE TREATMENT IS LOW PRIORITY
WEST VIRGINIA AND PENNSYLVANIA FLOOD CONTROL, PA & WV	LACKS ECONOMIC JUSTIFICATION
ALLENDALE DAM, RI	PRIVATE DAM IS LOCAL RESPONSIBILITY
SEEKONK RIVER, RI	RAILROAD BRIDGES IS NON-FED RESPONSIBILITY
BEALS CREEK, BIG SPRING, TX	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
RAY ROBERTS LAKE, TX	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
SAM RAYBURN DAM AND RESERVOIR, TX (DAM SAFETY)	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
WALLISVILLE LAKE, TX	WATER SUPPLY SHOULD BE NON-FEDERAL RESPONSIBILITY
LITTLE DELL, UT	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
JAMES R OLIN FLOOD CONTROL PROJECT, VA	SINGLE BENEFICIARY SHOULD BE LOCAL RESPONSIBILITY
RICHMOND FILTRATION PLANT, VA	WATER SUPPLY SHOULD BE NON-FEDERAL RESPONSIBILITY
VIRGINIA BEACH, VA	NEW BEACH NOURISHMENT IS LOW PRIORITY
VIRGINIA BEACH, VA (REIMBURSEMENT)	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
HOWARD HANSON DAM, WA (DAM SAFETY)	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
LAFARGE LAKE, KICKAPOO RIVER, WI	WATER QUALITY SHOULD BE NON-FEDERAL RESPONSIBILITY
LEV & TUG FORKS & UPPER CUMB RIVER, WV, VA & KY-HARLAN	LACKS ECONOMIC JUSTIFICATION
LEV & TUG FORKS & UPPER CUMB RIVER, WV, VA & KY-HARLAN	LACKS ECONOMIC JUSTIFICATION
LEV & TUG FORKS & UPPER CUMB RIVER, WV, VA & KY-HATFIELD BTM	LACKS ECONOMIC JUSTIFICATION
LEV & TUG FORKS & UPPER CUMB RIVER, WV, VA & KY-LOWER MINGO	LACKS ECONOMIC JUSTIFICATION
LEV & TUG FORKS & UPPER CUMB RIVER, WV, VA & KY-MARTIN COUNTY	LACKS ECONOMIC JUSTIFICATION
LEV & TUG FORKS & UPPER CUMB RIVER, WV, VA & KY-MIDDLESBORO	LACKS ECONOMIC JUSTIFICATION
LEV & TUG FORKS & UPPER CUMB RIVER, WV, VA & KY-MIDDLESBORO	LACKS ECONOMIC JUSTIFICATION
LEV & TUG FORKS & UPPER CUMB RIVER, WV, VA & KY-PIKE COUNTY	LACKS ECONOMIC JUSTIFICATION
LEV & TUG FORKS & UPPER CUMB RIVER, WV, VA & KY-UPPER MINGO	LACKS ECONOMIC JUSTIFICATION
LEV & TUG FORKS & UPPER CUMB RIVER, WV, VA & KY-WILLIAMSBURG	LACKS ECONOMIC JUSTIFICATION
LEV & TUG FORKS & UPPER CUMB RIVER, WV, VA & KY-WILLIAMSBURG	LACKS ECONOMIC JUSTIFICATION
MOOREFIELD, WV	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS
PETERSBURG, WV	PROJECT WILL COMPLETE WITH AVAILABLE FUNDS

Question. Provide for the record a list showing each study, project, or program included in the fiscal year 1998 budget request which is not authorized or which will require authorization, reauthorization or some type of statutory authority in order for the Corps to use funds requested in the 1998 budget.

General FUHRMAN. Sir, all studies, projects and programs for which funds have been requested in the fiscal year 1998 budget request are authorized.

UNOBLIGATED BALANCES AT END OF FISCAL YEAR 1997

Question. Provide for the record a list by appropriation account of statutory earmarked projects, studies or activities that had unobligated balances carried over into fiscal year 1997 and where funds are expected to be unobligated and carried over into fiscal year 1998. Include a brief explanation of why the funds have not been spent, and the likelihood of future use of funding.

General FURHMAN. Yes sir, I will.

[The information follows:]

UNOBLIGATED EARMARKED FUNDS AT END OF FISCAL YEAR 1997

(IN THOUSANDS OF DOLLARS)

PROJECT NAME	FY 96 UNOBL C.O.	FY 97 UNOBL C.O.	REASON FUNDS UNOBLIGATED AT END OF FY 97	FUTURE USE
GENERAL INVESTIGATIONS				
CALLEGUAS CREEK, CA	271	271	LACK OF SPONSOR SUPPORT.	NOT LIKELY
LOS ANGELES RIVER WATERCOURSE IMPROVEMENT, CA	530	360	SCHEDULE SLIPPAGE.	LIKELY
MONROE COUNTY, FL	140	130	SCHEDULE SLIPPAGE.	LIKELY
LAKE GEORGE, HOBART, IN	307	82	SCHEDULE SLIPPAGE.	LIKELY
CLINTON RIVER SPILLWAY, MI	50	50	CONSTRUCTION ESSENTIALLY COMPLETE.	UNKNOWN
STE GENEVIEVE, MO	818	99	EXCEEDS CURRENT YEAR REQUIREMENTS.	LIKELY
PASSAIC RIVER MAINSTEM, NJ	1,507	100	SCHEDULE SLIPPAGE.	LIKELY
BUFFALO FLOODING & WATER QUALITY STUDY, NY	121	62	SCHEDULE SLIPPAGE.	LIKELY
BUFFALO SMALL BOAT, NY - NFTA	15	15	STUDY TERMINATED.	NOT LIKELY
OLCOTT HARBOR, NY	271	18	SCHEDULE SLIPPAGE.	LIKELY
ONONDAGA LAKE NY	872	814	SCHEDULE SLIPPAGE.	LIKELY
SOUTH SHORE OF STATEN ISLAND, NY	61	44	LACK OF SPONSOR SUPPORT.	UNKNOWN
GENEVA STATE PARK SHORELINE, OH	105	94	STUDY TERMINATED.	NOT LIKELY
LACKAWANNA RIVER BASIN, PA	217	217	LACK OF SPONSOR SUPPORT.	NOT LIKELY
MUSSERS DAM, MIDDLE CREEK, SNYDER COUNTY, PA	86	49	EXCEEDS CURRENT YEAR REQUIREMENTS.	LIKELY
RED RIVER WATERWAY, SHREVEPORT, LA TO DAINGERFIELD, TX	1,879	1,879	NO REMAINING STUDY REQUIREMENTS.	NOT LIKELY
RED RIVER WATERWAY,TX,AR,OK&LA (INDEX AR TO DENISON DAM TX)	126	126	STUDY COMPLETE.	NOT LIKELY
WEST VIRGINIA COMPREHENSIVE, WV	476	348	LACK OF SPONSOR SUPPORT.	UNKNOWN
WEST VIRGINIA PORT DEVELOPMENT, WV	521	369	LACK OF SPONSOR SUPPORT.	UNKNOWN
TOTAL - GENERAL INVESTIGATIONS	8,373	5,127		
CONSTRUCTION, GENERAL				
HOMER SPIT, AK	3,291	1,191	DELAY IN CONTRACT AWARD.	LIKELY
ST GEORGE HARBOR, AK	1,934	1,934	LOCAL FINANCING PROBLEMS.	NOT LIKELY
RED RIVER EMERGENCY BANK PROTECTION, AR & LA	1,315	2,623	INSUFFICIENT FUNDS FOR NEXT FULLY FUNDED CONTRACT.	NOT LIKELY
SACRAMENTO RIVER FLOOD CONTROL PROJECT, CA (GCID)	200	200	DELAY PENDING BUREC DETERM OF TYPE OF FISH SCREENS.	NOT LIKELY
SACRAMENTO RIVER FLOOD CONTROL PROJECT, CA (LITTLE HOLLAND)	2,189	1,200	CONGRESS ADDED MORE FUNDS THAN COULD BE USED.	LIKELY
SANTA ANA RIVER MAINSTEM, CA	9,262	12,845	LOCAL FINANCING PROBLEMS.	LIKELY
KISSIMMEE RIVER, FL	13,448	10,523	SCHEDULE SLIPPAGE.	LIKELY
MELALEUCA QUARANTINE FACILITY, FL	360	150	CONTINUE E&D-INSUFFICIENT FUNDS FOR CONSTRUCTION.	LIKELY
PORT SUTTON CHANNEL, FL	350	350	LACK OF SPONSOR SUPPORT.	NOT LIKELY
SAVANNAH HARBOR DEEPENING, GA	1,989	889	DELAY IN COMPLETING PROJECT.	LIKELY
DES MOINES RECREATION RIVER AND GREENBELT, IA	290	190	DELAY IN DEVELOPMENT OF CONCEPTUAL PLAN.	LIKELY
MCCOOK AND THORNTON RESERVOIRS (CUP), IL	6,356	4,922	SCOPE OF PROJECT UNDER NEGOTIATION WITH SPONSOR.	LIKELY
LAKE PONTCHARTRAIN AND VICINITY, LA (HURRICANE PROTECTION)	866	3,491	DELAY IN COMPLETION OF BRIDGE DESIGN BY SPONSOR.	LIKELY
LAKE PONTCHARTRAIN STORM WATER DISCHARGE, LA	2,129	3,826	LOCAL SPONSOR REQUESTED REVISIONS TO PROJECT PLAN.	LIKELY
OUACHITA RIVER LEVEES, LA	4,719	695	DELAYS IN ACQUIRING ROW.	LIKELY

UNOBLIGATED EARMARKED FUNDS AT END OF FISCAL YEAR 1997

(IN THOUSANDS OF DOLLARS)

PROJECT NAME	FY 96 UNOBL C.O.	FY 97 UNOBL C.O.	REASON FUNDS UNOBLIGATED AT END OF FY 97	FUTURE USE
RED RIVER BELOW DENISON DAM, LA, AR & TX	3,688	2,584	LOCAL SPONSOR FINANCIALLY UNABLE TO PROVIDE ROW.	LIKELY
RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LA	8	2,821	CONGRESS FULLY FUNDED VISITORS CENTER.	LIKELY
ANACOSTIA RIVER AND TRIBUTARIES, MD (SEC 1135)	1,535	1,533	LACK OF SPONSOR SUPPORT.	NOT LIKELY
CLINTON RIVER SPILLWAY, MI	231	41	CONGRESS FULLY FUNDED PROJECT.	LIKELY
SILVER BAY HARBOR, MN	2,419	1,019	CONGRESS FULLY FUNDED PROJECT.	LIKELY
ST GENEVIEVE, MO	3,986	3,906	CONGRESS ADDED MORE FUNDS THAN COULD BE USED.	LIKELY
SOWASHEE CREEK, MERIDIAN, MS	3,459	3,448	SPONSOR FINANCIALLLY UNABLE TO SUPPORT PROJECT.	NOT LIKELY
HAMLET CITY LAKE, NC	2,045	1,165	HTRW PROBLEMS.	LIKELY
FT YATES BRIDGE, ND	284	141	DELAY ON AGREEMENT FOR ARCHAELOGICAL TESTING.	LIKELY
PLATTE RIVER FLOOD & RELATED STREAMBANK EROSION CONTROL, NE	1,409	1,409	LACK OF SPONSOR SUPPORT.	NOT LIKELY
HACKENSACK MEADOWLANDS, NJ	2,478	2,275	LOCAL INTERESTS DESIRE GRANT WHICH IS NOT AUTHORIZED.	NOT LIKELY
RAMAPO RIVER AT OAKLAND, NJ	16	237	SCOPE OF PROJECT UNDER NEGOTIATION WITH SPONSOR.	LIKELY
ATLANTIC COAST OF NYC, ROCKAWAY INLET TO NORTON POINT, NY	987	900	DESIGN OF COMFORT STATIONS COMPLETE.	NOT LIKELY
NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT, NY & NJ	3,816	2,849	LOCAL FINANCING PROBLEMS.	NOT LIKELY
ROCHESTER HARBOR, NY	2,491	2,057	CONGRESS FULLY FUNDED PROJECT.	LIKELY
TULSA AND WEST TULSA LOCAL PROTECTION PROJECT, OK	493	465	HTRW PROBLEMS.	LIKELY
COLUMBIA RIVER, SEAFARERS MEMORIAL, HAMMOND, OR	98	98	LOCAL FINANCING PROBLEMS.	NOT LIKELY
ELK CREEK LAKE, OR	1,813	1,409	LAWSUITS DELAYED WORK ON DEFINING SCOPE OF DESIGN.	LIKELY
LACKAWANNA RIVER, OLYPHANT, PA	43	348	LOCAL FINANCING PROBLEMS.	LIKELY
BROAD TOP REGION, PA	4,789	4,750	FUNDS EXCESS TO CURRENT YEAR NEEDS.	LIKELY
GLEN FOERD, PA	184	622	DELAY IN EXECUTION OF PCA.	LIKELY
LACKAWANNA RIVER, STILLWATER, PA (SEC 1135)	1,999	1,999	LACK OF SPONSOR SUPPORT.	NOT LIKELY
SOUTH CENTRAL PENNSYLVANIA, PA	16,600	20,148	CONGRESS ADDED MORE FUNDS THAN COULD BE USED.	LIKELY
ALLENDALE DAM, RI	0	165	DELAY IN ACQUIRING REAL ESTATE.	LIKELY
NARRAGANSETT TOWN BEACH, NARRAGANSETT, RI	101	101	LACK OF SPONSOR SUPPORT.	NOT LIKELY
SEEKONK RIVER, PROVIDENCE, RI	174	678	LOCAL FINANCING PROBLEMS.	LIKELY
RICHMOND FILTRATION PLANT, VA	333	433	CONTRACTOR EARNINGS LESS THAN ANTICIPATED.	LIKELY
LEVISA AND TUG FORKS AND UPPER CUMBERLAND RIVER, WV, VA & KY	6,808	2,693	SCHEDULE SLIPPAGE.	LIKELY
SOUTHERN WEST VIRGINIA ENVIRONMENTAL RESTORATION, WV	4,610	2,958	DELAY IN COMPLETION OF DESIGN BY LOCAL INTERESTS.	LIKELY
TOTAL - CONSTRUCTION, GENERAL	115,595	108,281		
OPERATION AND MAINTENANCE:				
TUCSON DIVERSION CHANNEL, AZ	2,237	312	DELAYS IN EXECUTING PCA MODIFICATION.	LIKELY
LOS ANGELES COUNTY DRAINAGE AREA (HANSEN DAM), CA	1,308	289	DELAYS IN EXECUTING PCA MODIFICATION.	LIKELY
OCEANSIDE SAND BYPASS SYSTEM, CA	3,792	500	SAND BYPASS PLAN NOT ECONOMICALLY FEASIBLE.	LIKELY
SEPULVEDA DAM, CA	1,557	190	DELAYS IN EXECUTING PCA MODIFICATION.	LIKELY
TOTAL - OPERATION AND MAINTENANCE, GENERAL	8,894	1,291		

BALANCE TO COMPLETE REPORT

Question. Provide for the record an updated "balance to complete" report similar to that submitted to the House Energy and Water Development Appropriations subcommittee in prior years.

General BALLARD. Yes, sir.

[The information follows:]

SUMMARY OF PRECONSTRUCTION ENGINEERING AND DESIGN (PED) AND CONSTRUCTION IN FISCAL YEAR 1998 BUDGET REQUEST

[Dollars in thousands]

	No. of projects	Estimated Federal cost	Alocations through fiscal year 1997	Budget request fiscal year 1998	Balance to complete	
					Programed	Unprogramed
PRIOR TO AUTHORIZATION:						
Continuing PED	48	$1,627,664	$48,173	$21,673	$24,129	$1,533,689
Environmental Restoration	3	29,000	.....	540	1,110	27,350
Navigation	19	945,446	25,260	7,407	4,417	908,362
Flood Control	25	607,218	20,500	13,206	17,102	556,410
Multiple Purpose	1	46,000	2,413	520	1,500	41,567
FULLY AUTHORIZED PROJECTS:						
Continuing PED	23	1,222,879	54,689	14,429	11,533	1,142,228
Navigation	8	190,139	12,031	3,440	2,149	172,519
Beach Erosion Control	1	13,000	1,434	140	183	11,243
Flood Control	14	1,019,740	41,22	410,849	9,201	958,466
Total PED	71	2,850,543	102,862	36,102	35,662	2,675,917
Construction New Starts	7	499,341	26,406	294,294	.....	178,641
Navigation	3	358,241	21,849	157,751	.....	178,641
Flood Control	4	141,100	4,557	136,543	.....	.....
Continuing Construction	169	35,425,245	16,859,906	1,041,511	12,861,232	4,662,596
Navigation	35	9,123,763	5,358,870	251,880	2,548,408	964,605
Beach Erosion Control	21	4,001,445	495,779	65,646	2,995,675	444,345
Flood Control	83	9,961,098	4,271,064	392,701	2,197,039	3,100,294
Multiple Purpose	5	2,436,666	1,354,903	146,900	934,863	.....
Environmental Restoration	3	554,000	42,782	34,163	477,055	.....
MR&T Features	22	9,348,273	5,336,508	150,221	3,708,192	153,352
Major Rehabilitation (CG)	17	573,552	75,597	120,205	377,750	.....
Navigation	5	96,562	25,478	30,600	40,484	.....
Flood Control	3	57,050	9,747	15,305	31,998	.....
Multiple Purpose	9	419,940	40,372	74,300	305,268	.....
Dam Safety Assurance	11	214,020	24,637	37,276	152,107	.....

SUMMARY OF PRECONSTRUCTION ENGINEERING AND DESIGN (PED) AND CONSTRUCTION IN FISCAL YEAR 1998 BUDGET REQUEST—Continued

[Dollars in thousands]

	No. of projects	Estimated Federal cost	Alocations through fiscal year 1997	Budget request fiscal year 1998	Balance to complete	
					Programed	Unprogramed
Navigation	1	14,900	1,283	300	13,317	.....
Flood Control	8	102,920	20,245	36,081	46,594	.....
Multiple Purpose	2	96,200	3,109	895	92,196	.....
Total Construction	204	36,712,158	16,986,546	1,493,286	13,391,089	4,841,237
Grand Total	275	39,562,701	17,089,408	1,529,388	13,426,751	7,517,154

PRECONSTRUCTION ENGINEERING AND DESIGN IN FISCAL YEAR 1998 BUDGET (PRIOR TO AUTH)—CONTINUING PED

[In thousands of dollars]

Name	Federal cost		Allocation to date	Fiscal year 1998 budget	Balance to complete	
	Total estimate	PED			Programmed	Unprogrammed
ENVIRONMENTAL REST.:						
LOWER TRUCKEE RIVER, PYRAMID LAKE PAIUTE RESERVATION, NV	13,000	750	.....	300	450	12,250
LOWER TRUCKEE RIVER, WASHOE COUNTY, NV	13,000	600	.....	150	450	12,400
CONEMAUGH RVR BASIN, NANTY GLO ENVIRONMENTAL RESTORATION, PA	3,000	300	.....	90	210	2,700
TOTALS, NO. OF PROJECTS 3	29,000	1,650	.....	540	1,110	27,350
FLOOD CONTROL:						
COOK INLET, AK	3,755	330	205	125	.....	3,425
TUCSON DRAINAGE AREA, AZ	18,000	1,725	100	825	800	16,275
AMERICAN RIVER WATERSHED, CA	29,160	15,510	15,109	401	.....	13,650
ARROVO PASAJERO, CA	50,500	4,500	.....	1,000	3,500	46,000
KAWEAH RIVER, CA	18,400	2,400	900	1,100	400	16,000

N CA STREAMS, YUBA RIVER BASIN, CA	20,605	1,875	.....	50	1,825	18,730
SAN JOAQUIN RIVER BASIN, SOUTH SACRAMENTO COUNTY STREAMS, CA	26,000	1,275	.....	500	775	24,725
UPPER GUADALUPE RIVER, CA	42,500	1,500	.....	750	750	41,000
CEDAR HAMMOCK (WARES CREEK), FL	8,900	440	100	300	40	8,460
DES PLAINES RIVER, IL	100,000	880	.....	400	480	99,120
INDIANAPOLIS, WHITE RIVER (NORTH), IN	7,500	950	492	458	.....	6,550
TURKEY CREEK BASIN, KS AND MO	28,600	825	.....	261	564	27,775
METROPOLITAN LOUISVILLE, BEARGRASS CREEK, KY	5,925	925	83	525	317	5,000
EAST BATON ROUGE PARISH, LA	69,400	2,100	1,165	620	315	67,300
CROOKSTON, MN	6,190	750	169	400	181	5,440
PEARL RIVER WATERSHED, MS	85,056	6,593	355	2,640	3,598	78,463
BLUE RIVER BASIN, KANSAS CITY, MO	12,000	1,800	392	656	752	10,200
GRAND FORKS, ND	9,000	750	.....	178	572	8,250
ARECIBO RIVER, PR	12,469	1,700	1,035	665	.....	10,769
RIO NIGUA AT SALINAS, PR	8,888	1,088	150	267	671	7,800
EAST RIDGE, HAMILTON CO, TN	12,500	500	200	300	.....	12,000
METRO CENTER LEVEE, DAVIDSON CO, TN	3,100	150	.....	150	.....	2,950
FORT WORTH SUMPS, 14 AND 15, UPPER TRINITY RIVER BASIN, TX	11,050	405	.....	70	335	10,645
GRAHAM, TX (BRAZOS RIVER BASIN)	6,470	150	45	105	.....	6,320
HOWARD HANSON DAM, WA	11,250	1,687	.....	460	1,227	9,563
TOTALS, NO. OF PROJECTS 25	607,218	50,808	20,500	13,206	17,102	556,410
MULTIPLE PURPOSE: WILLAMETTE RIVER TEMPERATURE CONTROL, OR	46,000	4,433	2,413	520	1,500	41,567
TOTALS, NO. OF PROJECTS 1	46,000	4,433	2,413	520	1,500	41,567
NAVIGATION:						
SAND POINT HARBOR, AK	13,500	225	.....	37	188	13,275
ST PAUL HARBOR, AK	14,851	897	759	138	.....	13,954
PORT HUENEME, CA	6,500	500	.....	250	250	6,000
PORT OF LONG BEACH (DEEPENING), CA	16,420	910	750	160	.....	15,510
HILLSBORO INLET, FL	1,577	600	245	230	125	977
JACKSONVILLE HARBOR, FL	112,500	900	.....	100	800	111,600
PONCE DE LEON INLET, FL	6,250	563	.....	175	388	5,687
ST LUCIE INLET, FL	1,100	1,100	598	280	222	.....

PRECONSTRUCTION ENGINEERING AND DESIGN IN FISCAL YEAR 1998 BUDGET (PRIOR TO AUTH)—CONTINUING PED—Continued

[In thousands of dollars]

Name	Federal cost		Allocation to date	Fiscal year 1998 budget	Balance to complete	
	Total estimate	PED			Programmed	Unprogrammed
BRUNSWICK HARBOR, GA	26,650	1,600	.....	1,100	500	25,050
LOWER SAVANNAH RIVER, GA AND SC	2,580	600	506	94	.....	1,980
KENTUCKY LOCK, KY	197,500	10,881	9,131	1,750	.....	186,619
PORT FOURCHON, LA	2,500	373	244	129	.....	2,127
BALTIMORE HARBOR ANCHORAGES AND CHANNELS, MD AND VA	24,000	675	150	338	187	23,325
CAPE FEAR—NORTHEAST (CAPE FEAR) RIVER, NC	154,124	1,330	1,000	330	.....	152,794
CHARLESTON HARBOR, SC (DEEPENING AND WIDENING)	95,174	425	225	200	.....	94,749
GIWW—ARANSAS NATIONAL WILDLIFE REFUGE, TX	19,510	1,830	1,506	324	.....	17,680
CROWN BAY CHANNEL, VI	3,710	700	89	270	341	3,010
LONDON LOCKS AND DAM, WV	17,000	2,295	207	672	1,416	14,705
MARMET LOCKS AND DAM, WV	230,000	10,680	9,850	830	.....	219,320
TOTALS, NO. OF PROJECTS 19	945,446	37,084	25,260	7,407	4,417	908,362
GRAND TOTALS	1,627,664	93,975	48,173	21,673	24,129	1,533,689

PRECONSTRUCTION ENGINEERING AND DESIGN IN FISCAL YEAR 1998 BUDGET (AUTH PROJECTS)—CONTINUING PED

[In thousands of dollars]

Name	Total estimate Federal cost	Federal cost of PED	Allocation to date	Fiscal year 1998 budget	Balance to complete	
					Programmed	Unprogrammed
BEACH EROSION: NASSAU COUNTY, FL	13,000	1,757	1,434	140	183	11,243
TOTALS, NO. OF PROJECTS 1	13,000	1,757	1,434	140	183	11,243

FLOOD CONTROL:						
MCKINNEY BAYOU, AR AND TX	2,250	450	57	200	193	1,800
NAPA RIVER, CA	70,800	15,000	12,980	1,600	420	55,800
PAJARO RIVER AT WATSONVILLE, CA	6,800	2,270	1,770	500	.....	4,530
NUTWOOD DRAINAGE AND LEVEE DISTRICT, IL	7,662	885	175	395	315	6,777
WOOD RIVER D&LD, MADISON COUNTY, IL	2,069	225	.....	112	113	1,844
COMITE RIVER, LA	70,577	6,400	6,135	265	.....	64,177
BRUNSWICK COUNTY BEACHES, NC	31,200	5,300	2,640	1,000	1,660	25,900
RIO GUANAJIBO, PR	21,116	1,875	150	700	1,025	19,241
BRAYS BAYOU, HOUSTON, TX	271,110	5,889	4,059	1,830	.....	265,221
CYPRESS CREEK, HOUSTON, TX	125,733	2,900	1,963	937	.....	122,833
DALLAS FLOODWAY EXTENSION, TRINITY RIVER, TX	30,900	6,310	3,347	940	2,023	24,590
GREENS BAYOU, HOUSTON, TX	162,240	5,700	3,704	1,000	996	156,540
RAYMONDVILLE DRAIN, TX	75,818	1,650	134	370	1,146	74,168
SOUTH MAIN CHANNEL, TX	141,465	6,420	4,110	1,000	1,310	135,045
TOTALS, NO. OF PROJECTS 14	1,019,740	61,274	41,224	10,849	9,201	958,466
NAVIGATION:						
C&D CANAL—BALTIMORE HBR CONN CHANNELS, DE AND MD (DEEPENING)	69,800	3,225	1,225	1,625	375	66,575
BIG BEND CHANNEL	4,900	303	223	80	.....	4,597
INTRACOASTAL WATERWAY, PALM BEACH COUNTY, FL	4,027	300	126	90	84	3,727
KIKIAOLA SMALL BOAT HARBOR, KAUAI, HI	6,471	1,169	902	267	.....	5,302
ST LOUIS HARBOR, MO AND IL	13,986	3,843	2,041	500	1,302	10,143
ARTHUR KILL CHANNEL—HOWLAND HOOK MARINE TERMINAL, NY AND NJ	45,400	3,600	3,222	378	.....	41,800
WILMINGTON HARBOR—NORTHEAST CAPE FEAR RIVER, NC	27,600	2,080	1,980	100	.....	25,520
NECHES RIVER AND TRIBUTARIES SALTWATER BARRIER, TX	17,955	3,100	2,312	400	388	14,855
TOTALS, NO. OF PROJECTS 8	190,139	17,620	12,031	3,440	2,149	172,519
GRAND TOTALS, NO. OF PROJECTS 23	1,222,879	80,651	54,689	14,429	11,533	1,142,228

CONSTRUCTION NEW STARTS IN FISCAL YEAR 1998 BUDGET

[In thousands of dollars]

Name	Total estimate Federal cost	Allocation to date	Fiscal year 1998 budget	Balance to complete	
				Programmed	Unprogrammed
FLOOD CONTROL:					
AMERICAN RIVER WATERSHED, CA	47,500	2,756	44,744	.....	.....
EVERGLADES AND SOUTH FLORIDA ECOSYSTEM RESTORATION, FL	75,000	.....	75,000	.....	.....
ANACOSTIA RIVER AND TRIBUTARIES, MD AND DC	12,000	1,201	10,799	.....	.....
LAS CRUCES, NM	6,600	600	6,000	.....	.....
TOTALS, NO. OF PROJECTS 4	141,100	4,557	136,543	.....	.....
NAVIGATION:					
WILMINGTON HARBOR CHANNEL WIDENING, NC	18,600	1,088	17,512	.....	.....
HOUSTON—GALVESTON NAVIGATION CHANNELS, TX	316,541	18,800	119,100	.....	178,641
AIWW BRIDGE AT GREAT BRIDGE, VA	23,100	1,961	21,139	.....	.....
TOTALS, NO. OF PROJECTS 3	358,241	21,849	157,751	.....	178,641
GRAND TOTALS, NO. OF PROJECTS 7	499,341	26,406	294,294	.....	178,641

CONTINUING CONSTRUCTION IN FISCAL YEAR 1998 BUDGET

[In thousands of dollars]

Name	Total estimate Federal cost	Allocation to date	Fiscal year 1998 budget	Balance to complete	
				Programmed	Programmed
BEACH EROSION:					
DELAWARE COAST PROTECTION, DE	13,300	4,694	224	8,382	.....
DADE COUNTY, FL	163,300	55,847	8,185	99,268	.....
DUVAL COUNTY, FL	111,200	19,986	278	90,936	.....
MANATEE COUNTY, FL	43,600	5,518	206	37,876	.....

MARTIN COUNTY, FL	25,600	4,906	99	20,399	196
PALM BEACH COUNTY, FL (REIMBURSEMENT)	75,900	9,591	202	62,271	3,836
PINELLAS COUNTY, FL	129,000	31,147	4,586	79,119	14,148
SARASOTA COUNTY, FL	55,200	13,213	500	39,582	1,905
CHICAGO SHORELINE, IL	144,000	9,953	10,000	124,047	.....
ATLANTIC COAST OF MARYLAND, MD	265,000	29,930	1,797	233,273	.....
CAPE MAY INLET TO LOWER TOWNSHIP, NJ	92,700	13,699	280	72,461	6,260
GREAT EGG HARBOR INLET AND PECK BEACH, NJ	375,000	29,894	3,076	342,030	.....
SANDY HOOK TO BARNEGAT INLET, NJ	1,115,000	84,304	15,116	1,015,580	.....
ATLANTIC COAST OF NYC, ROCKAWAY INLET TO NORTON POINT, NY	81,000	12,500	1,000	49,500	18,000
EAST ROCKAWAY INLET TO ROCKAWAY INLET AND JAMAICA BAY, NY	62,400	38,465	600	23,335	.....
FIRE ISLAND INLET TO JONES INLET, NY	326,000	30,588	285	295,127	.....
FIRE ISLAND INLET TO MONTAUK POINT, NY	526,000	41,678	4,802	79,520	400,000
CAROLINA BEACH AND VICINITY, NC	169,780	21,419	2,840	145,521	.....
WRIGHTSVILLE BEACH, NC	25,200	3,529	1,070	20,601	.....
PRESQUE ISLE PENINSULA, PA (PERMANENT)	61,730	15,553	500	45,677	.....
MYRTLE BEACH, SC	140,535	19,365	10,000	111,170	.....
TOTALS, NO. OF PROJECTS 21	4,001,445	495,779	65,646	2,995,675	444,345
ENVIRONMENTAL REST.:					
KISSIMMEE RIVER, FL	231,500	31,371	3,000	197,129	.....
CHESAPEAKE BAY OYSTER RECOVERY, MD	2,500	627	542	1,331	.....
POPLAR ISLAND, MD	320,000	10,784	30,621	278,595	.....
TOTALS, NO. OF PROJECTS 3	554,000	42,782	34,163	477,055	.....
FLOOD CONTROL:					
CLIFTON, AZ	13,800	11,500	2,300	.....	.....
CORTE MADERA CREEK, CA	43,800	22,527	500	10,042	10,731
COYOTE AND BERRYESSA CREEKS, CA	43,900	32,187	1,000	672	10,041
GUADALUPE RIVER, CA	69,200	44,775	19,000	5,425	.....
LOS ANGELES COUNTY DRAINAGE AREA, CA	180,000	29,668	11,700	138,632	.....
LOWER SACRAMENTO AREA LEVEE RECONSTRUCTION, CA	3,560	1,280	300	1,980	.....
MARYSVILLE/YUBA CITY LEVEE RECONSTRUCTION, CA	23,600	10,485	7,300	5,815	.....
MERCED COUNTY STREAMS, CA	91,800	16,490	1,100	900	73,310

CONTINUING CONSTRUCTION IN FISCAL YEAR 1998 BUDGET—Continued

[In thousands of dollars]

Name	Total estimate Federal cost	Allocation to date	Fiscal year 1998 budget	Balance to complete	
				Programmed	Programmed
MID–VALLEY AREA LEVEE RECONSTRUCTION, CA	15,300	4,195	3,100	8,005	.....
SACRAMENTO RIVER BANK PROTECTION PROJECT, CA	179,100	99,593	5,500	23,770	50,237
SACRAMENTO RIVER, GLENN–COLUSA IRRIGATION DISTRICT, CA	10,650	3,693	600	6,357	.....
SAN LORENZO RIVER, CA	12,640	1,571	4,200	6,869	.....
SAN LUIS REY RIVER, CA	61,100	55,700	5,400	.....	.....
SANTA ANA RIVER MAINSTEM, CA	778,000	513,462	52,900	66,271	145,367
SANTA PAULA CREEK, CA	20,300	13,680	4,000	2,620	.....
UPPER SACRAMENTO AREA LEVEE RECONSTRUCTION, CA	4,660	1,587	200	2,873	.....
WEST SACRAMENTO, CA	16,200	4,346	7,500	4,354	.....
ALAMOSA, CO	6,000	2,702	3,298	.....	.....
CENTRAL AND SOUTHERN FLORIDA, FL	1,431,000	435,207	27,400	136,363	832,030
FOUR RIVER BASINS, FL	180,700	73,819	693	273	105,915
IAO STREAM FLOOD CONTROL, MAUI, HI (DEF CORR)	13,046	326	275	12,445	.....
ALTON TO GALE ORGANIZED LEVEE DISTRICT, IL AND MO (DEF CORR)	108,530	96,484	[1] 575	.....	11,471
EAST ST LOUIS, IL	28,859	24,336	2,800	1,723	.....
LOVES PARK, IL	18,800	11,005	500	7,295	.....
MCCOOK AND THORNTON RESERVOIRS (CUP), IL	435,000	22,374	([2])	.....	412,626
REND LAKE, IL (DEF CORR)	5,940	678	5,262	.....	.....
FORT WAYNE METROPOLITAN AREA, IN	34,550	16,108	5,300	13,142	.....
LITTLE CALUMET RIVER, IN	114,000	48,012	5,300	60,688	.....
MISSOURI RIVER LEVEE SYSTEM, IA, NE, KS AND MO	217,567	95,788	1,000	23,610	97,169
MUSCATINE ISLAND, IA	6,610	1,527	2,000	3,083	.....
PERRY CREEK, IA	41,874	14,283	8,255	19,336	.....
ARKANSAS CITY, KS	27,230	3,271	2,000	21,959	.....
WINFIELD, KS	8,177	2,443	2,000	3,734	.....
METROPOLITAN LOUISVILLE, POND CREEK, KY	11,571	2,617	1,800	7,154	.....
ALOHA—RIGOLETTE, LA	7,378	4,035	1,510	1,833	.....
LAKE PONTCHARTRAIN AND VICINITY, LA (HURRICANE PROTECTION)	505,000	348,022	6,448	121,100	29,430
LAROSE TO GOLDEN MEADOW, LA (HURRICANE PROTECTION)	80,500	69,793	541	10,166	.....

NEW ORLEANS TO VENICE, LA (HURRICANE PROTECTION)	168,000	139,612	1,700	26,688	.....
SOUTHEAST LOUISIANA, LA	280,000	18,560	6,440	.....	255,000
WEST BANK—EAST OF HARVEY CANAL, LA (HURRICANE PROTECTION)	120,000	3,098	2,385	100,686	13,831
WESTWEGO TO HARVEY CANAL, LA (HURRICANE PROTECTION)	61,900	29,134	4,300	19,436	9,030
ROUGHANS POINT, REVERE, MA	7,930	3,950	1,880	2,100	.....
TOWN BROOK, QUINCY AND BRAINTREE, MA	29,100	28,100	700	300	.....
MARSHALL, MN	7,220	1,832	500	4,888	.....
BLUE RIVER CHANNEL, KANSAS CITY, MO	198,000	92,173	17,900	87,927	.....
CAPE GIRARDEAU—JACKSON, MO	33,400	24,908	1,800	4,577	2,115
MERAMEC RIVER BASIN, VALLEY PARK LEVEE, MO	17,738	8,905	2,347	6,486	.....
ST GENEVIEVE, MO	35,387	8,569	4,145	18,908	3,765
MISSOURI NATIONAL RECREATIONAL RIVER, NE AND SD	21,000	2,089	150	18,761	.....
WOOD RIVER, GRAND ISLAND, NE	6,036	1,850	500	3,686	.....
TROPICANA AND FLAMINGO WASHES, NV	176,200	29,028	20,000	127,172	.....
MOLLY ANN'S BROOK AT HALEDON, PROSPECT PARK AND PATERSON, NJ	20,700	10,334	7,090	3,276	.....
PASSAIC RIVER PRESERVATION OF NATURAL STORAGE AREAS, NJ	14,800	500	3,500	10,800	.....
RAMAPO RIVER AT OAKLAND, NJ	10,600	2,226	277	8,097	.....
ABIQUIU DAM EMERGENCY GATES, NM	7,200	1,616	1,400	4,184	.....
ACEQUIAS IRRIGATION SYSTEM, NM	64,500	11,386	600	52,514	.....
ALAMOGORDO, NM	34,800	3,720	400	30,680	.....
MIDDLE RIO GRANDE FLOOD PROTECTION, BERNALILLO TO BELEN, NM	46,800	8,675	560	37,565	.....
RIO GRANDE FLOODWAY, SAN ACACIA TO BOSQUE DEL APACHE, NM	59,500	3,720	280	55,500	.....
SHEYENNE RIVER, ND	33,580	22,632	500	10,448	.....
HOLES CREEK, WEST CARROLLTON, OH	3,414	1,524	1,890	.....	.....
METROPOLITAN REGION OF CINCINNATI, DUCK CREEK, OH	13,138	1,588	2,120	9,430	.....
MILL CREEK, OH	163,000	97,431	2,518	1,532	61,519
WEST COLUMBUS, OH	82,758	35,000	15,181	32,577	.....
FRY CREEKS, BIXBY, OK	9,260	5,332	3,928	.....	.....
MINGO CREEK, TULSA, OK	74,800	62,394	7,000	5,406	.....
ELK CREEK LAKE, OR	174,000	109,025	3,900	1,300	59,775
LACKAWANNA RIVER, OLYPHANT, PA	9,800	2,639	400	6,761	.....
LACKAWANNA RIVER, SCRANTON, PA	14,800	2,764	425	11,611	.....
SAW MILL RUN, PITTSBURGH, PA	10,575	2,534	500	7,541	.....
WYOMING VALLEY, PA (LEVEE RAISING)	108,000	28,745	13,000	66,255	.....
PORTUGUES AND BUCANA RIVERS, PR	418,825	359,772	12,712	46,020	321
RIO DE LA PLATA, PR	63,318	4,586	510	58,222	.....

CONTINUING CONSTRUCTION IN FISCAL YEAR 1998 BUDGET—Continued

[In thousands of dollars]

Name	Total estimate Federal cost	Allocation to date	Fiscal year 1998 budget	Balance to complete	
				Programmed	Programmed
RIO PUERTO NUEVO, PR	322,100	25,199	11,868	285,033	.....
CLEAR CREEK, TX	70,024	19,478	750	49,796	.....
EL PASO, TX	114,500	96,351	5,290	12,859	.....
MCGRATH CREEK, WICHITA FALLS, TX	9,516	6,225	3,291	.....	.....
SAN ANTONIO CHANNEL IMPROVEMENT, TX	147,800	147,410	390	.....	.....
SIMS BAYOU, HOUSTON, TX	209,480	49,409	9,590	150,481	.....
UPPER JORDAN RIVER, UT	9,400	2,076	700	6,624	.....
ROANOKE RIVER UPPER BASIN, HEADWATERS AREA, VA	23,400	5,130	4,400	13,870	.....
LEVISA AND TUG FORKS AND UPPER CUMBERLAND RIVER, WV, VA AND KY	1,597,597	607,164	7,927	65,895	916,611
PORTAGE, WI	7,260	3,102	1,500	2,658	.....
TOTALS, NO. OF PROJECTS 83	9,961,098	4,271,064	392,701	2,197,039	3,100,294
MULTIPLE PURPOSE:					
RICHARD B RUSSELL DAM AND LAKE, GA AND SC	596,150	590,195	4,000	1,955	.....
BARKLEY DAM AND LAKE BARKLEY, KY AND TN	157,299	147,466	3,500	6,333	.....
COLUMBIA RIVER TREATY FISHING ACCESS SITES, OR AND WA	75,000	13,011	8,400	53,589	.....
COLUMBIA RIVER FISH MITIGATION, WA, OR AND ID	1,376,217	380,014	127,000	869,203	.....
LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION, WA, OR AND ID	232,000	224,217	4,000	3,783	.....
TOTALS, NO. OF PROJECTS 5	2,436,666	1,354,903	146,900	934,863	.....
NAVIGATION:					
BLACK WARRIOR AND TOMBIGBEE RIVERS, VICINITY OF JACKSON, AL	16,331	1,703	500	14,128	.....
TENNESSEE—TOMBIGBEE WATERWAY WILDLIFE MITIGATION, AL AND MS	91,200	87,760	3,440	.....	.....
KAKE HARBOR, AK	10,116	2,528	3,600	3,988	.....
MCCLELLAN—KERR ARKANSAS RIVER NAVIGATION SYSTEM, AR AND OK	632,500	601,803	2,000	28,697	.....
MONTGOMERY POINT LOCK AND DAM, AR	242,000	25,238	10,000	206,762	.....
HUMBOLDT HARBOR AND BAY, CA	12,300	3,035	6,000	3,265	.....

LOS ANGELES HARBOR, CA	121,700	13,903	16,100	91,697	.....
OAKLAND HARBOR, CA	62,500	53,565	8,935	.....	.....
RICHMOND HARBOR, CA	25,700	13,042	8,620	4,038	.....
CANAVERAL HARBOR, FL	123,760	31,114	2,500	90,146	.....
MANATEE HARBOR, FL	19,985	6,098	1,872	4,803	7,212
MIAMI HARBOR CHANNEL, FL	51,066	18,071	2,889	30,106	.....
MAALAEA HARBOR, MAUI, HI	9,117	2,129	691	6,297	.....
MELVIN PRICE LOCK AND DAM, IL AND MO	741,332	723,363	1,900	16,069	.....
OLMSTED LOCKS AND DAM, IL AND KY	1,020,000	243,620	98,440	677,940	.....
UPPER MISS RVR SYSTEM ENV MGMT PROGRAM, IL, IA, MO, MN AND WI	241,399	144,124	14,000	59,163	24,112
MISSOURI RIVER FISH AND WILDLIFE MITIGATION, IA, NE, KS AND MO	81,400	32,026	3,895	45,479	.....
MCALPINE LOCKS AND DAMS, KY AND IN	268,000	13,768	1,720	252,512	.....
MISSISSIPPI RIVER—GULF OUTLET, LA	610,000	104,930	2,018	7,936	495,116
MISSISSIPPI RIVER SHIP CHANNEL, GULF TO BATON ROUGE, LA	164,000	21,665	1,793	10,245	130,297
RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LA	1,888,342	1,671,783	9,990	146,791	59,778
BOSTON HARBOR, MA	19,350	2,563	3,920	12,867	.....
MISS RIVER BTWN THE OHIO AND MO RIVERS (REG WORKS). MO AND IL	278,000	183,901	3,446	90,653	.....
KILL VAN KULL AND NEWARK BAY CHANNEL, NY AND NJ	324,000	197,606	429	.....	125,965
AIWW—REPLACEMENT OF FEDERAL HIGHWAY BRIDGES, NC	75,972	54,756	7,000	14,216	.....
GRAYS LANDING LOCK AND DAM, MONONGAHELA RIVER, PA	181,000	173,894	250	3,500	3,356
LOCKS AND DAMS 2, 3 AND 4, MONONGAHELA RIVER, PA	695,000	42,426	2,700	649,874	.....
SAN JUAN HARBOR, PR	34,400	4,092	2,400	27,908	.....
COOPER RIVER, CHARLESTON HARBOR, SC	206,673	203,935	[1] 2,738	.....	.....
CHANNEL TO VICTORIA, TX	22,293	11,006	7,300	3,590	397
FREEPORT HARBOR, TX	63,557	56,429	4,900	.....	2,228
GIWW—SARGENT BEACH, TX	58,770	51,848	940	.....	5,982
NORFOLK HARBOR AND CHANNELS (DEEPENING), VA	137,400	19,368	1,098	6,772	110,162
ROBERT C BYRD LOCKS AND DAM, WV AND OH	373,000	340,212	5,356	27,432	.....
WINFIELD LOCKS AND DAM, WV	221,600	201,566	8,500	11,534	.....
TOTALS, NO. OF PROJECTS 35	9,123,763	5,358,870	251,880	2,548,408	964,605
GRAND TOTALS, NO. OF PROJECTS 147	26,076,972	11,523,398	891,290	9,153,040	4,509,244

[1] New start.
[2] Work to be accomplished with unobligated carryover.

MISSISSIPPI RIVER AND TRIBUTARIES CONTINUING CONSTRUCTION IN FISCAL YEAR 1998 BUDGET

[In thousands of dollars]

Name	Total estimate Federal cost	Allocation to date	Fiscal year 1998 budget	Balance to complete	
				Programmed	Unprogrammed
FLOOD CONTROL:					
CHANNEL IMPROVEMENT, AR, IL, KY, LA, MS, MO AND TN	3,620,000	2,449,373	44,490	1,126,137	.....
EIGHT MILE CREEK, AR	8,500	2,324	812	5,364	.....
HELENA AND VICINITY, AR	7,700	2,167	700	4,833	.....
MISSISSIPPI RIVER LEVEES, AR, IL, KY, LA, MS, MO AND TN	1,457,000	800,931	24,238	631,831	.....
ST FRANCIS BASIN, AR AND MO	381,000	352,884	5,000	23,116	.....
WHITEMAN'S CREEK, AR	3,300	1,587	1,105	608	.....
ATCHAFALAYA BASIN, FLOODWAY SYSTEM, LA	185,000	53,187	3,300	77,871	50,642
ATCHAFALAYA BASIN, LA	1,750,000	801,131	19,100	929,769	.....
MISSISSIPPI AND LOUISIANA ESTUARINE AREAS, LA AND MS	63,300	7,863	300	55,137	.....
MISSISSIPPI DELTA REGION, LA	97,300	52,367	11,500	19,591	13,842
TENSAS BASIN, RED RIVER BACKWATER, LA	170,969	97,992	7,006	65,971	.....
VAZOO BASIN, BACKWATER LESS ROCKY BAYOU, MS	228,482	59,101	20	169,361	.....
YAZOO BASIN, BIG SUNFLOWER RIVER, MS	102,684	83,893	3,862	14,929	.....
YAZOO BASIN, DEMONSTRATION EROSION CONTROL, MS	221,424	211,424	10,000	.....	.....
YAZOO BASIN, F&WL MITIGATION LANDS, MS	7,410	6,182	363	865	.....
YAZOO BASIN, MAIN STEM, MS	212,800	34,518	25	178,257	.....
YAZOO BASIN, REFORMULATION UNIT, MS	32,408	23,740	2,000	6,339	329
YAZOO BASIN, TRIBUTARIES, MS	247,366	107,245	200	139,921	.....
YAZOO BASIN, UPPER YAZOO PROJECTS, MS	339,000	123,054	9,000	206,946	.....
ST. JOHNS BAYOU—NEW MADRID FLOODWAY, MO	54,700	4,150	3,000	24,180	23,370
NONCONNAH CREEK, FLOOD CONTROL FEATURE, TN AND MS	17,930	10,948	2,000	4,982	.....
WEST TENNESSEE TRIBUTARIES, TN	140,000	50,447	2,200	22,184	65,169
TOTALS, NO. OF PROJECTS 22	9,348,273	5,336,508	150,221	3,708,192	153,352
GRAND TOTALS, NO. OF PROJECTS 22	9,348,273	5,336,508	150,221	3,708,192	153,352

MAJOR REHABILITATION IN FISCAL YEAR 1998 BUDGET (CG FUNDED)

[In thousands of dollars]

Name	Total estimate Federal cost	Allocation to date	Fiscal year 1998 budget	Balance to complete	
				Programmed	Unprogrammed
FLOOD CONTROL:					
HODGES VILLAGE DAM, MA (MAJOR REHAB)	17,400	2,000	7,900	7,500	.....
LAKE ASHTABULA AND BALDHILL DAM, ND (MAJOR REHAB)	7,150	4,797	1,200	1,153	.....
JOHNSTOWN, PA (MAJOR REHAB)	32,500	2,950	6,205	23,345	.....
TOTALS, NO. OF PROJECTS 3	57,050	9,747	15,305	31,998	.....
MULTIPLE PURPOSE:					
WALTER F GEORGE LOCK AND DAM, AL AND GA (MAJOR REHAB)	27,400	473	2,800	24,127	.....
DARDANELLE LOCK AND DAM POWERHOUSE, AR (MAJOR REHAB)	29,700	10,579	3,000	16,121	.....
JIM WOODRUFF LOCK AND DAM POWERHOUSE, FL AND GA (MAJOR REHAB)	30,600	2,225	6,000	22,375	.....
BUFORD POWERHOUSE, GA (MAJOR REHAB)	27,200	.....	[1] 27,200	.....	.....
HARTWELL LAKE POWERHOUSE, GA AND SC (MAJOR REHAB)	17,700	8,748	7,000	1,952	.....
THURMOND LAKE POWERHOUSE, GA AND SC (MAJOR REHAB)	69,700	5,145	11,000	53,555	.....
GARRISON DAM AND POWER PLANT, ND (MAJOR REHAB)	40,840	319	300	40,221	.....
BONNEVILLE POWERHOUSE PHASE II, OR AND WA (MAJOR REHAB)	89,100	10,990	13,000	65,110	.....
THE DALLES POWERHOUSE (UNITS 1–14, WA AND OR (MAJOR REHAB)	87,700	1,893	4,000	81,807	.....
TOTALS, NO. OF PROJECTS 9	419,940	40,372	74,300	305,268	.....
NAVIGATION:					
LOCK AND DAM 24, MISSISSIPPI RIVER, IL AND MO (MAJOR REHAB)	25,736	3,608	4,370	17,758	.....
LOCK AND DAM 25, MISSISSIPPI RIVER, IL AND MO (MAJOR REHAB)	22,926	8,770	4,230	9,926	.....
BURNS WATERWAY HARBOR, IN (MAJOR REHAB)	14,600	10,050	3,000	1,550	.....
LOCK AND DAM 14, MISSISSIPPI RIVER, IA (MAJOR REHAB)	20,900	3,050	6,600	11,250	.....
LOCK AND DAM 3, MISSISSIPPI RIVER, MN (MAJOR REHAB)	12,400	.....	[1] 12,400	.....	.....
TOTALS, NO. OF PROJECTS 5	96,562	25,478	30,600	40,484	.....

MAJOR REHABILITATION IN FISCAL YEAR 1998 BUDGET (CG FUNDED)—Continued

[In thousands of dollars]

Name	Total estimate Federal cost	Allocation to date	Fiscal year 1998 budget	Balance to complete	
				Programmed	Unprogrammed
GRAND TOTALS, NO. OF PROJECTS 17	573,552	75,597	120,205	377,750	.....

[1] New start.

DAM SAFETY ASSURANCE IN FISCAL YEAR 1998 BUDGET

[In thousands of dollars]

Name	Total estimate Federal cost	Allocation to date	Fiscal year 1998 budget	Balance to complete	
				Programmed	Unprogrammed
FLOOD CONTROL:					
DEWEY LAKE, KY (DAM SAFETY)	18,500	2,052	250	16,198	.....
GALISTEO DAM, NM (DAM SAFETY)	8,300	407	2,720	5,173	.....
TWO RIVERS DAM, NM (DAM SAFETY)	3,020	457	2,563	.....	.....
HOMME LAKE, ND (DAM SAFETY)	14,700	1,226	200	13,274	.....
LAKE ASHTABULA AND BALDHILL DAM, ND (DAM SAFETY)	15,800	13,365	500	1,935	.....
BEACH CITY LAKE, MUSKINGUM RIVER LAKES, OH (DAM SAFETY)	3,300	552	105	2,643	.....
WACO LAKE, TX (DAM SAFETY)	9,800	729	1,700	7,371	.....
TYGART LAKE, WV (DAM SAFETY)	29,500	1,457	[1] 28,043	.....	.....
TOTALS, NO. OF PROJECTS 8	102,920	20,245	36,081	46,594	.....
MULTIPLE PURPOSE:					
TABLE ROCK LAKE, MO AND AR (DAM SAFETY)	60,200	1,100	800	58,300	.....
TENKILLER FERRY LAKE, OK (DAM SAFETY)	36,000	2,009	95	33,896	.....
TOTALS, NO. OF PROJECTS 2	96,200	3,109	895	92,196	.....

NAVIGATION: PINE RIVER DAM, CROSS LAKE, MN (DAM SAFETY)	14,900	1,283	300	13,317	.....
TOTALS, NO. OF PROJECTS 1	14,900	1,283	300	13,317	.....
GRAND TOTALS, NO. OF PROJECTS 11	214,020	24,637	37,276	152,107	.....

[1] New start.

QUESTIONS SUBMITTED BY SENATOR GORTON

TRI-CITIES RIVERSHORE ENHANCEMENT PROJECT

Question. As you may know, legislation turning over a number of recreational areas along the Columbia River to local governments in the Tri-Cities area of my state was included in last year's Water Resources Development Act (WRDA) signed into law by President Clinton. The legislation required local units of government to pay reasonable administrative costs for these lands. I have been told that earlier this year, the Corps was considering charging affected cities and counties $4 million in administrative costs. This charge does not seem reasonable to me as it would bankrupt these communities of modest size. I have heard that progress has been made between the Corps and local governmental officials on a mutually acceptable figure. Could you tell me what the Corps now expects to charge these local units of government?

Answer. The current estimate for each of the six local entities will be a maximum of $20,000 for Corps of Engineers' administrative costs, provided the local governments provide/accomplish the Comprehensive Environmental Response, Liability, and Compensation Act (CERCLA), the National Environmental Policy Act (NEPA), and other environmental requirements for the project. In addition, for the properties to be conveyed, the local governments will need to provide legal descriptions prepared by a licensed surveyor using Corps segment maps. The Corps will provide the following support to facilitate the land disposal in accordance with WRDA 96:

(1) Provide segment maps that describe the areas to be conveyed to each of the six local entities.

(2) Provide a listing of improvements/structures to be conveyed with the land parcels.

(3) Make our agency files available to the local entities or their contractors, so that they may complete CERCLA compliance.

(4) Review and approve the Environmental Assessment (EA).

(5) Incorporate NEPA and CERCLA data into the deeds, as necessary.

Question. I also understand with regard to the Tri-Cities Rivershore Enhancement Project that local governments are expected to foot the bill for NEPA compliance and levee study costs. Could you tell us how much the Counties are expected to pay for these services?

Answer. We estimate the cost for one EA that results in a Finding of No Significant Impact (FONSI), covering the disposal of all land to the six local entities, to be approximately $50,000. This estimate assumes no issues or impacts are identified which would warrant the preparation of an Environmental Impact Statement (EIS) and that all six local entities cooperate to conduct a single EA. The Corps has offered to do this work for the local entities for this amount. The levee study referred to in WRDA 96, to determine the minimum safe height of the levees, is estimated to cost about $500,000, which would be shared by the Corps and non-Federal interests. To date, however, no funds have been provided for the Corps to do the study.

Question. I understand that about five years ago, a study was conducted and levees in Franklin County were ultimately lowered. How much did this study cost?

Answer. This Reconnaissance Study was completed in August 1991 for $300,000.

Question. The levees that are mentioned in the legislation are extremely high, steep, and make access to the river virtually impossible. They are certainly not conducive to rivershore beautification which is one of the primary goals of this bill. In addition, the levees are no longer necessary for flood control purposes. They were designed to pass the 1894 natural flood before the Corps began managing flows of the Columbia River through several dams built after the Corps acquired the Tri-Cities property. Yet as I understand the current situation the Corps is virtually unwilling to consider reducing the height more than six feet. Could you explain the Corps' current policies on levee lowering and why the levees in the Tri-Cities cannot be lowered any further?

Answer. Limiting the amount of levee height reduction is not as much a matter of Corps policy as it is a matter of public safety. The upstream storage reservoirs have the capability to reduce flood flows in the Columbia River but not eliminate them. The August 1991 Reconnaissance Study showed that the levees are essential for continued protection of lives and property from flooding. It also showed that reducing levee heights by approximately six feet provides the urban community with protection against river levels that would result from standard project flood flows and waves with provision for loss of channel capacity due to siltation over time. This level of protection is consistent with other Corps projects in urban areas. Any further lowering of the levees below that level increases the flood risk to the commu-

nities. It also would be an action inconsistent with Federal policy on floodplain management stipulated in Executive Order 11988, which guides all Federal agencies.

Question. The bill also directed the Corps within 30 days of enactment to contract with a private entity to determine within six months the minimum safe height of the levees. Six months have now come and gone since the bill became law and the Corps has not even found a private party to conduct this study let alone determine the safe height of the levees. Could you tell me why the Corps has failed to follow the directives Congress has spelled out for it in this law?

Answer. WRDA 96 authorized the levee height study. No funds were provided for the Corps to do the study. We are currently in the process of preparing our fiscal year 1999 budget request, the first opportunity since WRDA 96. We will consider this activity along with other priorities at the National level.

QUESTIONS SUBMITTED BY SENATOR BURNS

PERMITTING PROCEDURES

Question. I have a few questions about the process the Corps of Engineers goes through in their permitting procedures. This relates to specific permitting processes ongoing at this time in Montana. When a lead agency, in this case BLM, has compiled a very extensive EIS and has issued a Record of Decision (ROD), for the extension permit, does everything in the EIS have to be reiterated by the ROD?

Answer. When the Corps prepares to render a final permit decision, we strive to effectively summarize the EIS contents in the ROD, especially the information relevant to the decision, and not to reiterate everything in the EIS. Regarding lead Federal agency EIS's and ROD's, we regard both of these documents as potential information sources for our use in rendering final permit decisions. If the Corps concludes that certain information in another Federal agency's EIS (or ROD) is insufficient to facilitate a decision, we may perform additional studies or document the Corps additional evaluation referencing the information in the other agency's EIS or ROD. We may also condition the permit to address project construction and operation impacts that are consequences of our permit decision.

Question. Can the Corps of Engineers as a cooperating agency accept complete documents from the lead agency when making their permitting decisions, or must they do their own independent study?

Answer. The Corps can accept complete environmental impact statements (EIS) from lead Federal agencies and use the information as a basis for its permit decision, whether the Corps is a cooperating agency on the EIS or not. In fact, the Corps believes that this is what the National Environmental Policy Act envisions and that it makes for more efficient and timely permit decisions. However, if the communication or cooperation between the Corps and the lead Federal agency is not sufficient to produce all necessary information to facilitate a permit decision, the Corps must request that the applicant perform additional studies. These additional studies and the Corps analysis of those studies would be made part of an environmental assessment, or a supplemental EIS.

Question. Does or does not the Corps have jurisdiction, expertise, or authority to determine potential impacts to Native American cultural resources and traditional practices when issuing a 404 permit?

Answer. Under the National Historic Preservation Act the Corps is responsible for taking into account the impacts of any permit action on cultural resources, including Native American cultural resources, and for complying with appropriate regulations. The Corps also has a Trust Responsibility to ensure that our decisions do not violate any Native American treaty rights when issuing any permit. The Corps has several archaeologists on staff in the district offices to address these issues and a center of expertise in the St. Louis District to ensure uniform application of laws and regulations governing cultural resources.

Question. In light of the tightening federal budgets and reduced federal agency manpower, why is the Corps proposing to further limit the use of nationwide permits by reducing the amount of acreage that can be permitted under a nationwide permit? Replacement of wetlands is still required under a nationwide permit, so what is the advantage of going through a lengthy process for an individual permit when a nationwide permit will suffice with much less demand on the Corps staff?

Answer. The Corps has determined that nationwide permit (NWP) 26 should be replaced with activity-based NWP's. This is because of some legal vulnerability of NWP 26, based on the language of Section 404(e) of the Clean Water Act which requires that NWP's be for categories of activities that are similar in nature. We anticipate that the issuance of replacement NWP's should keep the number of activi-

ties needing individual permits approximately the same. While there will be more activities above the headwaters and in isolated waters that need individual permits, there will be fewer activities below the headwaters needing individual permits. This is because the replacement NWP's will apply not only above the headwaters and in isolated waters but also to waters below the headwaters. Furthermore, since the headwaters and isolated waters determinations will no longer be needed, the public and the Corps will benefit from the workload and expense of such determinations. Finally, the Corps issued two new NWP's and modified several NWP's to increase the number of activities that would be authorized by NWP.

Question. The Corps continues to expand its authority under Section 404 of the Clean Water Act and in some cases is evaluating impact to non-wetland waters of the United States, not just wetlands. This goes beyond the intent of the Clean Water Act and could be construed as the Corps attempting to expand its authority and influence. What rationale do you have to further expand its interpretation of the Clean Water Act and have you evaluated the environmental benefit versus additional cost due to increased regulatory burden on U.S. citizens?

Answer. The Corps has not expanded the geographic scope of areas under Section 404 of the Clean Water Act jurisdiction beyond that as promulgated in our 13 November 1986, regulations. The Clean Water Act uses the term "navigable waters" which is defined in Section 502(7) as "waters of the United States, including territorial seas." Thus, Section 404 jurisdiction is defined as encompassing navigable waters plus their tributaries and adjacent wetlands and isolated waters where the use, degradation or destruction of such waters could affect interstate or foreign commerce. Activities requiring Section 404 permits are limited to discharges of dredged or fill material into waters of the United States. The Clean Water Act Section 404(b)(1) Guidelines promulgated by the Environmental Protection Agency in conjunction with the Corps recognize many different special aquatic sites under Clean Water Act jurisdiction, including wetlands. In fact, you raise an issue that has been of concern to the Corps regarding the emphasis or focus some have placed on wetlands, sometimes at the expense of other more important aquatic "non-wetland" resources that are clearly under Clean Water Act jurisdiction. An example would include the vegetated shallow water areas within the Chesapeake Bay which are vitally important to many aquatic organisms that are commercially harvested for sport and human consumption.

With regard to the analysis of environmental benefit versus additional cost to U.S. citizens, the Corps has not prepared a comprehensive study or analysis of mitigation or other environmental impacts that are required as part of a final permit decision. The Corps determines the practicability of the alternatives, including mitigation, prior to reaching a final individual permit decision on a case-by-case basis. This determination must be based on the availability and capability of being done by the applicant after taking into account cost considerations, existing technology, and logistics in light of the overall project purpose.

Question. There is case law that sets the statute of limitations for mitigation of past impacts to waters of the United States at 5 years. The Corps has ignored that case law and attempted to require mitigation for longer than 5 years, even though there may not have been regulations requiring a 404 permit when the disturbance to waters of the U.S. occurred. Since there is a 5 year statute of limitations, couldn't the Corps reduce the amount of time and money spent on after the fact permitting by using that 5 year guideline? In any event, how does the Corps justify ignoring court decisions when developing mitigation requirements?

Answer. The 5 year statute of limitations became a guiding factor used in determining the need to take an enforcement action with regulatory guidance issued in 1988. After the fact permit cases arise from enforcement actions. We are not aware of any Corps enforcement cases that have not followed the guidance, or that have ignored court decisions. Resource limitations (time and money) and court cases are factors considered in establishing enforcement priorities, and were at the heart of the guidance concerning the 5 year statue of limitations.

Question. The Corps, EPA, and other federal agencies seem to have a large amount of overlap in regulatory compliance and oversight for protection of water resources. What is the Corps doing to reduce the overlap and streamline their permitting requirements to reduce the time and money Corps staff must spend on redundant requirements that are being handled by another agency?

Answer. The Corps attempts to minimize duplication with not only other Federal agencies, but also state and local governments that may be authorizing projects in the Nation's waters. We have established interagency Memoranda of Agreement under Section 404(q) of the Clean Water Act and consider other Federal agencies' comments, but the Corps is the decision-maker on Corps permits, including Section 404 permits. Regarding state and local governments, we are continuing to advocate

expanded use of programmatic general permits (PGP). When the Corps develops a PGP, an activity can proceed based on the permit of the other governmental agency (state or local government), provided certain Corps of Engineers conditions are met. The conditions are identified in the PGP or added by the Corps as a result of joint review by the local or state agency and the Corps.

Question. Why is mining being singled out for this lengthy process, while hundreds of acres have been approved under nationwide permits?

Answer. We are not singling out mining activities for regulation; however, some mining activities have substantial impact to waters of the U.S. Many mining activities are authorized by nationwide permits (NWP) other than NWP 26. NWP 21 authorizes coal mining which is authorized under the Surface Mining Control and Reclamation Act. Many other NWP's are used for minor activities associated with mining activities, such as NWP 14 for minor road crossings, NWP 3 for maintenance of structures, NWP 5 for scientific measurement devises, NWP 6 for survey activities, and NWP 33 for temporary construction and access. The Corps is also considering a NWP for sand and gravel and aggregate mining as a replacement NWP for NWP 26. Furthermore, the Corps has issued several regional general permits for mining activities. Finally, certain mining activities are exempt from section 404 regulation under Section 404(f) of the Clean Water Act.

Question. Why is the Corps giving up their maintenance responsibilities, in lieu of projects that may or may not transpire, or not have approval or authorization?

Answer. The Corps is not giving up its maintenance responsibilities. Prudent management of the Nation's investment in water resources projects is an important part of our program. Nearly half of the Army's $3.7 billion Civil Works budget—$1.618 billion—supports the preservation of the valuable assets that make up the existing infrastructure. The budget request will help ensure that the Corps of Engineers can continue to deliver justified levels of service at least cost to the taxpayer.

Question. Is it the Corps policy to obligate itself as a co-lead agency in an EIS and then not fully fund the positions necessary to fulfill its commitment as a co-lead agency?

Answer. The decision to participate in an EIS or other study such as a watershed plan is usually made because of the necessity to ensure that Corps requirements are considered in the process. These commitments are often made in one fiscal year on the expectation that some small funding increases in the next fiscal year will help pay for the Corps involvement. Such increases have not been occurring as the regulatory program budget has been held at the same level for three years. We are doing our best to meet our obligations but the program budget is stretched very thin. At this time we are finalizing our policy on regulatory EIS's to better define what our level of participation should be and to ensure consistent application of that EIS policy across the country.

Question. Is it the Corps policy to extend its jurisdiction beyond wetlands issues on projects involving no federal land or federal funds?

Answer. The Corps will expand its scope of analysis to include the evaluation of certain non-aquatic resources to ensure compliance with many Federal laws when reviewing activities under Section 404 of the Clean Water Act, including, but not limited to, the National Environmental Policy Act, the National Historic Preservation Act, the Endangered Species Act, and the Wild and Scenic Rivers Act. When these laws apply, the Corps may be required to consider and require certain mitigative features to address impacts to non-aquatic resources. In general, however, the Corps limits its evaluation to direct and indirect impacts of activities to waters of the United States.

MISSOURI RIVER

Question. Can you provide the committee with the progress that is being made on the stabilizing the Missouri River between Wolf Point, Montana and Culbertson, Montana?

Answer. The Corps completed a Section 33 non-traditional bank stabilization project south of Wolf Point, Montana in May 1996. The Corps is performing an evaluation report on this project. The report will be completed by the end of fiscal year 1997.

Question. Can you visualize a date when the Missouri River will be stabilized down stream from Fort Peck Reservoir?

Answer. Fort Peck was closed in 1937 and began operations in 1940. Since 1940, the downstream effects of Fort Peck dam such as degradation and bed armoring have attenuated. Degradation rates are decreasing, and the distribution of bed material has stabilized. All the data available at this time indicate the reach has nearly adjusted to the current discharge-sediment regime and is reaching dynamic equi-

librium. However, natural alluvial processes such as bank erosion and sandbar movement will continue to occur. The Omaha District has completed one erosion assessment in this reach of the river, and this assessment indicates that long term erosion rates have declined since the closure of Fort Peck Dam. We do not have enough data to estimate future erosion rates at this time. However, we can state, for this reach of the river, erosion will continue at a reduced rate depending on hydrologic cycles and geologic conditions, and the location of eroding banks will change over time, possibly up to fifty years.

QUESTIONS SUBMITTED BY SENATOR REID

TROPICANA-FLAMINGO WASHES FUNDING

Question. The Project Cooperation Agreement for the Tropicana-Flamingo Washes Project contemplated construction of the Project by 2001. However, the Corps has moved completion of the Project to 2006 in a letter to the Flood Control District in 1996. The financial plan in the PCA (executed in February 1995) is already $28 million behind schedule if we approve your $20 million funding request for fiscal year 1998. In this fastest growing major city in the United States, is there some way to accelerate these funding levels so we can keep ahead of need and growth?

Mr. LANCASTER. We have requested $20 million for fiscal year 1998 which is about $3 million more than what was indicated in the 1996 letter that you referenced. This amount will allow the Corps to proceed on an optimum schedule in fiscal year 1998. Optimum schedule funding thereafter will be dependent upon whatever amount of funds are made available through the appropriations process for future fiscal years. We are also pursuing the completion of plans and specifications for all flood control elements of the project. This will put us in the position of being able to utilize, on short notice, any excess funds that may become available in future years.

SECTION 211 (1996 WRDA) FUNDING PROPOSALS

Question. The Clark County Regional Flood Control District has met with officials of the Assistant Secretary's and Chief's offices to work out a program under the 1996 WRDA's Section 211. These meetings have been productive but we question a policy proposal discussed which would consider reimbursement under Section 211 a "new start" where the project construction is ongoing by the Corps and the local sponsor wishes to undertake a portion of the construction to get the project finished on time. Your explanation of this proposed policy will be helpful.

Mr. LANCASTER. Section 211 authorizes non-Federal interests to undertake flood control projects and receive reimbursement of the estimated Federal share. We are currently developing the policy and guidance for implementing this section of WRDA 1996. In the case of the Flamingo and Tropicana Washes project, where a PCA has been signed and construction is underway and where there are no identifiable separable elements, we are considering several alternatives to the "new start" approach. At this point I can say that treating the sponsor's reimbursement without requiring a "new start" decision or providing for reimbursement at the end of the project without the need for a "new start" decision are some options under consideration. However, in general, projects proceeding under Section 211 would need to be prioritized by the Administration and the Congress along with all other projects awaiting funding.

QUESTIONS SUBMITTED BY SENATOR BYRD

RITCHIE COUNTY DAM

Question. One project I have supported strongly is the construction of a multi-purpose dam on the North Fork of the Hughes River in Ritchie County. While the primary purpose of this project would be to address water supply and quality concerns, it would also have benefits associated with flood control and recreation. The opponents to this project have initiated litigation challenging several issues associated with the actions of the involved agencies. The two issues which the Court directed be addressed are zebra mussels and the recreation benefits associated with the project. What is the Corps' role in responding to the issues that the court identified as requiring further analysis?

Mr. LANCASTER. The Corps will be acting in a coordinating or cooperating capacity while the Natural Resources Conservation Service addresses the recreation and

zebra mussel issues through their supplemental National Environmental Policy Act review process.

Question. What is the current time frame for responding to the court? Is the Corps' ability to fulfill its responsibilities dependent on receiving updated information from the Natural Resources Conservation Service?

Mr. LANCASTER. There is no time frame set by the court. The Corps must receive Natural Resources Conservation Service (NRCS) updated information in order to complete its responsibilities in this action. NRCS information is expected by September 1997. Once received, a determination will be made, by the Corps and NRCS, concerning any requirement for additional National Environmental Policy Act (NEPA) actions and a schedule would be developed at that time. After all NEPA obligations have been met, the permit decision will be reviewed.

Question. Can you provide any indication as to whether you believe the Court's requirements can be met adequately through further analysis?

Mr. LANCASTER. Yes, we believe the new information obtained will adequately meet the court's requirements on these issues.

Question. Mr. Secretary, I wish to reiterate my strong support for this project. While the Corps is not the primary agency responsible for this effort, it will play a key role in reviewing the materials prepared by others. I hope you make sure the Corps conducts its responsibilities in a timely manner so that this project is not unduly delayed further.

EMERGENCY FUNDING/CONTINGENCIES

Question. Mr. Secretary, the Senate will soon take up the proposed supplemental appropriations bill to address emergency requirements which have developed as a result of the seemingly endless string of storms and other disasters which have confronted various regions of the country since early this year. My understanding is that the Administration has requested some $321 million for the Corps, and has informally concurred that the real needs are more in the range of $432 million. Additional requirements may be forthcoming as a result of the incredible damages in North Dakota.

How has the Corps been dealing with the damages that have been occurring? Have you had to transfer funds from existing accounts, such as construction or operation and maintenance, in order to respond to these floods?

Mr. LANCASTER. Thus far, the Corps of Engineers has been able to meet requirements by reprogramming funds scheduled to be obligated in the fourth quarter. However, this year's events have placed extraordinary demands on the emergency fund. As I informed the Appropriations Committees this morning, I intend to transfer unallotted Construction, General, funds to the Flood Control and Coastal Emergencies account, under the emergency authority of Public Law 84–99, pending receipt of a supplemental appropriation.

Question. What will be the impact on the Corps programs if the funding proposed in the supplemental is not forthcoming soon? Is there a particular time constraint that you feel must be met in order to avoid having to borrow funds from ongoing projects to meet these unanticipated needs?

Mr. LANCASTER. Supplemental appropriations for the Flood Control and Coastal Emergencies, Operation and Maintenance, General, and Flood Control, Mississippi River and Tributaries, accounts are needed now. As I stated earlier, I intend to transfer funds from Construction, General, to Flood Control and Coastal Emergencies to allow the Corps to fulfill its emergency mission. This year's events have also affected Operation and Maintenance, General, and Flood Control, Mississippi River and Tributaries. The National Weather Service is predicting more flooding to result from the Spring snowmelt and hurricane season begins on June 1st. To not receive supplemental funding by the end of May will cause major work delays as the Corps is forced to reprogram additional funds to meet emergencies.

Question. Earlier this year, West Virginia was affected by flooding along the Ohio River. Are any additional funds necessary to address damages resulting from that event?

Mr. LANCASTER. Yes, sir. Funds to repair damages to Corps projects in West Virginia are included in the President's supplemental appropriations request.

TUG FORK PROJECTS

Question. Last year, Congress provided $12.5 million for ongoing activities in the West Virginia areas that are part of the Levisa/Tug Fork flood protection program. This year's budget includes funding for ongoing work at Matewan, and for the ongoing study in McDowell County. But no funds are included for ongoing flood protection actions underway in Hatfield Bottom and Upper and Lower Mingo County, nor

to initiate flood proofing and acquisition in approved areas in McDowell and Wayne counties. Why are no funds included in the budget for the Hatfield Bottom and Lower and Upper Mingo County components of the Tug Fork project?

Mr. LANCASTER. The Administration does not support these elements because they are not economically justified.

Question. Have Upper and Lower Mingo County identified the necessary cost-sharing to comply with their particular authorizing requirement?

Mr. LANCASTER. The sponsor for the Upper and Lower Mingo County non-structural projects is the Mingo County Commission. The Mingo County Commission would provide the required 5 percent non-federal cost.

Question. What funding is necessary in fiscal year 1998 to keep these projects on schedule?

General FUHRMAN. The approved capabilities for fiscal year 1998 are: Hatfield Bottom—$1,000,000, Upper Mingo County—$3,000,000, and Lower Mingo County—$6,300,000. Although project and capabilities reflect the readiness of the work for accomplishment, they are in competition for available funds and manpower Army-wide. In this context, the fiscal year 1998 capability amounts consider each project by itself without reference to the rest of the program. However it is emphasized that the total amount proposed for the Army's Civil Works Program in the President's budget for fiscal year 1998 is the appropriate amount consistent with the Administration's assessment of national priorities for Federal investments and the objectives of avoiding large budget deficits and the serious adverse effect that Government borrowing is having on the national economy. In addition, the total amount proposed for the Army's Civil Works Program in the President's Budget is the maximum that can be efficiently and effectively used. Therefore, while we could utilize additional funds on individual projects, offsetting reductions would be required in order to maintain our overall budgetary objectives.

Question. What funding is necessary to initiate flood proofing and acquisition in McDowell and Wayne counties?

General FUHRMAN. The fully funded amount for the Wayne County non-structural project is $14,050,000. Funding necessary to initiate flood proofing and acquisition in for Wayne County is $1,200,000. The Detailed Project Report for the McDowell County non-structural project is scheduled to be completed in fiscal year 1998 and $1,085,000 is included in the budget for this effort. Implementation of the project could not be undertaken until fiscal year 1999.

Question. What role would there be for a flood warning system in protecting residents of the Tug Fork Valley? What would be the estimated cost for installation of such a system?

General FUHRMAN. In the areas protected by floodwalls the proposed system would provide additional warning time to the emergency management personnel responsible for operation of the pump stations and closure of flood gates. In the areas not protected by structural projects, the flood warning system would improve warning time for evacuation of the residents and possessions from the flood zone. The estimated total project cost for a flood warning system in the Tug Fork Valley is $421,000 with an estimated Federal cost of $400,000 and an estimated non-Federal cost of $21,000.

MOOREFIELD AND PETERSBURG, WV, LOCAL FLOOD PROTECTION

Question. In 1990, Congress authorized construction of flood control protection projects in Moorefield and Petersburg, West Virginia. These areas suffered considerable damage as a result of flooding in November, 1985, and the communities have been working to improve their flood protection ever since. The Corps awarded the construction contract for the Federal component (earthen levee) at Moorefield last year, and construction is scheduled for completion in February, 1998. Petersburg is also progressing. Funds to complete construction were included in the fiscal year 1997 Energy and Water Appropriations bill. However, due to last year's flooding subsequent to Hurricane Fran and delays associated with land acquisition, the local project sponsors are concerned about what the final project costs may be and whether they will be expected to provide additional funding.

What are the current cost estimates for the Moorefield and Petersburg projects?

Mr. LANCASTER. The current cost estimate for the Moorefield, West Virginia, local flood protection project is $25,900,000 with an estimated Federal cost of $20,111,000 and an estimated non-Federal cost of $5,789,000. The current cost estimate for the Petersburg, West Virginia, local flood protection project is $24,575,000 with an estimated Federal cost of $17,900,000 and an estimated non-Federal cost of $6,675,000.

Question. What actions is the Corps taking to address these concerns about factors that affect cost? Are there any alternatives available to the Corps to help address these cost issues without the local sponsors having to find additional funding?

Mr. LANCASTER. Factors which can effect further cost changes in these projects include either increases or decreases in actual versus estimated value of lands, easements, and rights-of-way, costs of construction and associated contract modifications during construction, and interest on the unpaid non-Federal cost share for each project. Changes which occur to any of these factors are brought to the attention of the non-Federal sponsor on a quarterly basis. Based on language contained in section 358 of the Water Resources Development Act of 1996, the Army Corps of Engineers has prepared a detailed report on real estate actions during 1996 relative to the Moorefield project. I am reviewing that report and the non-Federal sponsor's report on the same matter to see if Corps actions contributed to any flood damages to the Town of Moorefield and to determine if an increase in the Federal share of the project is warranted up to a maximum of $700,000. The Corps of Engineers also previously evaluated several options within its authority to find a reasonable and equitable solution to the current non-Federal financial shortfall for cost sharing both projects. However, the Corps has no authority to waive each sponsor's cost sharing obligations which are contained in Section 103(a) of the Water Resources Development Act of 1986 and detailed in the respective Project Cooperation Agreement for each project. Rather than suspend or terminate work on these projects, it was found to be in the best interest of the United States for the Federal Government to proceed with construction of both projects through to completion. Exercise of this option includes the understanding with both sponsors that upon completion of construction and resolution of all relevant claims and appeals, the Corps will compute the final total project cost and provide notification to each project sponsor of the final accounting of its share of total project costs, including appropriate interest for delinquent payments.

BLUESTONE DAM DRIFT AND DEBRIS

Question. Section 357 of last year's Water Resource Development Act included a provision for the Corps to address drift and debris accumulation above the Bluestone Dam. Has the Corps completed an evaluation report and selected an alternative for how best to address these unsightly accumulations of trash?

Mr. LANCASTER. Yes, an evaluation report has been completed. The preferred "Plan C/G," consists of the addition of four multi-level intakes for passing of the drift and debris through the dam during periods of high flows complemented with actions to remove some material from the lake. A downstream cleanup program to address the deposition of manmade trash and a public awareness program to emphasize the adverse consequences from dumping of manmade trash into the waterways of the New River basin have been developed.

Question. Have the affected agencies in the area concurred with the Corps' proposed approach?

Mr. LANCASTER. The National Park Service and the West Virginia Department of Environmental Protection have expressed support for the preferred plan and have indicated an intent to participate in the implementation of the project both physically and fiscally.

Question. What is the estimated cost to implement the recommended alternative? How much funding would be necessary in fiscal year 1998 to get started?

General FUHRMAN. The total estimated cost for the implementation of Plan C/G is a first cost of $6,856,700 including federal and non-federal contributions. Funding in the amount of $475,000 would be necessary to initiate the project in fiscal year 1998.

ROBERT C. BYRD LOCKS AND DAM

Question. Last year, Congress appropriated $12.158 million for construction of mitigation responsibilities associated with this project. Additional funding is anticipated as being needed in fiscal year 1998 to keep this project going. What funding is included in the budget for this project? Is this amount sufficient to keep pace with anticipated progress on the mitigation work at Robert C. Byrd Locks and Dam?

Mr. LANCASTER. The fiscal year 1997 funds in the amount of $12,158,000 are being used for the construction and the mitigation work at the project. The fiscal year 1998 budget request is $5,356,000 including $916,000 for the mitigation work planned for fiscal year 1998. This amount will limit progress on the mitigation work.

Question. What funding would be considered to be the "approved capability" to allow work on this project to proceed without disruption?

General FUHRMAN. The current approved capability for this project is $14,500,000, subject to the usual qualification.

TYGART RIVER BASIN, WEST VIRGINIA

Question. Using funds appropriated in fiscal year 1995, the Corps has been conducting a reconnaissance level investigation of possible flood protection measures to protect communities in the Tygart River basin. This report was completed in December, 1995. What can you tell us about the recommendation of this report and is further study necessary?

Mr. LANCASTER. The study undertook reconnaissance level investigations of possible structural flood damage reduction measures at Belington and Philippi, in Barbour County, West Virginia. River channel improvements and levee/floodwall systems were considered. The study found that projects at Philippi were not economically feasible; that is, the benefits would not exceed the costs. At Belington, a levee/floodwall system providing a 35 year level of protection was found to be economically feasible. The report recommended that a cost-shared feasibility study be undertaken at Belington. Further study is necessary to identify the best plan and to complete National Environmental Policy Act, cultural resource, and Hazardous, Toxic and Radioactive Waste requirements.

Question. What would be the cost-sharing requirements if these projects were pursued further?

Mr. LANCASTER. The feasibility study costs would be cost-shared 50 percent by the Federal and 50 percent by the respective potential local sponsors, the Cities of Belington and Philippi. Project construction would be shared at 65 percent Federal and 35 percent non-Federal.

CHEAT RIVER BASIN, WEST VIRGINIA

Question. What recommendations have been identified for further consideration?

Mr. LANCASTER. The Cheat River Basin reconnaissance study recommended that a feasibility study be initiated for a channel improvement project at Parsons, West Virginia in the interest of flood control, a feasibility study be initiated for an environmental restoration project on the North Fork of Lick Run, and additional reconnaissance studies be initiated for Rowlesburg and Camp Dawson, West Virginia.

Question. Are all these possible projects ready to proceed to the feasibility study stage?

Mr. LANCASTER. No, sir. The City of Parsons and the Tucker County Commission could not provide the necessary local sponsor financing to proceed with a channel improvement project. The West Virginia Divisions of Environmental Protection and Natural Resources chose not to pursue the North Fork Lick Run environmental restoration project. A Letter of Intent has been received from the City of Rowlesburg to conduct a reconnaissance study. No interest in further study has been received from Camp Dawson.

Question. What is the estimated cost to conduct the necessary reconnaissance studies for Rowlesburg and Camp Dawson?

Mr. LANCASTER. The Administration and the Congress have reached an agreement that, in most cases, reconnaissance studies will be limited to $100,000, which will be used to identify the problem, the Federal interest in its solution, and a non-Federal cost sharing partner for a subsequent feasibility phase.

Question. Is a non-Federal partner and cost-sharing agreement necessary to complete the reconnaissance level study?

Mr. LANCASTER. No, sir. Only after completion of the reconnaissance phase would the potential sponsor and the Corps have to sign a cost sharing agreement to initiate the feasibility phase.

Question. If funds were provided in fiscal year 1998 to conduct the full reconnaissance studies for Rowlesburg and Camp Dawson, would the Corps be able to conduct such work in fiscal year 1998?

Mr. LANCASTER. Yes, the Corps could utilize these funds to conduct a full reconnaissance study for both locations.

Question. What is the estimated cost for the improvement identified as possible in Parsons?

Mr. LANCASTER. The channel improvement project is estimated to cost $9 million.

Question. What is the estimated cost for the feasibility study phase for Parsons?

Mr. LANCASTER. It has been estimated that the feasibility study would cost approximately $700,000.

QUESTIONS SUBMITTED BY SENATOR HOLLINGS

JASPER COUNTY, SOUTH CAROLINA

Question. Last year in the Energy and Water Appropriations bill, the Congress mandated that no funds, no matter the source, shall be used to acquire lands in Jasper County, South Carolina in connection with the Savannah Harbor, Georgia, navigation project. This was included by the Committee out of concern that the Corps was abusing or threatening to abuse its Federal authority to leverage acquisition of the South Carolina properties despite the opposition of the South Carolina property owners and local elected officials. What is the current status of the Corps efforts in this regard?

Answer. There is no effort underway by the Corps of Engineers to acquire lands in Jasper County, South Carolina, in support of the Savannah Harbor, Georgia, navigation project. The provision of lands required for a project is the responsibility of the local non-Federal sponsor. The Georgia Department of Transportation, the sponsor for the navigation project, is negotiating with the state of South Carolina concerning lands to be used as disposal areas for project dredged material and other purposes.

Question. I am well aware of the length which local sponsors go to acquire disposal areas. I have witnessed it in Charleston and Georgetown, South Carolina. If the Corps was or is planning to use Federal authority or leverage to acquire disposal areas for the Savannah Harbor project, what justifies the use of Federal powers in Savannah and not in Charleston and Georgetown?

Answer. The Corps of Engineers has been granted authority by the Congress to acquire lands in support of authorized project purposes. The use of the eminent domain authority has been required throughout the history of the Savannah Harbor navigation project when the local sponsor has requested the Corps of Engineers to condemn lands because the sponsor lacked the legal authority. The State of Georgia does not have legal authority to condemn lands in South Carolina. Several of the existing project disposal areas in South Carolina were acquired by Federal condemnation in the 1950's and 1960's and again in 1994 in support of the authorized project and at the request of the non-Federal sponsor. The use of Federal authority to acquire disposal area lands has not been employed for the Charleston and Georgetown, South Carolina, projects because Federal acquisition has never been requested by the non-Federal sponsors for those harbors.

Question. I understand the local sponsors in Savannah currently possess disposal easements on the South Carolina property. Have the South Carolina property owners denied access to disposal areas? If so, could you provide documentation of these instances?

Answer. Access to the disposal areas has never been denied by the South Carolina property owners. In this case, access to the local properties is by water or through the disposal area. Local property owners have never been denied access to their property through the disposal area by the project local sponsor.

Question. As I understand, there may have been some attempts by the Corps or the local sponsors to purchase these properties. Could you please provide me an update on these efforts?

Answer. At the present time, the Corps of Engineers is not involved in any attempts to purchase additional interests in lands for the Savannah Harbor navigation project disposal areas. The local sponsor, the Georgia Department of Transportation, is discussing the possibility of purchasing those lands with the land owners.

Question. I have been watching this situation closely for some time and like the property owners and local officials, I am willing to work with the Corps and Georgia officials, however, I will not tolerate the abuse of Federal authority. I look forward to working with the Corps and all interested parties to solve this problem.

Answer. The Corps of Engineers is striving to maintain a spirit of cooperation and will not abuse its Federal authority.

MYRTLE BEACH RENOURISHMENT PROJECT

Question. I was just in Myrtle Beach reviewing the first two reaches of the beach renourishment project. I would like to commend the Corps on a job well done. Unfortunately, there is a small glitch. To date, Congress has appropriated $35 million for the project and the Corps has spent $20 million, the rest has been reprogrammed. It is my understanding, the Corps is now $4.5 million short of funds needed to complete reaches one and two by the scheduled completion date of September 1997. If this shortfall remains, the contract will have to be suspended until fiscal year 1998 funds are made available. As you know a suspension in the contract

will cost taxpayers money. What is the Corps doing to restore the $4.5 million this year so as to avoid these additional costs?

Answer. The South Atlantic Division developed a corporate strategy to set project priorities to manage the Construction, General program funding shortfall occurring this fiscal year. The plan of action for the Myrtle Beach project for fiscal year 1997 is to monitor the progress of the project and reprogram funds as needed from other projects within the South Atlantic Division that have excess funds, thereby avoiding any additional costs due to suspension of the contract.

QUESTIONS SUBMITTED BY SENATOR MURRAY

TURBINE OUTAGES

Question. I understand that 5 turbine units will be out of service during the spring salmon migration. I am particularly concerned about Unit #5 at Ice Harbor Dam which is apparently out of service because a socket got left behind in the unit before it was fired up. These outages are costing the region needed power revenue as well as compromising fish passage conditions. Recognizing the very important needs to upgrade and maintain aging turbines, is it possible to avoid having turbines off-line during this critical time of the year? If not, why not?

General FUHRMAN. It is possible to minimize the risk of having units out of service during the critical fish time. Units that require maintenance, and would result in a direct impact to the fish passage program at the project, are not scheduled for a planned maintenance outage during the fish time unless the maintenance is associated with fish passage, such as bypass screen maintenance. An exception to this would be where the maintenance outage is short in duration, does not have an impact on fish passage, and has been coordinated with the Technical Management Team. Units that are undergoing a long-term major construction effort, such as rehabilitation, are scheduled to minimize the impact of the outage on the fish passage window if avoidance is not possible. As it can happen with all generating units, forced outages may occur during the critical time. We make all attempts to minimize the duration of the outage and to restore the unit to service.

Question. Are there changes in the way these projects are undertaken that would provide more flexibility to avoid the spring migration?

General FUHRMAN. A formal policy has been issued to restrict long term planned maintenance outages to outside the critical fish passage period. Short term maintenance outages will only be permitted if they are required for fish passage reasons or do not result in a direct impact to fish passage and have been coordinated with the Technical Management Team. We are in the process of evaluating our preparedness to respond to unscheduled unit outages in their eventuality. This includes having adequate spare parts available, prepositioned resources for repair, and installation of on-line equipment monitoring.

Question. Has the Corps implemented procedures to ensure the expensive mistake at Ice Harbor can not occur again? In brief, what are those procedures?

General FUHRMAN. At Ice Harbor Dam we have implemented a tool control process to be used during the work on the generator. This will reduce the probability of extraneous materials left in the generator during unit energization. We have also implemented an augmented program of electrical equipment testing to evaluate the remaining life of the generator winding. A formal unit startup procedure has been developed to capture all our "lessons learned" from the previous failures. Components in the generator which may have been adequate by prior standards but which are marginal by today's standard, have been replaced or will be replaced.

DIRECT FUNDING OF CORPS FISH AND POWER O&M:

Question. It is my understanding that the Corps is currently negotiating with the Bonneville Power Administration regarding direct funding of the Corps Fish and Power Operations and Maintenance costs. Direct funding of Corps O&M will provide real efficiencies and savings. The Bureau of Reclamation has already entered into a direct funding Memorandum of Agreement with BPA. Could you please explain the delays in the Corps entering into such an agreement?

General FUHRMAN. The Department of the Army has been working very hard with BPA on a revised MOA addressing the direct funding of the Corps' O&M. We transmitted a proposal to the Department of Energy on 24 February 1997 and recently received a reply which is being evaluated within the Army. To keep this process in perspective, BPA has already direct funded $8.1 million in Corps' non-routine O&M under an existing MOA between the agencies signed in December 1994. We are

presently working on additional sub-agreements to this MOA for direct funding of more non-routine O&M at Corps hydropower projects.

Question. If these issues have not been a concern for the Bureau, why can't they be worked out between the Corps and BPA?

General FUHRMAN. The Department of the Army is concerned about modeling an agreement after the one that the Department of Energy has with the Bureau of Reclamation. That agreement with the Bureau is similar to an agreement which has been proposed by BPA to the Army. The Army has provided comments to the Department of Energy on the proposed Direct Funding Agreement for Operations and Maintenance Power Costs between Bonneville Power Administration and the Department of the Army. Our principal concerns involve the BPA proposal to directly fund all hydropower O&M costs, a proposal for binding arbitration, and a proposal for monetary performance incentives.

Question. When do you expect to resolve this issue and initiate direct funding? Can this process be expedited? I would urge you to resolve it as soon as possible.

General FUHRMAN. As evidenced by the recent exchange of letters with the Department of Energy, we are working within the Administration to develop an expanded agreement for direct funding. We hope to finalize the agreement in the near future.

HOPPER DREDGE FLEET

Question. Please provide the following dredging information for federally funded maintenance, construction and unscheduled or emergency dredging in each of the last five years:

A. Total quantities dredged with all types of dredges.

B. Industry quantities dredged with all types of dredges.

1. Industry percent of the total (all types of dredges).

C. Corps quantities dredged with all types of dredges.

1. Corps percent of the total (all types of dredges).

D. Combined industry and Corps hopper dredge quantities and that percent of the total quantities for all types of dredges.

E. Industry hopper quantities.

1. Industry hopper percent of the total quantities for all types of dredges.
2. Industry hopper percent of the total quantities for hopper dredges.

F. Corps hopper quantities.

1. Corps hopper percent of the total quantities for all types of dredges.
2. Corps hopper percent of the total quantities for hopper dredge.

General BALLARD. I will provide that information for the record.

[The information follows:]

DREDGING PROGRAM—HISTORICAL SUMMARY

[Million C.Y.]

Fiscal year	All types of dredging					Hopper dredging					
	Total quantity dredged with all types of dredges (C.Y.)	Industry		Corps		Combined industry and Corps		Industry		Corps	
		Quantity (C.Y.)	Percentage of total	Quantity (C.Y.)	Percentage of total	Quantity (C.Y.)	Hopper dredging as percent of all types	Percent of total quantities for all types of dredges	Percent of total quantities for hopper dredges	Percent of total quantities for all types of dredges	Percent of total quantities for hopper dredges
1992	244.6	192.2	78.6	52.4	21.4	58.0	23.7	14.6	61.5	9.1	38.5
1993	269.9	231.5	85.8	38.4	14.2	63.5	23.5	15.9	67.6	7.6	32.4
1994	305.6	253.1	82.8	52.5	17.2	78.4	25.7	19.7	76.7	6.0	23.3
1995	251.2	189.5	75.5	61.7	24.5	63.1	25.1	17.0	67.6	8.1	32.4
1996	258.6	206.1	79.7	52.5	20.3	65.0	25.2	16.8	67.0	8.3	33.0

HOPPER DREDGE WORK—HISTORICAL SUMMARY

Question. Please report, by district, hopper dredge work for the past five years:

A. The number of industry bids per each hopper contract.

B.What is the average percentage of difference between the industry low bidder and the government estimate to do the work.

General BALLARD. I will provide that information for the record.

[The information follows:]

FIVE YEAR SUMMARY OF HOPPER DREDGING CONTRACT BIDS

The following tables indicate the hopper dredge work for the last five years. The tables are presented by East, Gulf, Great Lakes, and West Coast. Negative indicates the awarded contract bid amount was less than the government estimate. The government estimate does not include profit and overhead that the contractor must include in his bid. In addition, the percent difference does not reflect the actual cost difference (plus or minus) after dredging is completed and final payment is made to the contractor.

HOPPER DREDGING CONTRACTS BY DISTRICT

District	Project name	No. of bidders	Percent difference between winning bid and Government estimate[1]
EAST COAST			
Fiscal year 1992:			
Norfolk	Baltimore Hbr—Cape Henry	3	−38.2
Norfolk	Chincoteague Inlet	2	24.0
Philadelphia	Cape May, NJ Beachfill	3	−21.7
Charleston	Port Royal Ent. Channel	3	−20.5
Jacksonville	Kings Bay	3	90.9
Savannah	Brunswick Entrance Channel	3	43.7
Savannah	Savannah Entrance Channel	3	−36.6
Wilmington	Morehead City Harbor Ocean Bar	4	−29.5
Wilmington	Oregon Inlet Bar	3	24.3
Fiscal year 1993:			
New York	New York Harbor	3	4.2
Norfolk	Chincoteaque Inlet	2	−41.6
Norfolk	Thimble Shoal Lower Chspk. Bay	3	−34.9
Philadelphia	C & D Cnl/up Chspk	3	29.5
New England	Newburyport Harbor, Ma	2	−25.2
Charleston	Georgetown Entrance Channel	3	−38.2
Jacksonville	Naval Station Mayport	1	55.2
Savannah	Brunswick Entrance Channel	3	−2.1
Wilmington	Wilmington & Morehead O. Bar	3	−46.8
Fiscal year 1994:			
New York	Jamaica Bay	2	13.9
New York	Seabright 1a	2	−21.9
Norfolk	Cape Henry—York Spit	2	−36.5
Norfolk	Chincoteague Inlet	2	−49.0
Philadelphia	Schuylkill River	2	−1.1
New England	Conn. River. Below Hartford Ct	3	−39.7
Charleston	Georgetown Ent. Maintenance	2	−23.3
Charleston	Port Royal Ent. Maintenance	2	−30.4
Jacksonville	Duval Co Be, Cont 1 & 2[1]	4	−9.7
Jacksonville	Ft. Pierce Harbor (Was Pb/fp)	4	−60.6
Jacksonville	Kings Bay/Fernandina	2	−20.8
Jacksonville	Palm Beach Harbor (Terminated)	5	51.1
Jacksonville	San Juan Harbor	5	−26.0
Savannah	Brunswick Entrance Channel	3	26.9
Savannah	Savannah Entrance Channel	3	−25.4
Wilmington	Morehead City Harbor	3	16.9

HOPPER DREDGING CONTRACTS BY DISTRICT—Continued

District	Project name	No. of bidders	Percent difference between winning bid and Government estimate[1]
Wilmington	Wilmington Harbor Ocean Bar	2	9.2
Wilmington	Wilmington Harbor, Ocean Bar 2 yr	2	−37.9
Fiscal year 1995:			
Baltimore	Balt. Harb, Cape Henry, Va	3	−9.7
New York	Hudson River, Stuyvesant-germ	2	21.8
New York	Rockaway Beach Nourishment	3	52.2
Norfolk	Chincoteague In. Ocean Bar	2	15.1
Norfolk	Norfolk Harbor—45 & 50 Ft	1	−27.1
Norfolk	Rudee Inlet	2	−8.2
Philadelphia	Delaware River, Phila to Sea	2	31.9
New England	Block Island Harbor, RI	4	−27.6
Charleston	Charleston Entrance	3	−37.5
Jacksonville	Fernandina/Kings Bay Ent. Ch. & Tac	3	−18.6
Jacksonville	Palm Beach Harbor	2	36.4
Jacksonville	St Augustine Harbor	2	43.4
Savannah	Brunswick Entrance Channel	2	−12.8
Savannah	Savannah Entrance Channel	3	−28.5
Wilmington	Morehead City Ocean Bar	3	−7.1
Fiscal year 1996:			
New York	Jamaica Bay, NY	3	−19.3
Norfolk	Chincoteague Inlet—Ocean Bar	2	−8.6
Norfolk	Thimble Shoal	4	−23.0
New England	Newburyport Harbor, NH	2	−30.0
Charleston	Georgetown Entrance	2	−18.7
Charleston	N. Myrtle Beach Shore Protection	4	−3.5
Charleston	Port Royal Entrance, SC	2	−40.9
Jacksonville	Jacksonville Harbor	2	12.4
Savannah	Brunswick Entrance Channel	3	−19.0
Savannah	Savannah Entrance Channel	2	32.7
Wilmington	Manteo (Ocean Bar)	2	.....
Wilmington	Morehead City (Ocean Bar)	2	−43.2
GULF COAST			
Fiscal year 1992:			
New Orleans	Calcasieu River, Lsd Hopper	3	−16.1
New Orleans	Mississippi River, Swp Lsd Hopper 1	1	10.3
New Orleans	Mississippi River, Swp Lsd Hopper 2	1	19.7
New Orleans	Mississippi River, Swp Lsd Hopper 3	2	−31.8
Mobile	Mobile Harbor, Bay	3	−39.8
Mobile	Mobile Harbor, Upper & Lower	3	−16.0
Galveston	Brazos Is Harbor., Entrance Ch.	2	−4.7
Galveston	Freeport Harbor. Entrance Ch.	4	−45.9
Galveston	Snww, Sabine Pass out Bar Ch.	2	−50.4
Fiscal year 1993:			
New Orleans	Calcasieu R Bar Ch Lsd Hopper	1	23.4
New Orleans	Mississippi River Southwest Pass	2	−5.3
New Orleans	Mississippi River Southwest Pass	1	24.8
New Orleans	Mississippi River Southwest Pass	1	13.9
New Orleans	Mississippi River Southwest Pass	2	−13.2
New Orleans	Mississippi River Southwest Pass	1	22.8
New Orleans	Mississippi River Southwest Pass	1	3.7
Mobile	Mobile Harbor, Bay	3	−8.4
Mobile	Mobile Harbor, Bay	2	0.8
Mobile	Pascagoula Harbor, Bar	3	1.1
Galveston	Galveston Harbor Entr & Anchor	2	−1.3

HOPPER DREDGING CONTRACTS BY DISTRICT—Continued

District	Project name	No. of bidders	Percent difference between winning bid and Government estimate[1]
Fiscal year 1994:			
New Orleans	Calcasieu River Bar Channel	1	17.9
New Orleans	Mississippi River Southwest Pass	1	10.4
New Orleans	Mississippi River Southwest Pass	1	21.4
New Orleans	Mississippi River Southwest Pass	1	14.9
New Orleans	Mississippi River Southwest Pass	1	7.0
New Orleans	Mississippi River Southwest Pass	1	14.6
New Orleans	Mississippi River Southwest Pass	1	17.6
New Orleans	MRGO Bar Channel	1	17.0
Mobile	Mobile Harbor	3	3.6
Galveston	Freeport Harbor. Entrance Channel	1	22.9
Fiscal year 1995:			
New Orleans	Calc River Bar Channel	2	5.9
New Orleans	Mississippi River Southwest Pass	2	15.2
New Orleans	Mississippi River Southwest Pass	1	18.9
New Orleans	Mississippi River Southwest Pass	1	46.1
New Orleans	Mississippi River Southwest Pass	1	19.9
New Orleans	Mississippi River Southwest Pass	1	22.4
Mobile	Mobile Harbor, Bay	3	−32.6
Mobile	Mobile Harbor, Bay	2	−5.3
Galveston	Brazo I. Harbor/Entr Chan.	2	−14.2
Galveston	Freeport Entrance Chan	2	19.4
Fiscal year 1996			
New Orleans	Calcasieu River Bar Channel	2	−6.6
New Orleans	Mississippi River Southwest Pass	2	1.9
New Orleans	Mississippi River Southwest Pass	2	−1.2
New Orleans	Mississippi River Southwest Pass	2	−12.2
New Orleans	Mississippi River Gulf Outlet Bar Channel	2	−21.1
Mobile	Gulfport Bar	3	−47.5
Mobile	Mobile Bay	2	−3.7
Galveston	Brazo Island Harbor, Main Channel	3	−35.5
Galveston	Matagorda, Entrance Channel	1	0.5
GREAT LAKES			
Fiscal year 1992:			
Buffalo	Maunee Bay (Toledo Harbor)	2	−25.5
Buffalo	Sandusky Harbor, NY	3	−4.7
Buffalo	Toledo River (Maumee River)	3	3.8
Detroit	Channels in Lake St Clair, MI	3	14.0
Detroit	Detroit River, MI (Eo&II)	2	27.6
Detroit	Monroe Harbor, MI	3	17.5
Detroit	St Clair River, MI	3	−71.9
Fiscal year 1993:			
Buffalo	Conneaut	5	−6.3
Buffalo	Rochester/Oswego	4	7.8
Buffalo	Sandusky	3	7.2
Buffalo	Toledo Harbor	2	24.3
Buffalo	Toledo River	4	−17.9
Buffalo	Saginaw River, MI	3	−48.1
Fiscal year 1994:			
Buffalo	Toledo Closed	5	−4.8
Buffalo	Toledo Open water disposal	3	−0.4
Buffalo	Saginaw River, MI	3	−24.9
Fiscal year 1995:			
Buffalo	Toledo Harbor. Confined Disposal	2	−8.8

HOPPER DREDGING CONTRACTS BY DISTRICT—Continued

District	Project name	No. of bidders	Percent difference between winning bid and Government estimate[1]
Buffalo	Toledo Harbor. Open water disposal	4	11.5
Fiscal year 1996:			
Buffalo	Erie Harbor	5	−31.8
Buffalo	Huron Harbor	4	−24.8
Buffalo	Toledo Harbor. Open water disposal	4	3.8
Buffalo	Saginaw River, MI	4	−23.2
WEST COAST			
Fiscal year 1992:			
Portland	Mouth Columbia River	3	−14.0
San Francisco	San Pablo Bay, Mare Island St	2	−0.2
San Francisco	Suisun Bay Channel	2	6.9
Fiscal year 1993:			
Portland	Coos Bay Entrance Channel	2	22.9
Portland	Mouth Columbia. R. & Lwr. Will. R	3	−11.9
Portland	Oregon South Coast	2	18.7
San Francisco	Crescent City Harbor	2	−14.0
San Francisco	Oakland Harbor	3	−21.0
Fiscal year 1994:			
Portland	Columbia River/Coos Bay Entrance	3	−6.8
Portland	Oregon South Coast	3	6.5
Seattle	Grays Harbor & Chehalis River, WA–ID	2	−18.7
Seattle	Grays Harbor & Chehalis River, WA–OR	2	−2.4
Seattle	Grays Harbor-Fill SJ Spit Breach	2	14.1
San Francisco	Humbolt Bar & Entrance	2	3.3
San Francisco	Mare Island Strait	2	−12.0
San Francisco	Oakland Harbor	3	9.7
San Francisco	Petaluma River (ATF)	2	21.3
Fiscal year 1995:			
Portland	North Coast & Coos Bay Entrance	2	−8.2
Portland	Oregon South Coast	2	23.5
Seattle	Point Chehalis Beach Feed	2	−4.8
Los Angeles	Morro Bay Harbor	5	29.8
Los Angeles	Ventura Harbor Emergency Dredging	3	−46.4
San Francisco	Humboldt Harbor (Bar & Entrance Ch.)	2	−1.6
San Francisco	Oakland Harbor	3	−17.5
San Francisco	Pinole Shoal Channel	3	−32.4
Fiscal year 1996:			
Portland	Mouth Columbia R./Coos Bay Ent. Ch	2	4.9
Los Angeles	Beach Renourishment Stage 10	3	9.2
San Francisco	Humboldt harbor (Bar & Entrance ch.)	2	−7.3
San Francisco	Oakland Army Base	3	−9.1
San Francisco	Suisun Bay Channel	2	17.8

[1] Negative indicates the awarded contract bid amount was less than the government estimate.

HOPPER DREDGE WORK—DELAYS

Question. Please detail, on a district basis, project delays tied to dredge mobilization to the site or persistent breakdown of equipment.

General BALLARD. I will provide that information for the record.

[The information follows:]

SUMMARY OF DELAYED DREDGING WORK

Corps of Engineers district	Project	Delay in dredge arrival at job site from contract dredging start date (days)	Delay in contract completion due to contractor equipment breakdown (days)
Fiscal year 1993:			
Mobile	Mobile Bay	105	(2)
Savannah	Brunswick Harbor, GA	[1] 76	(2)
Fiscal year 1994:			
Mobile	Mobile Bay, AL	34	(2)
New York	Jamaica Bay, NJ	25	15
New York	Seabright, NJ Cut 1A	120	27
Fiscal year 1995:			
Mobile	Mobile Bay	23	(2)
Savannah	Brunswick Harbor, GA	[1] 30	(2)
Philadelphia	Philadelphia to Trenton	[3] 116	(2)
Fiscal year 1996:			
Mobile	Mobile Bay	[4] 60	(2)
Savannah	Brunswick Harbor, GA	[5] 11	(2)
Norfolk	Thimble Shoal	35	(2)
Norfolk	Chincoteague	14	(2)
New York	Jamaica Bay	24	(2)
New York	Long Branch, NJ	45	(6)

[1] Contractor commitment on other Corps project dredging.
[2] None.
[3] Contract was completed 140 days after contract scheduled completion date.
[4] Resolve bid protest.
[5] Contractor commitment on another Corps dredging project.
[6] Dredging not complete as of May 1997.

HOPPER DREDGE WORK—COST OVERRUNS

Question. Please detail, on a district basis, cost overruns due to higher bids or government dredge rate increases.

General BALLARD. I will provide a table with that information for the record. The government estimate does not include profit and office overhead as contractors include in their bids. Normally, 10 to 15 percent is included in a contractor's bid for profit and office overhead. The amount shown in the table is the actual difference between the government estimate and the awarded contract. No attempt has been made to adjust the government estimate for profit and overhead. Negative values indicate that the awarded bid was lower than the government estimate.

[The information follows:]

HISTORICAL SUMMARY OF OVERRUNS BY DISTRICT

[Actual dollars]

Corps of Engineers district	Project name	Contracts [1]	Government dredge [2]
Fiscal year 1992:			
Seattle	Grays Harbor, WA	874,500	
Norfolk	Chincoteague Inlet	142,763	
Charleston	Port Royal Entrance Channel, SC	384,100	
New Orleans	Mississippi Gulf Outlets	380,760	
New Orleans	Mississippi Gulf Outlets	427,070	
New Orleans	Mississippi Gulf Outlets, LA	−566,894	
New Orleans	Calcasieu, LA	−440,488	
Fiscal year 1993:			
Seattle	Grays Harbor, WA	624,500	
Savannah	Brunswick Harbor, GA	1,089,610	

HISTORICAL SUMMARY OF OVERRUNS BY DISTRICT—Continued

[Actual dollars]

Corps of Engineers district	Project name	Contracts [1]	Government dredge [2]
Charleston	Georgetown, SC	278,325	
Portland	South Coast, OR	331,250	
Portland	Coos Bay Entrance Channel, OR	171,000	
Portland	North Coast, OR	−599,850	
New Orleans	Mississippi River Baton Rouge to Gulf	−212,710	
New Orleans	Mississippi River Baton Rouge to Gulf	592,912	
New Orleans	Mississippi River Baton Rouge to Gulf	−427,010	
New Orleans	Mississippi River Baton Rouge to Gulf	553,125	
New Orleans	Mississippi River Baton Rouge to Gulf	647,230	
New Orleans	Mississippi River Baton Rouge to Gulf	98,030	
New Orleans	Calcasieu, LA	500,206	
Fiscal year 1994:			
Seattle	Grays Harbor, WA	−45,000	
Seattle	Grays Harbor, WA	440,000	
Seattle	Grays Harbor, WA	−48,000	
Savannah	Brunswick Harbor, GA	531,299	
Charleston	Port Royal Entrance Channel, SC	340,350	
Charleston	Georgetown, SC	177,200	
Portland	South Coast	281,700	
Portland	North Coast	−256,500	
New Orleans	Mississippi River Baton Rouge to Gulf	774,230	
New Orleans	Mississippi River Baton Rouge to Gulf	67,925	
New Orleans	Mississippi River Baton Rouge to Gulf	379,870	
New Orleans	Mississippi River Baton Rouge to Gulf	206,845	
New Orleans	Mississippi River Baton Rouge to Gulf	388,716	
New Orleans	Mississippi River Baton Rouge to Gulf	470,400	
New Orleans	Calcasieu River, LA	405,960	
New Orleans	Mississippi River Gulf Outlets	347,935	
Fiscal year 1995:			
Seattle	Grays Harbor, WA	−157,000	
Savannah	Savannah Harbor, GA	1,138,308	
Savannah	Brunswick Harbor, GA	321,383	
Charleston	Charleston Harbor Entrance Channel	991,900	
Portland	South Coast, OR	255,583	
Portland	North Coast, OR	−260,360	
New Orleans	Mississippi River Baton Rouge to Gulf	703,945	
New Orleans	Mississippi River Baton Rouge to Gulf	507,950	
New Orleans	Mississippi River Baton Rouge to Gulf	1,237,600	
New Orleans	Mississippi River Baton Rouge to Gulf	311,659	
New Orleans	Mississippi River Baton Rouge to Gulf	600,100	
New Orleans	Calcasieu	143,419	
Fiscal year 1996:			
Savannah	Brunswick Harbor, GA	236,251	
Philadelphia	Delaware River		685,000
Jacksonville	Canaveral Harbor		130,000
Jacksonville	Fort Pierce		15,000
New Orleans	Mississippi River		480,000
New York	Buttermilk Channel		96,000
Wilmington	Wilmington Harbor		95,000
Charleston	Charleston Harbor Entrance Channel	−764,000	
Charleston	Georgetown Entrance Channel	271,500	
Charleston	Port Royal Entrance Channel	576,000	
Charleston	Myrtle Beach Shore Protection	554,000	
Portland	North Coast	140,650	
New Orleans	Calcasieu River, LA	−182,790	

HISTORICAL SUMMARY OF OVERRUNS BY DISTRICT—Continued

[Actual dollars]

Corps of Engineers district	Project name	Contracts [1]	Government dredge [2]
New Orleans	Mississippi River Baton Rouge to Gulf	158,415	
New Orleans	Mississippi River Baton Rouge to Gulf	−37,807	
New Orleans	Mississippi River Baton Rouge to Gulf	−147,084	
New Orleans	Mississippi River Gulf Outlets	−515,026	

[1] Difference between awarded bid and government estimate.
[2] Additional project cost due to higher rental rate.

HOPPER DREDGE FLEET

Question. Please explain why charges for future dredge acquisition, known as "plant increment," are included in the daily rate calculations of the ESSAYONS, YAQUINA, WHEELER and McFARLAND: how much of these annual charges are collected from each of the Corps dredges on an annual basis as part of the daily rate each dredge bills navigation projects, and how are these funds maintained or spent by the Corps?

General BALLARD. The "plant increment" charge ensures that the Civil Works Revolving Fund remains self-sustaining by recovering the increased costs for replacement of Corps dredges, and other plant and equipment, due to inflation. The plant increment charges are included in the rental rate charged to projects using Corps dredges. Plant increment revenues are deposited in a Revolving Fund account at Corps headquarters and are allocated, as required, to Corps activities for the acquisition of plant and equipment, including dredges and other floating plant, through the Plant Replacement and Improvement Program (PRIP). Following are plant increment charges for fiscal year 1996.

Plant Increment Costs

[Fiscal Year 1996]

McFARLAND	$880,800.00
WHEELER	1,365,886.45
ESSAYONS	1,145,400.00
YAQUINA	646,400.04

HOPPER DREDGE FLEET

Question. Please explain the charges and the reasons for each change in depreciation of the ESSAYONS, YAQUINA, WHEELER and McFARLAND over the last five years. Were changes in depreciation for defense-related equipment? Have these changes increased the daily rate each dredge bills navigation projects?

General BALLARD. Plant depreciation provides for reimbursement of the Revolving Fund for dredge acquisition costs, including additions and betterments, over the dredge's useful life. Depreciation is recalculated annually based on the first cost of the dredge plus the cost of any additions and betterments, minus depreciation to date. The balance to be depreciated is divided by the number of months remaining in the dredge's estimated useful life to obtain the monthly depreciation charge, which is used to derive a daily rate. Recently, the Corps re-evaluated its policy on depreciating hopper dredges. Originally, the decision had been made to depreciate only 60 percent of the cost of the dredges on the basis that 40 percent of the cost was due to requirements attributable to their military mission. That decision was no longer supportable since our re-evaluation found that the cost due military mission requirements had been overstated. As a result of increasing the share to be depreciated, the daily rate of the dredges was increased.

Question. Over the past four years, Congress has directed the Corps to offer more hopper dredge work to the private sector. This additional work has taken from the traditional amount accomplished with the ESSAYONS, YAQUINA, WHEELER and McFARLAND in fiscal year 1992. Has this directive increased the average price-per-yard of the ESSAYONS, YAQUINA, WHEELER and McFARLAND and the daily rate the Corps bills navigation projects when it uses those dredges? Has this directive had an effect on the number and dollar amount of industry bids for hopper work? Has the Corps carried out any analysis of this Congressional directive?

General BALLARD. In fiscal year 1993, the Corps was directed to advertise an additional 7.5 million cubic yards of maintenance dredging normally performed by the

Corps hopper dredges. This restricted the dredges to 180 days per year of dredging. Each dredge operation time was decreased by 50 dredging days per year. The Corps dredges were placed in standby status in event industry was unable to accomplish the additional work. The hopper dredge owning district was provided funds, from savings and slippage, for the 50 days of standby time; therefore, the dredge rental rate remained the same with no additional cost to projects. Industry successfully accomplished the additional 7.5 million cubic yards of dredging. Beginning in fiscal year 1997 each Corps hopper dredge was placed on a 180 dredging day per year schedule. The rental rate for each Corps hopper dredge was adjusted accordingly. This will increase project dredging costs. Severe shoaling resulting from Tropical Storm Josephine in the Gulf, floods along the Ohio River and the upper mid-west placed an unusually high demand on both Corps and industry dredging capability. This increased the number of dredging contracts advertised for competitive bid and resulted in fewer bidders per contract advertisement, since industry dredging equipment was committed on other Corps projects. The Minimum Dredge Fleet study, currently underway, will include an analysis of the Congressional directive on the Corps dredging program.

MINIMUM DREDGE FLEET STUDY

Question. When will the Corps release its Minimum Dredge Fleet Study? Will it include an analysis of current and recent peak dredging seasons? What process does the Corps plan to carry out to provide Congress and interested stakeholders the opportunity to comment on a draft report before it is final?

Mr. LANCASTER. The Minimum Dredge Fleet study will be completed in July 1997. The study will include an analysis of dredging requirements including peak hopper dredge seasonal demands. The draft study will be coordinated with the Dredging Contractors of America, ports and other stakeholders, as well as interested committees and members of Congress.

HOPPER DREDGE OPERATING COST SUMMARY

Question. Please provide the amount of O&M funding consumed by operating the ESSAYONS, YAQUINA, WHEELER and McFARLAND in each of the last five years by examining their daily rate and the number of days each dredge worked.

General BALLARD. I will provide that information for the record.

[The information follows:]

DREDGING COSTS AND DAYS OF OPERATION PER YEAR

Fiscal year	McFARLAND		WHEELER		ESSAYONS		YAQUINA	
	O&M funds expended	Days	O&M funds expended	Days	O&M funds expended	Days	O&M funds expended	Days
1992	$11,405,854	240	$11,077,080	150	$14,217,500	235	$8,316,000	231
1993	13,472,006	188	17,020,000	180	9,502,500	181	6,545,000	187
1994	14,098,680	191	17,016,916	180	10,175,200	184	6,788,100	187
1995	15,155,580	192	16,901,219	193	12,720,000	212	7,200,700	191
1996	11,262,600	187	15,300,000	180	12,510,000	180	6,925,500	171

ABILITY TO MAINTAIN NAVIGATION CHANNELS

Question. How has the flooding in various parts of the country affected the Corps ability to maintain navigation channels at their authorized depth?

General BALLARD. At this time, the only dredging difficulties are on the lower Mississippi River. Shoaling along the Ohio River and Upper Mississippi River is not as severe as the lower Mississippi.

Question. Has the Corps experienced difficulties in acquiring enough dredges to meet peek dredging demands in some regions, such as the lower Mississippi River?

General BALLARD. Yes, sir. Two contracts were advertised and only one bid was received for each. Neither contract was awardable, since the bids exceeded the Government estimate by 27 and 29 percent. For this reason, the Corps hopper dredge McFARLAND was reassigned to the Mississippi River.

Question. Have there been questions regarding industry joint ventures and substitutions of equipment to respond to dredging needs in the Mississippi River recently?

General BALLARD. Yes, there have been questions. However, the industry has demonstrated a high degree of commitment to seek all legal ways possible to accomplish the dredging requirements.

Question. Has the Corps considered sending the McFARLAND and ESSAYONS to the lower Mississippi to meet dredging needs?

General BALLARD. The McFARLAND was assigned to assist on the Mississippi River emergency dredging. The Corps did consider sending the ESSAYONS to the Mississippi River, however, the dredge remained to remove substantial shoaling in the northwest navigation projects.

CRITERIA FOR MOVING DREDGES

Question. What is the process and what criteria are used to make decisions to move dredges to other regions in emergencies?

General BALLARD. First, we look at industry dredges, where they are working, their availability due to contract commitments, and if the contract dredge can be released without impacting commercial navigation. If sufficient industry dredges are not available, we look at the availability of Corps dredges.

EAST WATER DREDGING PROJECT FOR THE PORT OF SEATTLE

Question. The port of Seattle is working with the Corps to move the East Waterway dredging project forward expeditiously. The Port may choose to use its own funds this year to dredge a portion of this Superfund site to allow 45-foot draft container vessels and later use federal funds to complete the dredging. It will also seek feasibility study money in fiscal year 1998. In analyzing the costs and benefits of this project, can the Corps assure the Port that it will include the costs and benefits produced by work carried out by the Port's partial dredging when it does the cost/benefit analysis for the federal portion of the project?

General FUHRMAN. In conducting the study to determine the feasibility of the project as directed by Congress in Section 356 of the Water Resources Development Act of 1996, our analysis must conform to the Economic and Environmental Principles and Guidelines of the U.S. Water Resources Council and policies of the Administration. These policies require recognition of conditions that would prevail in the absence of Federal participation as the basis for evaluating benefits and costs. Therefore, our study will evaluate the feasibility of deepening the East Waterway on the basis that the work to be performed by the Port of Seattle is in place, which means the benefits and costs of the Port's work will not be included in the analysis.

QUESTIONS SUBMITTED BY SENATOR DORGAN

RED RIVER VALLEY FLOODING, NORTH DAKOTA AND MINNESOTA

Question. During the winter of 1996–1997, North Dakota suffered from record snowfall, which endangered the lives of residents and their livestock and crops. Then North Dakota suffered the worst flooding ever recorded in North America. These conditions led to Presidential disaster declarations to assist North Dakotans. Does the Corps of Engineers need additional funding in fiscal year 1997 or fiscal year 1998 to meet the needs of North Dakota that resulted from the snow, blizzards, and flooding of the winter of 1996–1997?

General FUHRMAN. It is expected that the 1997 flood disaster will generate numerous local initiatives to implement permanent flood control projects at various communities in the Red River of the North basin. Potential projects could be implemented as a specifically authorized project or through the Continuing Authorities Program (CAP), which gives the Chief of Engineers the discretionary authority to plan, design, and construct small flood control projects. Communities that are expected to request projects include Grand Forks, Grafton, Wahpeton, Abercrombie, Valley City, Fort Ransom, Lisbon, Kindred, Fargo, Mapleton, Harwood, North River, and Drayton in North Dakota and East Grand Forks, Breckenridge, Moorhead, Perley, Hendrum, Shelly, Crookston, Beltrami, Warren, Kennedy, Hallock, Roseau, and St. Vincent in Minnesota. Of these communities, only East Grand Forks has a specific authorization for a project. Current fiscal year 1997 funding and fiscal year 1998 budget amounts include funds only for the ongoing feasibility study at Grand Forks and continuation of Preconstruction, Engineering and Design at Crookston. There is also some very limited funding for initial community meetings and to initiate some CAP studies, although the nationwide demands for this program greatly exceed the funds available. Additional funds could be used in fiscal year 1997 and fiscal year 1998 to reactivate the East Grand Forks project. We will continue to monitor the flood recovery effort and work closely with the affected com-

munities to develop both short and long term solutions to the flood problems in the basin.

Question. What are the major measures that helped to prevent flooding in most communities such as West Fargo, Fargo and others? How much damage was prevented?

General FUHRMAN. The Corps of Engineers operates several permanent flood control reservoirs in the Red River basin which allowed us to store flood waters in the reservoir rather than releasing them downstream to contribute to the already swollen rivers and streams. These projects at Lake Ashtabula, Lake Traverse, Homme Lake, Orwell Lake and Red Lake Reservoir prevented several million dollars in damages during the 1997 flood. In addition, several local flood protection projects constructed by the Corps prevented or greatly reduced flood damages at such communities as Fargo, West Fargo, Enderlin and Pembina in North Dakota and Oslo and Halstad in Minnesota. In particular, the Sheyenne River Diversion Channel at West Fargo prevented an estimated $100 million in damages from occurring. Advance measures, which are emergency flood protection projects built by the Corps to protect public property and facilities in anticipation of serious flooding, were constructed at about 25 Red River communities in North Dakota and Minnesota; these projects resulted in substantial flood damage reduction. A preliminary assessment indicates that about $500 million in flood damages were prevented in the Red River basin during the 1997 flood as a result of permanent projects, advance measures and emergency works.

Question. While we are still fighting the current floods, could you describe the Corps of Engineers' long-term plans to prevent or mitigate damages due to flooding along the Red River of the North, the Sheyenne River and the James River?

General FUHRMAN. The Corps has several ongoing initiatives in the Red River, Sheyenne River and James River basins to address water resource problems at individual communities. A feasibility study is underway to investigate flood damage reduction measures along the Red River of the North at Grand Forks, North Dakota. Similarly, preconstruction, engineering and design are underway for a flood control project at Crookston, Minnesota. The remaining component of the Sheyenne River project, a 5 foot raise of the Baldhill flood pool, is in the detailed design phase; when completed, this project will provide additional flood control storage for protection of downstream communities. Other previously studied projects could be revisited in light of the catastrophic flooding this spring. Among these potential projects are East Grand Forks, MN; Grafton, ND; Pembina River, ND; and Twin Valley Lake, MN. Several small projects, which would provide protection for individual communities, are being pursued under the Continuing Authorities Program. With available funding, we will work closely with local communities to develop permanent flood control solutions consistent with the needs of the area and the region.

[Note: Projects in James River basin were not addressed in above response; that basin is in MRD].

Question. The Corps of Engineers mission includes both preparation and response to disasters throughout the nation. Will the Corps have the staff and technical expertise to respond to both man-caused and natural disasters after implementing the proposed restructuring?

General BALLARD. While some of our emergency operations resources will be located at different locations following reorganization, the Corps will continue to be able to meet our responsibilities in times of disaster. Our strength lies in maintaining a cadre of full-time professionals dedicated to natural disaster response at each district and division office. Our ability to respond to disasters is multiplied and leveraged through trained responders such as engineers, contract specialists, real estate specialists and others who are made available from their normal jobs in Corps offices across the country for response to each major disaster. This system allows us the ability to rapidly provide disaster response teams.

Question. One integral part of the Corps work in preparing for the Red River Valley through flood mitigation is the Technical Resource Service which was authorized in the 1988 Water Resources Development Act. What level of funding would allow the Corps of Engineers to provide a full range of technical services for the development and implementation of state and local water resources initiatives within the Red River basin in North Dakota?

General FUHRMAN. Subject to the Administration's policy regarding capability amounts for individual projects and the need for offsetting reductions to maintain overall budgetary objectives, we could use $500,000 for the Red River Technical Resource Service to supplement local efforts in the planning, design and development of local flood control projects. The Service would help to develop a technical base and planning information from which local interests would evaluate their projects

from a larger basin-wide perspective in order to develop cost effective and comprehensive basin-wide projects that would ensure the greatest benefit to the region.

MISSOURI RIVER

Question. The Corps of Engineers is currently in the process of revising the Missouri River Master Manual. One concern for many residents of North Dakota is the unchecked siltation and erosion created by the construction of the Pick-Sloan plan. Others continue due to the requests of downstream navigation interests. What is the Corps doing to incorporate reasonable bank stabilization mechanism as well as to minimize impacts of navigation needs on upper basin states?

General FUHRMAN. Investigations being conducted for the Missouri River Master Water Control Manual Review and Update are limited to those necessary to determine if the current Water Control Plan used as a guide in the operation of the Missouri River Mainstem Reservoir System, or an alternative plan, best meets the contemporary needs of the basin. Structural solutions to bank erosion and siltation are not being pursued in the Review and Update.

Regarding impacts of navigation, all significant impacts related to a potential change in the water control plan for the Mainstem System will be documented in a Revised Draft Environmental Impact Statement (EIS) scheduled for completion in May 1998.

Question. What are the Corps' plans to incorporate reasonable dam releases to maintain the benefits of recreation, wildlife and power production to the upstream states?

General FUHRMAN. The Corps Missouri River Region Reservoir Control Center sets releases at the Main Stem Missouri River Dams in order to satisfy the congressionally authorized multiple purposes: flood control, water supply and water quality, recreation, navigation, irrigation, hydroelectric power, and fish and wildlife including endangered species. In order to help serve these project purposes, the original water control plan still in effect for the Master Manual was selected ensuring that adequate space in the system be reserved by March to store large flows originating in the upper basin and that the system would not be drawn down below permanent pool level throughout another drought similar to one experienced in the 1930's.

Question. The Corps of Engineers is reducing the number of Division offices and proposes to move the Division that supervises the St. Paul District and the rest of the Mississippi River to Vicksburg, Mississippi. How will the reorganization of the Corps of Engineers impact customer service to communities in the Northern Great Plains?

Mr. LANCASTER. Under the former organization, the Mississippi River basin was managed by two division headquarters. The river south of St. Louis was under the management of the Lower Mississippi Valley Division, headquartered in Vicksburg, Mississippi. The northern basin was managed by the North Central Division, headquartered in Chicago. Under the reorganization, the entire Mississippi will now be managed by the Vicksburg headquarters, renamed as the Mississippi Valley Division.

The Chief of Engineers and I envision no impact to customer service under this plan. Districts will continue to provide products and services to local communities as they always have. District functions, missions, personnel, and areas of responsibility, to include those in the St. Paul District, all remain as they were prior to the reorganization.

On a regional basis, we believe the entire Mississippi valley will benefit from being managed by one headquarters that can balance and coordinate the various interests throughout the basin.

Question. The Corps' restructuring plan shifts some roles from the Divisions to Districts. Divisions will concentrate on four functions: command and control, regional interface, program management, and quality assurance. Technical review is now performed at the Districts level and policy is a function of Headquarters in Washington, D.C. Describe your approach to the regional interface function in the Corps of Engineers?

General BALLARD. Regional interface is among the more important and most productive functions of a division headquarters. It is through such activities that groups with diverse interests are brought together to resolve issues and solve problems. Most interface with other agencies, sponsors, special interest groups, and the general public is carried out by our district offices and this will not change with restructuring. District roles in this regard are not changed. Divisions provide regional interface in dealing with issues or opportunities that exceed a single district's boundaries or in dealing with groups whose areas of interest cover more than one district. This process ensures a more reasoned and consistent approach to issue res-

olution. In any event, Divisions coordinate carefully and continually with Districts to assure everyone is involved and informed.

Divisions interact with Federal and state agencies, Congressional leaders, regional interest groups and with regional and international commissions such as the Mississippi River Commission and the International Joint Commission. Additionally, Divisions manage and coordinate the Corps' response to regional and national emergencies; participate in development of regional agreements; coordinate and mediate regional interests, concerns and requirements; and assure Corps programs and capabilities are visible and understood through establishment and maintenance of contact with regional customers. The recent restructuring will enhance our ability to carry out this function because of the creation of Divisions that are more reflective of common water resources problems and opportunities. This will allow more effective and efficient integration of Federal, state, local, and private activities and will facilitate regional consideration of problems, solutions, and impacts.

BUFORD-TRENTON

Question. The Buford-Trenton Irrigation District is a 50-year-old irrigation project located at the upper end of Lake Sakakawea below the confluence of the Missouri and Yellowstone Rivers. Crops grown on this land include sugar beets, durum, alfalfa, and specialty crops. The project has a regional economic impact of more than $11 million. Ice jams have caused flooding and siltation has caused a rising water table. Structural solutions to these problems are not cost effective. Therefore, purchasing flood easements would compensate landowners. Last year, I worked with the Corps and local landowners to authorize $34 million in the Water Resources Development Act for the purchase of flowage easement for the Buford-Trenton area. The Corps informs me that they will be able to move forward with the purchase of $5 million in easements in fiscal year 1998. If funds are appropriated for Buford-Trenton, can I receive assurances that they be spent for intended purposes?

Mr. LANCASTER. Section 336(a) of WRDA 1996 authorizes the Corps to acquire flowage and saturation easements. The Corps headquarters is currently reviewing the Real Estate Design Memorandum. If added to the fiscal year 1998 budget, $5 million in easements at Buford-Trenton Irrigation District, North Dakota, is a realistic estimate. Should the Congress chose to appropriate funds, they will be used to proceed with the acquisition of easements.

DEVILS LAKE, NORTH DAKOTA

Question. The elevation of Devils Lake has been rising and the lake has been expanding since 1940. Because Devils Lake is an enclosed basin, there is no way for water to exit the lake except by evaporation. The effects of an expanding Devils Lake are dramatic. Infrastructure such as roads and sewage treatment facilities, that were as much as 8 miles from the lake are now inundated. Flooding in the Devils Lake basin has resulted in presidential disaster declarations the past four years.

The worst flood in 150 years is predicted this spring. Catastrophic damage is anticipated. The National Weather Service now predicts that Devils Lake will rise another 6 feet to an elevation of 1,444 feet msl. While short-term mitigation efforts are underway, a long-term solution is necessary to save the City of Devils Lake and the surrounding region. An appropriation of $1.1 million has been requested for the stabilization feasibility study by the Corps of Engineers. I fully support that request. In the fiscal year 1997 emergency supplemental, the President requested a total of $32.5 million. Can you please describe why this is cost effective and is an emergency need, how the outlet fits into your comprehensive strategy, and how the Corps will address downstream and environmental concerns?

General FUHRMAN. The rapidly rising lake level at Devils Lake has caused extensive damages in the basin and led to requests for emergency assistance and a solution to the flooding problems. Because of the urgent nature of the problem and the need for an immediate solution, an expedited funding process is required. Potential damage estimates from forecasted lake level rises of another 6 and ½ feet (from elevation 1,437.5 to 1,444) are estimated to exceed an additional $140 million. Currently, the lake is rising at 0.1 feet per day and major decisions are being made concerning transportation and infrastructure that will already affect the basin, the Indian community, State, and region for many years to come. The outlet is not being proposed as the only action to solve the problems of flooding around Devils Lake. Other actions include relocations of low-lying structures around the lake which are taking place through the Flood Insurance Program; levee raises through Corps of Engineers emergency authorities to protect the city of Devils Lake; providing water storage in the upper basin to reduce the volume of flows reaching Devils Lake; and raising and protecting rural utilities around the lake. There is a comprehensive

multi-agency effort to address the flood problems associated with the rising level of Devils Lake. The outlet is only one component; however, it is a key component that is necessary to take water out of the lake system at a controlled rate that will minimize any potential downstream impacts. Downstream environmental concerns will be addressed. Preliminary conclusions from a U.S.-Canada joint working group evaluation are that the risk of adverse impacts at the International Border from outlet-related biota transfer is minimal. The outlet as proposed would meet applicable water quality standards. The outlet would not be operated when there is a potential threat of downstream flooding. One of the key constraints on outlet operation would be the Sheyenne River's channel capacity at the release point of the outlet into the Sheyenne. Channel capacity of the Sheyenne River increases as it goes downstream and the risk of any adverse effect on downstream flooding is minimal.

Question. Will an appropriation of $1.1 million adequately fund the Corps' work on the Devils Lake Stabilization Feasibility Study in fiscal year 1998?

General FUHRMAN. Yes, in general, additional funding would not substantially speed up the process. Some elements of the feasibility study could be accelerated with unlimited funding; however, critical path items will continue to control the schedule. For example, collecting water quality samples takes time in order to provide a meaningful baseline. Likewise, the public scoping process will be a progressive consensus-building effort to establish concerns of tribal, downstream, and environmental interests. Currently, the feasibility study has been focusing on measures related to the rising lake level, i.e. the outlet, upper basin storage and water quality. Completion of the feasibility study also includes inlet-related aspects which have not been addressed. The inlet will likely be even more contentious as evidenced by Canada, Minnesota and environmental groups already associating the outlet with the Garrison project and biota transfer issues. Finally, the feasibility study was predicated on meeting the normal timeline for NEPA requirements. If the feasibility study and NEPA process were abbreviated, environmental interests would likely object on the same grounds that they are using with regards to the emergency outlet authorization.

CONCLUSION OF HEARINGS

Senator BYRD. The last word in the Bible is "Amen." This subcommittee will recess in accordance with the wishes of the chairman, subject to the call of the Chair. Thank you very much.

[Whereupon, at 11:40 a.m., Thursday, April 24, the hearings were concluded, and the subcommittee was recessed, to reconvene subject to the call of the Chair.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1998

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

NONDEPARTMENTAL WITNESSES

[CLERK'S NOTE.—At the direction of the subcommittee chairman, the following statements received by the subcommittee are made part of the hearing record on the Fiscal Year 1998 Energy and Water Development Appropriations Act.]

CALIFORNIA WATER RESOURCE DEVELOPMENT PROJECTS

PREPARED STATEMENT OF DANIEL F. KRIEGE, CHAIRMAN, CALIFORNIA WATER COMMISSION

The California Water Commission is an official agency of the State of California. It is composed of nine representative citizens from throughout the State. The Commission is charged by statute with representing State of California and local interests before your Committee. The Commission is coordinating the filing of the statements of a number of State and local agencies. On behalf of the California Water Commission, I would like to express our sincere appreciation for the support this Committee has given California water, fishery and flood control appropriations over the years. I am privileged to submit to you the official recommendations of the State of California for fiscal year 1998 appropriations.

The Commission would like you to know that it supports projects as shown on the attached document entitled, California Water Commission—Final Recommendations for fiscal year 1998 Federal Appropriations for California Water, Fishery and Flood Control Projects, March 7, 1997, That document contains recommendations adopted by the Commission on March 7, 1997.

Special Recommendations for Funds.—The Commission also recommends funds be appropriated for projects of the U.S. Army Corps of Engineers, U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service as shown in the following table. The Commission feels that these are projects merit special consideration and provides additional information on those projects following the table.

CWC No.	Project and county	Presidents budget fiscal year 1998	CWC Final recommendation fiscal year 1998
	U.S. ARMY CORPS OF ENGINEERS		
100	CALFED/S.F. Bay-Delta (Also see CWC 500)	.....	$400,000
112	Sacramento River Watershed Management Study	$400,000	1,100,000
128	San Joaquin River Watershed Management Study	.....	1,200,000
304	Sacramento River Flood Control Project	.....	.....
304A	Mid-Valley Area Levee Reconstruction	3,100,000	5,600,000
304B	Marysville/Yuba City Levee Reconstruction	7,300,000	9,300,000
304C	Upper Sacramento Area Levee Reconstruction	200,000	2,700,000
304D	Lower Sacramento Area Levee Reconstruction	300,000	2,000,000
352	Wildcat and San Pablo Creeks	.....	1,353,000

CWC No.	Project and county	Presidents budget fiscal year 1998	CWC Final recommendation fiscal year 1998
381	Los Angeles County Drainage Area Project	11,700,000	40,000,000
387	Norco Bluffs Bank Stabilization, Santa Ana River	.....	1,500,000
400	WRDA, 1996, Section 205, Flood Damage Prevention Continuing Authorities Program Nationwide	32,400,000	(1)
410	WRDA, 1996, Section 206, Aquatic Ecosystem Restoration	2 2,000,000	(1)
420	WRDA, 1996, Section 503, Watershed Management, Restoration and Development ($15 million allocated for length of program)	(2)	(1)
430	WRDA, 1986, Section 1135, Project Modifications for Improvement of the Environment	2 21,175,000	(1)
	U.S. BUREAU OF RECLAMATION		
500	CALFED S.F. Bay-Delta Program (Also see CWC 100)	143,300,000	143,300,000
612A	Coleman National Fish Hatchery Modification (Includes $3,773,000 Restoration Fund monies)	5,773,000	5,773,000
612B	Buckhorn Fish Hatchery (Shasta)	.....	450,000
621	Winter-Run Chinook Salmon Captive Broodstock Program (USBR—$241,000; Restoration Fund—$259,000; NOAA—$250,000)	.....	750,000
646	Rock Slough Fish Screen (Contra Costa)	250,000	2,500,000
688	Anadromous Fish Screening Program (Includes $2,000,000 Restoration Fund monies)	5,000,000	8,000,000
635	Auburn-Folsom South Unit	1,538,000	11,538,000
660A	Arroyo Pasajero	190,000	390,000
701	Central Valley Project Operations and Maintenance (includes CVPIA)	70,611,000	73,611,000
900	Water Recycling Projects—Public Law 102–575, Title XVI/Public Law 104–266	53,204,000	(3)
1108	Salton Sea Area Study	400,000	400,000

[1] Support.
[2] Nationwide.
[3] Various.

U.S. ARMY CORPS OF ENGINEERS

CWC 100—CALFED/S.F. Bay-Delta Process (Also see CWC 500).—The CALFED Bay-Delta Program is a cooperative effort among State and Federal agencies and the general public to ensure a healthy ecosystem, reliable water supplies, good water quality, and stable levees in California's Bay-Delta. The Corps of Engineers will be formally joining the CALFED program in the near future. The California Water Commission recommends a fiscal year 1998 appropriation of $400,000 to allow Corps planning and environmental experts to officially participate in the CALFED activities

CWC 112—Sacramento River Watershed Management Study.—The levee failures and devastating floods resulting from the January 1997 storms indicate that the Sacramento River Flood Control System together with the Sacramento River Bank Protection Project need to be improved. The Sacramento River Watershed Management Study would provide a long range management program for the Sacramento River. The objective of this study is to improve the overall flood protection for areas in the Sacramento River Basin while allowing for restoration and protection of environmental features including wetlands, fish and wildlife habitat restoration and water quality improvements. Reducing the need for perpetual bank protection by reconfiguring the existing system would have significant flood control and environmental benefits.

The study area includes the entire Sacramento River Drainage basin in Northern California area including the Sacramento River Flood Control Project and the Sacramento River Bank Protection Project. The project provides flood protection to most of the metropolitan areas located in the greater Sacramento Valley, including the State Capital in Sacramento. This area would clearly benefit from a comprehensive planning effort. Once completed, this study will provide a framework for a management plan that can be effectively implemented and supported by local, State and federal agencies.

The California State Reclamation Board has expressed its support for the study in October 1996 and is willing to participate in the feasibility phase of the study by funding 50 percent of the $8,000,000 study. The Feasibility Cost Sharing Agreement is scheduled to be signed in January 1998. The feasibility study is scheduled for completion in January 2002. The Corps of Engineers is currently working on the reconnaissance phase of the study and is scheduled to complete this phase in January 1998.

The California Water Commission supports a fiscal year 1998 appropriation of $1,100,000 to initiate the Sacramento River Watershed Management Study.

CWC 128—San Joaquin River Watershed Management Study.—The devastating flooding and levee failures resulting from the 1997 storms indicate the need for increased flood protection on the Lower San Joaquin River Flood Control Project and the San Joaquin River Levee project. The San Joaquin River Watershed Management Study will develop the framework for a comprehensive, multi-objective plan for strengthening the existing flood control system in harmony with managing water and environmental resource activities.

The study area includes the San Joaquin River from its headwaters above Friant Dam to the Sacramento-San Joaquin Delta and the Kings River a tributary during the flood season to the San Joaquin River. This area includes nine counties and four major communities including Stockton, Modesto, Merced, and Fresno. This area would clearly benefit from a comprehensive planning effort. The study will identify objectives for managing the flood control project and assist in the coordination of all activities related to flood management, including environmental, recreational, economic, and water resources issues.

The California State Reclamation Board has expressed its support for the study and is willing to participate in the feasibility phase of the study by funding 50 percent of the $9,000,000 study. The complete study including the reconnaissance and feasibility phases will take three years to complete.

The California Water Commission supports an fiscal year 1998 appropriation of $1,200,000 to initiate the San Joaquin River Watershed Management Study.

CWC 304—Sacramento River Flood Control Project—(Flood Control Evaluation).—Following the record high flows of February 1986, Operations and Maintenance funds were provided under Inspection of Completed Works to perform an evaluation of the integrity of the Sacramento River Flood Control System. A five phase program which divided the system into five study areas was developed. In each phase, the structural stability of the levees is examined and a determination made as to whether the system is functioning at its design level. The results of each study phase are submitted as an Initial Appraisal Report (IAR).

The first phase was the Sacramento area levees. This phase consisted of slurry walls within the levee section and landside berms which were constructed and performed well during the January 1997 flood. The second phase is the Marysville/Yuba City area. Part of this work was completed in 1996. Other work was scheduled for 1997; unfortunately, the levee failed in January 1997 exactly where work was scheduled to be done.

In order to accelerate the levee reconstruction work in the remaining areas of the overall system (Phase II–V), the California Water Commission is requesting additional funding for each of those phases as indicted above

CWC 352—Wildcat and San Pablo Creeks.—The project is located on the east side of San Francisco Bay in the vicinity of San Pablo and Richmond, Contra Costa County, California, about 20 miles northeast of San Francisco. The Reach 1 portion of the project consists of 9,900 lineal feet of channel and levee work on Wildcat Creek and 10,000 lineal feet of channel and levee work on San Pablo Creek. Improvements include open, concrete, rock, and earth channels and levees, culverts and a sediment basin. Additionally, about 20 acres will be planted for mitigation of fish and wildlife impacts.

No funds were budgeted in fiscal year 1997. Carryover funds are being used to fund remaining construction contract payments, project audit and close-out activities for flood control features, and initial reimbursement to the sponsor for 50–50 cost sharing of Phase 2 recreation contract costs in accordance with the LCA. No funds are budgeted in fiscal year 1998. The Commission supports funding of $1,353,000 to be used for remaining reimbursement to the sponsor for the Phase 2 recreational contract

CWC 381—Los Angeles County Drainage Area Project.—The project covers a 2,000 square-mile area within the county of Los Angeles and includes portions of the metropolitan region of the city of Los Angeles. The project consists of upgrading the existing system, raising and converting channel walls of the Rio Hondo and lower Los Angeles River channels, and modifying bridges.

The February-March 1980 floods exceeded the capacity of the channel in the upper reaches of the Los Angeles River and nearly overtopped the levee in the lower LA River. A breach in the levee could have induced catastrophic damages to residential, commercial, and industrial properties in Long Beach. Studies to date indicate that a 100-year flood would impact 52,000 acres, with damages totaling about $2.35 billion. Portions of the existing system cannot contain a 50-year flood event. Average annual benefits, at October 1991 price levels, are $58,616,000, all flood control.

The LACDA Project was authorized by Congress in 1992 and received a Record of Decision to proceed from the Assistant Secretary of the Army in 1995. It is scheduled to be constructed in several phases over the next five years at a total cost of approximately $260 million. The first construction contract was awarded in fiscal year 1995.

Design is underway and the Commission supports expenditure of $40 million in fiscal year 1998 to accelerate construction.

CWC 387—Norco Bluffs Bank Stabilization, Santa Ana River.—The study area is located approximately 40 miles southeast of Los Angeles in the City of Norco along the south bank of the Santa Ana River. Flood induced migration of the main channel of the Santa Ana River to base of the bluffs has resulted in undercutting and subsequent bank destabilization which threatens residential development along the edge of the bluffs.

The Riverside County Flood Control and Water Conservation District supplied the following information in a August 30, 1996, letter on this new request: "This is a project to protect a susceptible 65-foot high bluff in Norco from further retreat into a developed residential neighborhood which results when flood flows occur in the Santa Ana River. The completed feasibility report for this project was submitted for Washington level review. General Genega, Directorate of Civil Works, made a commitment to have a Chief's Report for the study by the end of December 1996.

The Chief's report was completed on time and the project has been authorized for construction by language in the Water Resources Development Act of 1996. The Commission supports an fiscal year 1998 appropriation of $1.5. million to complete plans and specifications and initiate construction of the Norco Bluffs Bank Stabilization project.

CWC 400—WRDA, 1996, Section 205, Flood Damage Prevention.—The California Water Commission heard testimony at its March 7, 1997 meeting requesting support on six individual projects (See Page 5 of Exhibit A for individual projects). Each of these projects have merit and are needed to prevent recurring flood damages in the local areas. The Commission supports these projects for funding from this Continuing Authority for small projects.

CWC 410—WRDA, 1996, Section 206, Aquatic Ecosystem Restoration and Protection.—The California Water Commission heard testimony at its March 7, 1997 meeting requesting support on three individual projects (See Page 5 of Exhibit A for individual projects). The Commission supports these projects to improve the quality of the environment. Section 206 directs the Secretary of the Army to carry out such project if the Secretary determines that the project will improve the quality of the environment and is in the public interest; and is cost-effective. The cost-sharing provisions state that the non-Federal interests shall provide 35 percent of the cost of the construction of any project carried out under this section, including provision of all lands, easements, rights-of-way, and necessary relocation. Construction of a project under this section shall be initiated only after a non-Federal interest has entered into a binding agreement with the Secretary to pay the non-Federal share of the costs of construction required by this section and to pay 100 percent of any operation, maintenance, and replacement and rehabilitation costs with respect to the project in accordance with regulations prescribed by the Secretary. There is a $5 million cap for Federal funds to be allotted under this section for a project at any single location.

CWC 420—WRDA, 1996, Section 503, Watershed Management, Restoration and Development.—The California Water Commission heard testimony at its March 7, 1997 meeting requesting support on three individual projects (See Page 5 of Exhibit A for individual projects). The Commission supports fiscal year 1998 appropriations for the three projects. This provision gives the Secretary of the Army the authority to have the Corps provide technical, planning and design assistance to non-Federal interests for carrying out watershed management, restoration and development projects at locations listed in Section 503, WRDA 1996.

CWC 430—WRDA, 1986, Section 1135, Project Modifications.—The California Water Commission heard testimony at its March 7, 1997 meeting requesting support on eight individual projects (See Page 6 of Exhibit A for individual projects). The Commission supports fiscal year 1998 appropriations for each of these projects. Section 1135 of WRDA of 1986 directs the Secretary of the Army to review the oper-

ation of water resources projects constructed before the date of the Act to determine the need for modifications in the structures and operations of such projects for the purpose of improving the quality of the environment in the public interest.

500—CALFED S.F. Bay-Delta Program (Also see CWC 100).—The CALFED Bay-Delta Program is a cooperative effort among State and Federal agencies and the general public to ensure a healthy ecosystem, reliable water supplies, good water quality, and stable levees in California's Bay-Delta. The President's fiscal year 1998 Budget, contains $143 million to be spent specifically in pursuit of CALFED objectives. This money is appropriated to the U.S. Bureau of Reclamation to hold for the participating CALFED agencies as spending decisions are made.

California voters approved the $995 million Proposition 204 on the November 1996 ballot. This general obligation bond measure provides $390 million for the Bay-Delta Ecosystem Restoration Program.

During Phase I, from June 1995 through August 1996, the Program identified these problems, developed a mission statement and several guiding principles, and designed three alternative solutions. In Phase II, from June 1996 to September 1998, the Program will conduct a broad-based environmental review of the three alternative solutions will identify the one preferred alternative. During Phase III, starting in late 1998 or early 1999 and lasting for many years, the preferred alternative will be implemented in stages.

The California Water Commission strongly supports an fiscal year 1998 federal appropriation of $143,300,000, which is in the President's fiscal year 1998 budget.

CWC 612A—Coleman National Fish Hatchery Modification.—The Coleman National Fish Hatchery was built by the U.S. Bureau of Reclamation (USBR) on Battle Creek in 1942 to mitigate damages to salmon spawning areas in the Sacramento River system caused by the construction of Shasta and Keswick Dams. Federal custody and operation were transferred to the U.S. Fish and Wildlife Service (USFWS) in 1948. Title 34 of Public Law 102–575 (Central Valley Project Improvement Act) specifies that USBR provide funding for completion of the rehabilitation of the Coleman National Fish Hatchery: 50 percent will be reimbursable from water and power users and 50 percent non-reimbursable.

Facilities remaining to be completed are additional water treatment facilities, estimated at $6,763,000; and replacement of facilities for administration, the fish health laboratory and public contact area, estimated to cost $2,100,000.

In addition to USFWS's allocated operational costs at Coleman National Fish Hatchery, the California Water Commission supports the $5,773,000 contained in the President's fiscal year 1998 Budget for completion of the water treatment facilities.

CWC 612B—Buckhorn Fish Hatchery.—The Winter-run Chinook salmon (WCS), a Federal and State protected endangered species, are currently being propagated at Coleman National Fish Hatchery, which is located on Battle Creek. The purpose of rearing WCS is to supplement the depleted wild population in the upper Sacramento River and not establish a salmon-run to the hatchery. Despite release strategies designed to promote homing to the mainstem Sacramento River, the Hatchery origin WCS have apparently imprinted on Battle Creek and are returning to Coleman NFH. USFWS recognized the imprinting problem.

The relocation of the primary rearing site of the WCS from Coleman NFH on Battle Creek to Buckhorn hatchery on the upper Sacramento River near Anderson will be a significant benefit to the recovery of this species. By rearing the winter-run Chinook salmon at the Buckhorn facility, imprinting to the upper Sacramento River Basin will be insured. Therefore, when they return as adults, they will be returning to an area where the wild population is currently spawning.

The California Water Commission supports an fiscal year 1998 Federal appropriation of $450,000 for the rehabilitation of the Buckhorn Fish Hatchery in the recovery efforts of the winter-run Chinook salmon.

CWC 621—Winter-Run Chinook Salmon Captive Broodstock Program.—Rearing facilities at Bodega Marine Laboratory and Steinhart Aquarium were designed and constructed around the 1991 year class of juveniles, which was delivered in September 1992. Presently, the combined rearing facilities of both institutions are holding four year classes. Offspring from the spawning of wild-caught broodstock at USFWS's Coleman National Fish Hatchery can now be smolted and delivered to the broodstock rearing facilities with minimal mortality. The program has demonstrated the feasibility of rearing juvenile chinook salmon to maturity and obtaining gametes for artificial propagation. With further improvements in broodstock nutrition and fish health, it is expected that this program can produce gametes of known genetic background to supplement U.S. Fish and Wildlife Service's artificial propagation effort as needed to protect the race.

The captive broodstock program has required and has provided substantial scientific and technical advances in the husbandry, pathology, and genetics of chinook salmon.

The program has promoted the genetic conservation of winter-run chinook salmon. Analyses of the effective size of the winter-run stock showed that a properly managed artificial propagation program to which the captive broodstock program contributes gametes is not likely to have a negative effect and may, instead, be helping to maintain or possibly increase slightly the genetic diversity of the stock.

The captive broodstock program was initiated as a rapid response to the endangerment of the Sacramento River winter-run chinook salmon. To date, the program has realized many of its objectives. Gametes from captively reared broodstock have contributed to artificial propagation of the winter-run population; however, gamete quality must be improved to ensure successful production of offspring.

The California Water Commission supports an fiscal year 1998 appropriation of $750,000 from three sources (USBR—$241,000; CVPIA Restoration Fund—$259,000; and NOAA—$250,000).

CWC 646—Rock Slough Fish Screen.—The California Water Commission supports an appropriation of $2.5 million for construction of the Contra Costa Canal Rock Slough Fish Screen. The proposed Rock Slough fish screen is a requirement of Section 3406(b) of Public Law 102–575, the Central Valley Project Improvement Act (CVPIA). The project will screen the diversion for the Contra Costa Canal, the principal intake facility for the Contra Costa Water District.

Congressman George Miller has expressed his support for this funding in a letter to Secretary of Interior Bruce Babbitt dated December 19, 1996. As Congressman Miller explains, the Bureau of Reclamation has determined that the project requires $2.5 million in fiscal year 1998. This level of funding will permit the completion of design and will allow construction to begin on this important project, which has already fallen behind schedule and could cause CCWD to run afoul of compliance deadlines for the Endangered Species Act. This would jeopardize the ability of CCWD to deliver its contractual water supply to over 400,000 people in central and east Contra Costa County.

Congress appropriated funds in fiscal year 1996 ($80,000) and fiscal year 1997 ($500,000) for this project, meeting the initial commitment of both the Administration and Congress to this project. Full funding in fiscal year 1998 is essential to keep this project moving forward. In November, California voters approved Proposition 204, which provides funds for the required 25 percent state of California match for the federal funding for Rock Slough screening.

CWC 688—Anadromous Fish Screening Program.—Section 3406(b)(21) of the Central Valley Project Improvement Act (CVPIA) directs the Secretary of the Interior to assist the State of California in developing and implementing measures to avoid losses of juvenile anadromous fish resulting from unscreened or inadequately screened diversions on the Sacramento and San Joaquin Rivers, their tributaries, the Sacramento-San Joaquin Delta, and the Suisun Marsh. Measures may include, but are not limited to, construction of screens on unscreened diversions, rehabilitation of existing screens, replacement of existing non-functioning screens, and relocation of diversions to less fishery-sensitive areas. The Secretary is authorized to cost-share up to 50 percent with the State on measures under this program. The State's share in screening diversions may include contributions from local agencies and other non-Federal entities.

A recent National Marine Fishery Service proposed Endangered Species Act rulemaking on screening Sacramento River diversions to protect endangered winter-run salmon has highlighted the need to accelerate implementation of screening efforts. Both DWR and USBR have been participating in test programs to evaluate the effectiveness of different screen designs, including acoustical technologies. DFG has developed a set of policies and criteria for fish screen installation, and is preparing an inventory of diversions and a priority listing of sites to be remediated. There are over 1800 unscreened diversions in the Delta alone.

This program is eligible for State cost-sharing funding from Proposition 204. The CALFED Bay-Delta Program has identified a number of screening projects which could be implemented under this program

CWC 635—Auburn-Folsom South Unit.—The Commission heard testimony from the Placer County Water Agency (PCWA) on March 7, 1997 and supported that Agency's need to have a reliable year-round access to their American River water entitlements by pumping from the North Fork American River at Auburn. The proposal has the potential to save the Federal Government money and not be detrimental for future support of a multi-purpose Auburn Dam project.

PCWA completed construction of a pump station in the 1960s to deliver water to its 3-mile long tunnel to supply water from the North Fork American River to customers in Placer County for municipal, industrial and agricultural needs.

Conditions have changed relevant to the Auburn Dam and for the last several years, USBR has been installing, removing and reinstalling a temporary replacement pump station at a minimum cost of $250,000 per year. This year, there was a flood of record in the American River, resulting in tremendous movement of the riverbed and nearly total destruction of temporary pump station components and access road. Reinstallation of just the temporary pump for 1997 will cost the Federal Government approximately $1 million.

The California Water Commission supports an fiscal year 1998 appropriation of 11,538,000 for this project.

CWC 660A—Arroyo Pasajero.—In the 1960's, in cooperation with the California Department of Water Resources (DWR), the U.S. Bureau of Reclamation (USBR) designed and constructed a 100-mile long reach of the California Aqueduct called the San Luis Canal to convey municipal and agricultural water to California water users. The San Luis Canal is part of the joint-use facilities" along the west side of the San Joaquin Valley, which are operated by DWR. Design, construction, operation and maintenance costs for this project are shared (DWR 55 percent and USBR 45 percent).

The Canal crosses an alluvial fan deposited from a natural drainage channel called Arroyo Pasajero. By original design, these flows were to be temporarily stored in a ponding basin upstream on the western side of the Canal and periodically discharged into the Canal through twelve inlet gates. Operational experience shows that floodflow volume and sediment load are much greater and more threatening to the Canal than designers had originally anticipated.

At present, DWR and the Corps are about one year away from completion of the Feasibility Study which will identify a long-term flood protection plan for the Arroyo. The Corps, DWR and USBR are all participating in the cost of the study. If a Federal interest is identified by the feasibility study, the Corps will participate in the selected solution to Arroyo Pasajero flooding problems.

The California Water Commission strongly supports an appropriation of $390,000 for the U.S. Bureau of Reclamation and supports the funding level in the President Budget for the U.S. Army Corps of Engineers to continue the study

CWC 701—Central Valley Project Operations and Maintenance (includes CVPIA).—The Nation's public works infrastructure is aging. We must ensure that adequate levels of funding are provided to protect the public's investment in facilities which we rely upon daily to provide water supply, flood protection, public safety, and other benefits. California's population of 32 million people depends upon a network of local, state, and federal infrastructure developed over the past decades. Today, governments at all levels are finding it increasingly difficult to find funds to properly maintain existing facilities. The competition for funding raises important public policy questions about the relationship of funding for new projects and programs as opposed to funding to maintain and rehabilitate existing infrastructure.

Too often, the temporary solution used by all levels of government to meet budgetary constraints is to defer maintenance funding. However, deferred maintenance does not come without a price.

Given the increasing competition for federal dollars, we must be prepared to make the difficult choice of deferring studies and new projects until we are assured that existing federal facilities are receiving appropriate levels of safety review and maintenance.

Agreements are being negotiated with non-Federal agencies that may reduce USBR's budget; however, until those agreements are in place, USBR needs an additional $3 million above the $70,611,000 in the President's fiscal year 1998 Budget to be adequately funded to meet its Operations and Maintenance responsibilities.

The California Water Commission strongly supports an fiscal year 1998 appropriation of $73,611,000 for the U.S. Bureau of Reclamation to meet the projected Operations and Maintenance costs.

CWC 900—Recycled Water Projects.—The California Water Commission has long recognized water recycling as an important element in the management of California's water resources, both for cleanup of municipal, industrial and agricultural discharges and to improve the quantity and quality of water supplies. Following extensive hearings throughout the State, the Commission endorsed Department of Water Resources Bulletin 160–93, California Water Plan Update, October 1994, which includes a provision that nearly one million acre-feet of recycled water be added to California's annual water supply by the year 2020.

It is the Commission's view that both water recycling programs and the other ongoing USBR programs are highly important and that they should be supported in

concert, within the limitations of available federal funds, giving due consideration to other potential sources of funds that could be available to effect their implementation

CWC 1108—Salton Sea Study.—The Salton Sea is the largest lake in California and is a regionally important feature from both environmental and economic standpoints. It is located in the southeastern corner of the State within the geologic feature known as the Salton Basin, a natural basin located approximately 278 feet below mean Sea level (−278 feet msl). The Salton Sea receives drainage from approximately 8,000 square miles of Riverside, Imperial and San Diego Counties and the Republic of Mexico. It is a closed basin thus water only leaves the Sea via evaporation. Inflow to the Sea consists of agricultural drainage, storm water and wastewater, and is generally in hydrologic balance with evaporative losses. The closed nature of the system has resulted in changes in the salinity and water surface elevation of the Sea over time.

In 1993, the Counties of Riverside and Imperial, Imperial Irrigation District (IID), and Coachella Valley Water District (CVWD) entered into a Joint Powers Agreement, creating a public agency known as the Salton Sea Authority. The Authority directs and coordinates actions relating to improvement of water quality, stabilization of water elevation, enhancement of recreational and economic development potential of the Sea, and other beneficial uses, in addition to recognizing the importance of the Salton Sea to the agricultural economy in the two counties.

USBR will be finishing the Appraisal Report in 1997. The needed funding for fiscal year 1998 is to begin the Feasibility Report EIR/EIS. The project will be cost-shared using Proposition 204 and local funds.

The Commission supports the $400,000 in the President's fiscal year 1998 Budget for this study.

Final Recommendations for Fiscal Year 1998 Federal Appropriations
for California Water, Fishery and Flood Control Projects
As adopted by the California Water Commission on March 7, 1997

CWC No.	Project		Estimated Project Costs	Actual Costs Through 9/30/96	Alloction for FY 97	FY 97 CWC Final Recommendation	FY 98 CWC Preliminary Recommendation	FY 98 President's Budget	FY 98 CWC Final Recommendation
U.S. ARMY CORPS OF ENGINEERS									
100	CALFED/Bay Delta Oversight (Also see CWC 500)	Corps							400,000
General Investigations - Surveys									
102	Northern California Streams, Sacramento River Riparian Revegetation (Solano, Yolo)	Corps NonFed Total	1,520,000 900,000 2,420,000	610,000	110,000	300,000	Support	300,000	300,000
106	Northern California Streams Dry Creek (Middletown)	Corps NonFed Total	1,100,000 1,000,000 2,100,000	0	89,000	--	Support	200,000	200,000
107	Northern California Streams, Yuba River Basin (Also see CWC 207)	Corps NonFed Total	2,070,000 1,550,000 3,620,000	1,570,000	175,000	120,000	Support	325,000	325,000
108	Northern California Streams Middle Creek	Corps Non Fed Total	1,500,000 900,000 2,400,000	197,000	412,000	410,000	Support	350,000	350,000
109	Northern California Streams Colusa Basin Drain	Corps NonFed Total	1,100,000 1,000,000 2,100,000	0	100,000	200,000	Support	100,000	Support
112	Northern California Streams Sacramento River Watershed Management Study	Corps NonFed Total	4,000,000 4,000,000 8,000,000	0	89,000	400,000	Support	400,000	1,100,000
121	Sacramento-San Joaquin Delta Investigation	Corps NonFed Total	5,940,000 2,975,000 8,915,000	3,990,000	347,000	600,000	Support	750,000	750,000
122	Northern California Streams Vacaville, Dixon and Vicinity	Corps NonFed Total	1,100,000 1,000,000 2,100,000	0	89,000	--	Support	200,000	200,000
123	Northern California Streams Fairfield Streams and Cordelia Marsh	Corps NonFed Total	1,600,000 1,500,000 3,100,000	0	89,000	--	Support	250,000	250,000
124	Sacramento-San Joaquin Delta Western Delta Islands (Contra Costa, Sacramento)	Corps NonFed Total	1,898,000 1,200,000 3,098,000	698,000	20,000	400,000	Support	300,000	300,000
128	San Joaquin River Basin San Joaquin River Watershed Management Study	Corps NonFed Total	4,500,000 4,500,000 9,000,000	0	0	100,000	Support	--	1,200,000
130	Friant Dam Enlargement			--	--	Defer	Defer	--	Defer
132	San Joaquin River Basin, South Sacramento County Streams (See also CWC 232)	Corps NonFed Total	2,070,000 1,400,000 3,470,000	1,339,000	551,000	550,000	Support	180,000	180,000
134	San Joaquin River Basin Stockton Metropolitan Area	Corps NonFed Total	2,000,000 1,200,000 3,200,000	296,000	520,000	540,000	Support	450,000	450,000
135	San Joaquin River Basin, Arroyo Pasajero (Fresno) Flood and Deposition Study (Also CWC 235 & 660A)	Corps NonFed Total	3,665,000 2,800,000 6,465,000	2,627,000	892,000	1,000,000	Support	146,000	146,000
136	San Joaquin River Basin, Pine Flat Dam, Fish and Wildlife Habitat Restoration (Fresno)	Corps NonFed Total	1,915,000 1,390,000 3,305,000	815,000	386,000	500,000	Support	400,000	400,000
139	San Joaquin River Basin, Tule River	Corps NonFed Total	1,378,000 1,028,000 2,406,000	843,000	50,000	200,000	Support	250,000	250,000
140	San Joaquin River Basin West Stanislaus County	Corps NonFed Total	1,100,000 1,000,000 2,100,000	0	89,000	--	Support	150,000	150,000
141	Napa River, Salt Marsh Restoration	Corps NonFed Total	1,125,000 675,000 1,800,000	73,000	377,000	377,000	Support	500,000	500,000
142	Russian River Ecosystem Restoration	Corps NonFed Total	1,125,000 675,000 1,800,000	84,000	366,000	386,000	Support	240,000	240,000
150	Bolinas Lagoon (Marin County)	Corps NonFed Total	1,100,000 1,000,000 2,100,000	0	100,000	--	Support	240,000	240,000
153	Upper Penitentia Creek (Santa Clara)	Corps NonFed Total	1,815,000 1,500,000 3,315,000	315,000	241,000	450,000	Support	475,000	475,000
171	Santa Barbara County Streams Lower Mission Creek	Corps NonFed Total	2,849,000 750,000 3,599,000	2,099,000	250,000	350,000	Support	380,000	380,000

CWC No.	Project		Estimated Project Costs	Actual Costs Through 9/30/96	Alloction for FY 97	FY 97 CWC Final Recommendation	FY 98 CWC Preliminary Recommendation	FY 98 President's Budget	FY 98 CWC Final Recommendation
182A	Los Angeles County Drainage Water Conservation and Supply (Hansen and Lopez Dams)	Corps	1,270,000	696,000	370,000	370,000	Support	204,000	204,000
		NonFed	1,120,000						
		Total	2,390,000						
182B	Los Angeles County Drainage Water Conservation and Supply (Santa Fe & Whittier Narrows Dams)	Corps	1,360,000	741,000	430,000	430,000	Support	189,000	189,000
		NonFed	1,210,000						
		Total	2,570,000						
184	Prado Basin Water Supply	Corps	790,000	100,000	312,000	--	Support	378,000	378,000
		NonFed	700,000						
		Total	1,490,000						
185	San Antonio Creek (San Bernardino)	Corps	865,000	490,000	197,000	128,000	Support	178,000	178,000
		NonFed	375,000						
		Total	1,240,000						
187	Mystic Lake Watershed Management Investigation	Corps	550,000	0	0	--	Support	0	100,000
		NonFed	550,000						
		Total	1,100,000						
188	Whitewater River Basin (Riverside)	Corps	2,080,000	1,038,000	430,000	430,000	Support	370,000	370,000
		NonFed	1,655,000						
		Total	3,735,000						
189	San Juan and Aliso Creeks (Orange)	Corps	1,250,000	270,000	326,000	365,000	Support	315,000	315,000
		NonFed	750,000						
		Total	2,000,000						
190	Imperial County Watershed	Corps	1,250,000	275,000	347,000	389,000	Support	200,000	200,000
		NonFed	750,000						
		Total	2,000,000						
191	Santa Margarita River - Feasibility Study-Watershed Mgmt (Riverside)	Corps	1,600,000	0	100,000	200,000	Support	300,000	300,000
		NonFed	1,500,000						
		Total	3,100,000						
192	Murrieta Creek, Santa Margarita Watershed Feasibility Study (Riverside)	Corps	New					--	300,000
		NonFed							
		Total							
193	Murrieta Creek, [22] (Riverside)		New		0	50,000	Defer	0	50,000
194	San Jacinto River Recon Study (Riverside)							--	100,000
195	Mojave River Forks Dam (San Bernardino)	Corps	1,300,000	0	100,000	--	Support	200,000	200,000
		NonFed	1,200,000						
		Total	2,500,000						
197	Tahoe Basin	Corps	1,600,000	0	100,000	--	Support	320,000	320,000
		NonFed	1,500,000						
		Total	3,100,000						
198A	Lower Truckee River (Washoe County, Nevada)	Corps	505,000	255,000	73,000	250,000	Support	177,000	177,000
		NonFed	250,000						
		Total	755,000						
198B	Lower Truckee River (Pyramid Lake Paiute Tribe)	Corps	1,228,000	801,000	73,000	250,000	Support	354,000	354,000
		NonFed	440,000						
		Total	1,668,000						
Preconstruction Engineering and Design									
201	American River Watershed	Corps	15,510,000	14,609,000	500,000	3,500,000	Support	401,000	401,000
		NonFed	0						
		Total	15,510,000						
204	Northern California Streams, Winters and Vicinity (Yolo) (Also CWC 404)	Corps	150,000	0	150,000	150,000	Support	0	0
		NonFed	50,000						
		Total	200,000						
207	Yuba River Basin (Also see CWC 107)	Corps	1,875,000	0	0			50,000	50,000
		NonFed	625,000						
		Total	2,500,000						
232	South Sacramento County Streams (Also see CWC 132)	Corps	1,275,000	0	0			500,000	500,000
		NonFed	425,000						
		Total	1,700,000						
235	Arroyo Pasajero (Also CWC 135 &660A)	Corps	4,500,000	0	0			1,000,000	1,000,000
		NonFed	1,500,000						
		Total	6,000,000						
238A	Kaweah River (Tulare)	Corps	2,400,000	8,000	892,000	1,300,000	Support	1,100,000	1,100,000
		NonFed	0						
		Total	2,400,000						
238B	Terminus Dam, Kaweah River-Seismic (Tulare) - O&M funds				877,000	1,000,000	Support	684,000	684,000
252	Napa River Flood Control Project	Corps	15,000,000	12,130,000	850,000	700,000	Support	1,600,000	1,600,000
		NonFed	0						
		Total	15,000,000						
254	Pajaro River, Watsonville (Santa Cruz)	Corps	2,270,000	969,000	801,000	810,000	Support	500,000	500,000
		NonFed	0						
		Total	2,270,000						
284	Seven Oaks and Prado Dams Water Conservation (San Bernardino, Riverside, Orange)[Local to do PED]	Corps	750,000	0	0	250,000	Support	0	0
		NonFed	250,000						
		Total	1,000,000						
285	Upper Guadalupe	Corps	1,500,000	0	0			750,000	750,000
		NonFed	500,000						
		Total	2,000,000						
298A	Lower Truckee River (Washoe County, Nevada)	Corps	600,000	0	0	250,000	Support	150,000	150,000
		NonFed	200,000						
		Total	800,000						

WC No.	Project	Estimated Project Costs		Actual Costs Through 9/30/96	Alloction for FY 97	FY 97 CWC Final Recommendation	FY 98 CWC Preliminary Recommendation	FY 98 President's Budget	FY 98 CWC Final Recommendation
298B	Lower Truckee River (Pyramid Lake Paiute Tribe)	Corps	750,000	0	0	250,000	Support	300,000	0
		NonFed	250,000						
		Total	1,000,000						
Construction - General									
302	Sacramento River Restoration at Glenn-Colusa Irrigation District (Glenn) (Also see CWC 622)	Corps	10,650,000	2,893,000	800,000	2,000,000	Support	600,000	600,000
		NonFed	3,550,000						
		Total	14,200,000						
303	Sacramento River Bank Protection	Corps	179,100,000	93,023,000	6,570,000	9,800,000	Support	5,500,000	5,500,000
		NonFed	69,400,000						
		Total	248,500,000						
304	Sacramento River Flood Control Project (USACE authority for Sac. River Flood Control Evaluation)	Corps	76,415,000	76,322,000	0	0	Support	0	0
		NonFed	95,628,000						
		Total	172,043,000						
304A	Mid-Valley Area Levee Reconstruction	Corps	15,300,000	3,276,000	919,000	2,500,000	Support	3,100,000	5,600,000
		NonFed	5,000,000						
		Total	20,300,000						
304B	Marysville/Yuba City Levee Reconstruction	Corps	23,600,000	6,861,000	3,624,000	4,200,000	Support	7,300,000	9,300,000
		NonFed	7,900,000						
		Total	31,500,000						
304C	Upper Sacramento Area Levee Reconstruction	Corps	4,660,000	1,287,000	300,000	500,000	Support	200,000	2,700,000
		NonFed	1,540,000						
		Total	6,200,000						
304D	Lower Sacramento Area Levee Reconstruction	Corps	3,560,000	807,000	473,000	500,000	Support	300,000	2,000,000
		NonFed	1,170,000						
		Total	4,730,000						
305	American River - (Levee Improvements on American and Sacramento Rivers)	Corps	47,500,000	356,000	2,400,000	2,400,000	Support	44,744,000	44,744,000
		NonFed	15,800,000						
		Total	63,300,000						
309	West Sacramento Project	Corps	16,200,000	2,846,000	1,500,000	5,900,000	Support	7,500,000	7,500,000
		NonFed	5,300,000						
		Total	21,500,000						
331	New Melones Lake (Calaveras, Tuolumne)	Corps	400,500,000	0	0	1,000,000	Support	0	100,000
		NonFed	0						
		Total	400,500,000						
332	Merced County Streams	Corps	91,800,000	15,890,000	600,000	800,000	Support	1,100,000	1,100,000
		NonFed	40,900,000						
		Total	132,700,000						
351	Corte Madera Creek	Corps	21,900,000	11,169,000	189,000	--	Support	500,000	500,000
		NonFed	15,200,000						
		Total	37,100,000						
352	Wildcat and San Pablo Creeks (Contra Costa)	Corps	20,200,000	18,997,000	0	0	Support	0	1,353,000
		NonFed	15,000,000						
		Total	35,200,000						
353	Guadalupe River (Santa Clara)	Corps	69,200,000	37,678,000	7,097,000	12,500,000	Support	19,000,000	19,000,000
		NonFed	80,700,000						
		Total	149,900,000						
354	Coyote and Berryessa Creeks (Santa Clara)	Corps	43,900,000	30,787,000	1,400,000	2,400,000	Support	1,000,000	1,000,000
		NonFed	35,050,000						
		Total	78,950,000						
355	San Lorenzo River (Santa Cruz)	Corps	12,640,000	1,371,000	200,000	200,000	Support	4,200,000	4,200,000
		NonFed	4,160,000						
		Total	16,800,000						
361	Santa Paula Creek (Ventura)	Corps	20,300,000	9,706,000	3,974,000	4,200,000	Support	4,000,000	4,000,000
		NonFed	1,600,000						
		Total	21,900,000						
381	Los Angeles County Drainage Area Project	Corps	180,000,000	15,191,000	14,447,000	45,000,000	Support	11,700,000	40,000,000
		NonFed	60,000,000						
		Total	240,000,000						
382	Santa Ana River Mainstem	Corps	778,000,000	458,186,000	55,276,000	60,000,000	Support	52,900,000	52,900,000
		NonFed	555,000,000						
		Total	1,333,000,000						
383	San Luis Rey River (San Diego)	Corps	61,100,000	55,700,000	0	6,400,000	Support	5,400,000	5,400,000
		NonFed	20500,000						
		Total	81,600,000						
387	Norco Bluffs Bank Stabilization Santa Ana River(Riverside)	Corps	5,400,000			180,000	Support	0	1,500,000
		NonFed	1,800,000						
		Total	7,200,000						
400	**Water Resources Development Act, 1996, Section 205, Flood Damage Prevention, Continuing Authorities Program**								
401	Tehama-Hamilton City Flood Control Study (Tehama, Glenn) [205]	Corps	2,276,000	175,000	125,000	125,000	Support	Nationwide Allocation to Program	Support
		NonFed	1,120,800						
		Total	3,396,800						
403	Northern California Streams Magpie Creek (Sacramento) [205]	Corps	4,593,000	646,000	540,000	300,000	Support	"	Support
		NonFed	5,208,000						
		Total	9,801,000						
404	Northern California Streams, Winters and Vicinity (Yolo) (Also CWC 204) [205]	Corps	1,530,000	0	0	0		"	Support
		NonFed	1,970,000						
		Total	3,500,000						

CWC No.	Project		Estimated Project Costs	Actual Costs Through 9/30/96	Alloction for FY 97	FY 97 CWC Final Recommendation	FY 98 CWC Preliminary Recommendation	FY 98 President's Budget	FY 98 CWC Final Recommendation
405	San Pedro Creek, Pacifica [205]	Corps	4,558,000	539,000	0	--	Defer	"	Support
408	Mission Zanja Creek (San Bernardino) [205]	Corps NonFed Total	1,370,000 870,000 2,240,000	1,579,000	220,000	200,000	Support	"	Support
409	Lake Elsinore Outlet Channel [205]								
410	**Water Resources Development Act, 1996, Section 206, Aquatic Ecosystem Restoration**								
411	Clear Lake Ecosystem Restoration [206] (Lake) (Also see CWC 421)								1,000,000
412	Northern California Streams Fairfield Streams and Cordelia Marsh [206]								500,000
415	Penn Mine Remediation [206] (Calaveras)	Corps NonFed Total	5,000,000 10,000,000						5,000,000
420	**Water Resources Development Act, 1996, Section 503, Watershed Mgt, Restoration & Development**								
421	Clear Lake Watershed Management [503] (Lake) (Also see CWC 411)								1,000,000
422	City of Sacramento, Watershed Management and combined Sewer System Restoration [503]								3,000,000
423	San Pablo Bay Watershed Restoration and Protection (Sonoma) [503]								300,000
430	**Water Resources Development Act, 1986, Section 1135, Project Modifications for Improvement of the Environment Program**								
431	Upper Sacramento River Murphy Slough [1135]	Corps NonFed Total	2,776,500 925,500 3,702,000	460,000	0	1,500,000	Support	Nationwide Allocation to Program	Support
432	Yolo Basin Wetlands (Davis site) [1135]	Corps NonFed Total	4,500,000 1,500,000 6,000,000	970,000	3,050,000	50,000	Support	"	Support
433	San Joaquin River China Island Habitat Restoration [1135]	Corps NonFed Total	4,500,000 1,500,000 6,000,000		0	500,000	Support	"	Support
434	Sacramento-San Joaquin Delta Prospect Island (Solano) [1135]	Corps NonFed Total	3,750,000 1,250,000 5,000,000	53,100	452,900	200,000	Support	"	Support
435	Putah Creek, South Fork Preserve [1135]	Corps NonFed Total	1,575,000 525,000 2,100,000	210,000	0			"	Support
436	Pine-Flat Turbine Bypass [1135]	Corps NonFed Total	3,585,000 1,195,000 4,780,000	270,000	0			"	Support
438	Dominguez Gap [1135]	Corps NonFed Total	1,657,500 552,500 2,210,000	100,000	210,000			"	Support
439	Gunnerson Pond (Riverside) [1135]	Corps NonFed Total	3,291,000 1,097,000 4,388,000	0	336,000	490,000	Support	"	Support
480	**Public Law 101-640/104-303, Infrastructure Seismic Reliability**								
481	Santa Monica Infrastructure Reliability	Corps			100,000	Support	Support	0	Support issue but explore means of establishing standards
482	Cities of Arcadia and Sierra Madre	Corps	522,000	222,000	300,000	Support	Support	0	"
483	Southern California Infrastructure Restoration Study (Huntington Beach)				100,000	Support	Support	0	"
484	Southeast Los Angeles County Water Conservation and Supply Project (Norwalk)								"
485	City of Inglewood								
486	Twenty-nine Palms Water District								"
487	City of Lakewood Water Infrastructure								"
488	City of Long Beach								"
U.S. BUREAU OF RECLAMATION									
500	CALFED Bay-Delta Program HR4126 (Also see CWC 100)	CALFED	430,000,000					143,300,000	143,300,000
General Investigations (Mid-Pacific Region)									
551	New Melones Water Mgmt Study	USBR	100,000	0	100,000	Support	Support		0
552	San Joaquin River Basin Comprehensive Plan	USBR			0	Defer	Defer	0	Defer
555	General Planning Studies	USBR	Continuing	431,289	375,704	350,000	Support	300,000	300,000
556	Technical Assistance to States	USBR	Continuing	1,765,217	159,999	125,000	Support	100,000	100,000

CWC No.	Project		Estimated Project Costs	Actual Costs Through 9/30/96	Allocation for FY 97	FY 97 CWC Final Recommendation	FY 98 CWC Preliminary Recommendation	FY 98 President's Budget	FY 98 CWC Final Recommendation
557	California Water Augmentation Prog	USBR	600,000	0	0	--	Support	200,000	200,000
		NonFed	600,000					300,000	300,000
		Total	1,200,000					500,000	500,000
560	Delta Model Development Group	USBR	400,000	0	0	90,000	Support	50,000	50,000
		Other Fed	1,000,000	0	200,000			200,000	200,000
		NonFed	3,210,000	0	410,000			[700,000]	
		Total	4,610,000	0	610,000				
570	Friant Upper Basin Optimization Study	USBR	75,000		75,000	75,000	Support	0	0
590	New Melones Temperature Cntrl Eval.	USBR	90,000		0	90,000	Support	0	0
Construction Projects (Mid-Pacific Region)									
600	**Trinity River Restoration Program**	USBR	79,301,186	65,632,480	4,879,000	5,000,000	Support	3,000,000	3,000,000
	Shasta Division								
611	Temperature Control Device -	USBR	49,179,521	46,529,520	1		Support	2,650,000	2,650,000
	Shasta Dam	Restoration	34,946,210	28,476,211	6,469,999	3,470,000			
		NonFed	0	0	0				
612A	Coleman National Fish	USBR	6,500,000	0	0	0	Support	2,000,000	2,000,000
	Hatchery Modification	Restoration	21,886,248	3,611,248	2,502,000	2,000,000		3,773,000	3,773,000
		Total	28,386,248	3,611,248	2,502,000			5,773,000	5,773,000
612B	Buckhorn Fish Hatchery	USBR							450,000
613	Anderson-Cottonwood Irrigation	USBR	328,639	78,639	0	0	Support	250,000	250,000
	District Diversion Dam	Restoration	5,100,000	0	100,000	100,000		1,000,000	1,000,000
		Total	6,428,739	78,639	100,000			1,250,000	1,250,000
614	Riparian Habitat/Spawning	USBR	19,950,000	0	0	425,000	Support	0	0
	Gravel	Restoration	5,492,351	0	950,000			1,000,000	1,000,000
		Total	25,442,351		950,000			1,000,000	1,000,000
615	Clear Creek Restoration	USBR	1,500,000	0	500,000	500,000	Support	500,000	500,000
		Restoration	4,760,032	244,032	516,000	500,000		1,000,000	1,000,000
		Total	6,260,032	244,032	1,016,000			1,500,000	1,500,000
	Sacramento River Division								
621	Winter-Run Chinook Salmon	USBR		719,571	500,000	400,000	Support	0	241,000
	Captive Broodstock Program	Restoration							259,000
		USFWS							250,000
		NOAA							250,000
		NonFed							348,000
		Total	12,709,800						1,348,000
622	Hamilton City Pumping Plant	USBR	44,558,146	3,914,980	4,300,000	4,300,000	Support	4,000,000	4,000,000
		Fish Facility (Glenn) (Also see CWC 302)							
623	Colusa Basin Drain	USBR	617,547	317,547	300,000	200,000	Support	--	400,000
624	Red Bluff Diversion Dam	USBR	12,677,096	9,817,096	500,000	500,000	Support	500,000	500,000
	Fish Passage Program	Restoration	718,683	718,683	0			0	
		Total	13,395,779	10,535,779					
626	Red Bluff Diversion Dam	USBR	7,235,530	2,075,530	1,500,000	1,500,000	Support	1,360,000	1,360,000
	Demonstration Research	Restoration	1,134,228	1,134,228				0	
	Facility Evaluation	Non Fed	0	0					
		Total	8,369,758	3,209,758					
	American River Division								
635	Auburn-Folsom South Unit	USBR	2,485,090,272	358,910,411	2,500,000	2,500,000	Support	1,538,000	11,538,000
	(Includes American River Alternative	NonFed	2,202,780	2,202,780					
	Study and On-going Activities)	Total	2,487,293,052	361,113,191					
	Delta Division								
641	Georgiana Slough Fish Barrier	USBR	750,098	750,098	0	Support	Support	0	300,000
		NonFed	0	0	0			0	
642	Suisun Marsh Protection	USBR	62,381,312	29,148,803	1,000,000	1,000,000	Support	500,000	500,000
	($1 million included in FY96	NonFed	0					0	
	O&M budget - CWC 701)	Total	62,381,312						
643	Delta Support Program (IEP)	USBR	50,908,718	24,849,017	3,500,000	3,500,000	Support	3,500,000	4,900,000
644	Bay/Delta Oversight	USBR	14,216,110	3,516,110	4,100,000	4,100,000	Support	3,600,000	3,600,000
	(CalFed)	NonFed						0	
645	South Delta Barriers	USBR	63,453,842	236,011	50,000	Support	Support	200,000	200,000
646	Rock Slough Fish Screen (Contra Costa)	USBR	5,701,696	58,696	500,000	1,500,000	Support	250,000	2,500,000
647	Tracy Fish Facility Improvements	USBR	35,924,136	3,162,118	155,288	0	Support	1,500,000	1,500,000
		Restoration	6,190,000	0	0			640,000	640,000
		Total	42,114,136					2,140,000	2,140,000
	San Joaquin Division								
651	Land Retirement	USBR	44,213,857	1,228,000	2,000,000	2,000,000	Support	1,000,000	1,000,000
		Restoration	13,951,144	2,947,144	2,004,000	2,000,000		3,000,000	3,000,000
		Total	58,165,001	4,175,144	4,004,000	4,000,000		4,000,000	4,000,000
652	San Joaquin Basin Action Plan	USBR	7,900,000	--	1,000,000	1,000,000	Support	2,300,000	2,300,000
	(Kesterson Mitigation)	Restoration	18,570,203	1,702,203	6,098,000	1,000,000		2,570,000	2,570,000
		Total	26,470,203		7,098,000	2,000,000		4,870,000	4,870,000
653	Water Acquisition	USBR	47,821,624		1,737,000	1,737,000	Support	3,655,000	3,655,000
		Restoration	61,820,405	8,701,029	20,322,376	6,275,000		4,847,000	4,847,000
		Total	109,642,029		22,059,376	8,012,000		8,502,000	8,502,000
	San Luis Unit - CVP								
660A	Arroyo Pasajero Studies	USBR	8,829,957	10,221,135	499,890	870,000	Support	190,000	390,000
	(Also CWC 135 and 235 - Corps)	NonFed	7,224,511	275,000	611,111				
		Total	16,054,468	10,496,135	1,111,001				
660B	Arroyo Pasajero (Land Purchases)	USBR	12,495,289	4,257,977	0	0	Defer	0	0
660C	Real-Time Drainage Mgmt Initiative	USBR	8,431,447	5,381,447	800,000	800,000	Support	800,000	800,000

CWC No.	Project		Estimated Project Costs	Actual Costs Through 9/30/96	Alloction for FY 97	FY 97 CWC Final Recommendation	FY 98 CWC Preliminary Recommendation	FY 98 President's Budget	FY 98 CWC Final Recommendation
660D	Load Reduction Project	USBR	5,245,196		1,000,000	1,000,000	Support	650,000	650,000
660E	Controlled River Drainage Monitoring (Grassland Drainage Prog)	USBR	3,065,286	65,286	600,000	600,000	Support	600,000	600,000
	Miscellaneous Project Programs (Mid-Pacific Region)								
671	Anadromous Fish Restoration Program	USBR	6,000,000	0	0	0	Support	0	0
		Restoration	55,338,904	2,563,904	12,525,000	8,000,000		8,250,000	8,250,000
		Total	61,338,904			8,000,000		8,250,000	
672	Central Valley Assessment/ Monitoring Program	USBR	12,700,000	0	0	0	Support	0	0
		Restoration	14,511,412	1,261,412	3,250,000	2,312,000		2,500,000	2,500,000
		Total	27,211,412	1,261,412	3,250,000				
673	Flow Fluctuation	USBR	764,278	252,278	0	0	Support	0	
		Restoration	923,567	123,567	0	300,000		200,000	200,000
		Total	1,687,040	375,845					
674	Other CVP Impacts	Restoration	11,061,650	1,650	7,060,000	--	Support	1,000,000	1,000,000
675	Reservoir Storage	Restoration	550,000	0	300,000	--	Support	50,000	50,000
676	Dedicated Project Yield	Restoration	5,020,272	2,316,272	1,454,000	450,000	Support	250,000	250,000
677	Ecosystem/Water System Models	USBR	8,667,975	1,117,975	914,000	950,000	Support	500,000	500,000
		Restoration	1,172,806	1,081,806	91,000	0		0	0
		NonFed			0	0			
		Total	9,840,781	2,199,781	1,005,000	950,000			
678	Agricultural Waterfowl Incentive Program	USBR	2,000,000	0	0			0	0
		Restoration	6,049,516	35,516	2,014,000	--	Support	1,000,000	1,000,000
		Total	8,049,516						
679	Private Wetlands/Investigation	Restoration	1,414,563	372,563	992,000	500,000	Support	50,000	50,000
680	Kaweah River Delta Corridor Enhancement Project	USBR	1,020,983	1,020,983	0	100,000	Support	0	Support
681	Ongoing Contracts/CWPSC/Melones	USBR	14,332,779	8,912,779	3,000,000	2,500,000	Support	1,170,000	1,170,000
683	Refuge Water Supply	USBR	20,430,250	0	1,189,000	5,000,000	Support	4,553,000	4,553,000
		Restoration	25,970,158	2,411,155	3,128,000	3,000,000		4,000,000	4,000,000
		NonFed	0		0	0		0	0
		Total	46,400,408		4,317,000	8,000,000		8,553,000	8,553,000
684	Refuge Wheeling Costs	USBR	14,869,313	0	0	0	Support	0	0
		Restoration	14,636,458	4,421,458	2,215,000	2,000,000		2,000,000	2,000,000
		NonFed	0	0	0	0		0	
		Total	29,505,771						
685	Coho Salmon Program	USBR	375,281	150,281	225,000	250,000	Support	0	Support
686	Spring Run Salmon Program	USBR	525,097	300,097	225,000	250,000	Support	0	Support
687	Salmon Stamp Program	USBR	465,390	265,398	200,000	500,000	Support	0	Support
688	Anadromous Fish Screening Program	USBR	65,305,611	9,305,611	3,000,000	3,000,000	Support	3,000,000	6,000,000
		Restoration	15,370,719	870,719	5,000,000	2,000,000		2,000,000	2,000,000
		Total	80,676,330	10,176,330	8,000,000	5,000,000		5,000,000	8,000,000
688A	Reclamation District 108 (Traditional Screened Diversion)	USBR		101,037		600,000	Support		Support
		NonFed	5,775,000	30,708		400,000			
688B	Reclamation District 1004 (Traditional Screened Diversion)	USBR							Support
		NonFed	3,550,000						
688C	Princeton-Codora-Glenn ID/ Provident ID	USBR							Support
		Restoration							
		Category III	5,500,000		3,103,907				
		Salmon Stamp			100,000				
		NonFed	561,500		316,881				
Operation and Maintenance (Mid-Pacific Region)									
701	Central Valley Project (includes CVPIA)	USBR	Continuing		67,669,242	72,078,000	Support	70,611,000	73,611,000
703	Reclamation Law Administration	USBR	Continuing		1,149,000	1,149,000	Support	1,340,000	1,340,000
704	Land Resources Management Program	USBR	Continuing		1,217,000	1,217,000	Support	884,000	884,000
705	Cachuma Project	USBR	Continuing		1,168,000	1,153,000	Support	1,046,000	1,046,000
706	Orland Project	USBR	Continuing		570,000	570,000	Support	476,000	476,000
707	Solano Project	USBR	Continuing		1,786,000	1,851,000	Support	1,732,000	1,732,000
Loan Projects (Westwide)									
800	Small Reclamation Projects Admin.	USBR	Continuing		425,000	425,000	Support	95,000	95,000
Loan Projects (Mid-Pacific Region)									
801	Castroville Seawater Intrusion Project (Monterey)	USBR	13,813,000	2,561,935	2,000,000	2,000,000	Support	2,100,000	2,100,000
		Treasury	18,637,000	1,901,000	2,131,000	2,131,000		617,000	
		Federal	32,450,000	4,462,935	4,131,000	4,131,000		2,717,000	
		NonFed	11,049,900	10,491,000	279,450	279,450		279,450	
		Total	43,499,900	14,953,935	4,410,450	4,410,450		5,096,450	
802	Salinas Valley Reclamation Project (Monterey)	USBR	8,973,000	2,350,000	1,500,000	1,500,000	Support	1,300,000	1,300,000
		Treasury	11,446,000	1,450,000	1,561,000	1,561,000		355,000	
		Federal	20,419,000	3,800,000	3,061,000	3,061,000		1,655,000	
		NonFed	6,900,000	6,350,000	550,000	550,000			
		Total	27,319,000	10,150,000	3,611,000	3,611,000			

CWC No.	Project		Estimated Project Costs	Actual Costs Through 9/30/96	Alloction for FY 97	FY 97 CWC Final Recommendation	FY 98 CWC Preliminary Recommendation	FY 98 President's Budget	FY 98 CWC Final Recommendation
900	**PL 102-575, Title XVI and Amended by P.L. 104-266 (Mid-Pacific Region)**								
901A	Del Norte County/ Crescent City Wastewater Study	USBR	550,000	37,451	512,549	--	Support	--	Support
901B	Fort Bragg Reclamation Study	USBR	749,999	86,163	663,836	--	Support	--	Support
902	Sacramento Reclamation Reuse	USBR	150,000		150,000	--	Support	--	Support
903	San Joaquin Area[Tracy] (San Joaquin)				Authorized				Support
904	San Francisco Area Water Reclamation Study (General Investigation)	USBR NonFed Total	3,790,033 3,790,000 7,580,033	1,904,946 2,290,000 4,194,946	1,510,087 1,500,000 3,010,087	1,500,000	Support	375,000 0	375,000
905	Southern Alameda County Water Reuse Project					Support Authorization	Support Authorization	--	Support Authorization
906	San Jose Area Water Reclamation And Reuse Program (Construction)	USBR NonFed Total	120,236,000 360,719,000 480,955,000	3,110,677 38,000,000 41,110,677	2,760,000 86,000,000 89,413,000	6,200,000	Support	3,000,000 5,750,000 8,750,000	10,000,000
907	Watsonville Area				Authorized			0	250,000
908	San Pablo Baylands Water Reuse (Sonoma)								300,000
1000	**PL 102-575, Title XVI and Amended by P.L. 104-266 (Lower Colorado Region)**								
1001	Southern California Comprehensive Water Reclamation and Reuse	USBR NonFed	3,292,000 3,292,000	1,755,170	750,000	750,000	Support	769,000	769,000
1004	Calleguas Municipal Water District Recycling Project	USBR NonFed Total	20,000,000 53,600,000 73,600,000		Authorized				Support
1005	Brackish Water Reclamation Demonstration Facility (Ventura)	USBR NonFed Total	3,700,750 9,811,250 14,512,000	958,453	1,000,000	2,500,000	Support	0	2,000,000
1006	Pasadena Reclaimed Water	USBR NonFed Total	5,750,000 17,250,000 23,000,000		Authorized				Support
1007	L.A. Area Water Reclamation and Reuse (Includes West Basin, East Valley and Terminal Island)	USBR NonFed Total	68,120,000 204,360,000 272,480,000	24,271,675 163,255,092	14,300,000	14,300,000	Support	10,000,000	10,000,000
1008	Long Beach Desalination Research and Development Project	USBR NonFed	15,100,000 15,100,000 30,200,000		Authorized				Support
1009	Hi Desert Water District, Yucca Valley	USBR NonFed Total	2,740,000 8,220,000 10,960,000		Authorized				Support
1010	Orange County Regional Water Reclamation Project - Phase I	USBR NonFed Total	42,600,000 127,800,00 170,400,000	0	Authorized	Support Authorization	Support Authorization	0	Support - Funding subject to agreement w/ USBR
1011	San Juan Basin Groundwater Management Program (Orange)	USBR NonFed Total	3,750,000 11,250,000 15,000,000	0	0	Support	Support	0	Support if qualifies as R&D
1012	San Gabriel Basin Project (Includes San Gabriel Basin, Demo, Rio Hondo & San Gab Valley Wtr Recl.)	USBR NonFed Total	38,090,000 114,270,000 152,360,000	16,370,817 24,078,719	5,800,000	5,800,000	Support	5,235,000	5,235,000
1013	San Diego(North) County Area Recycling Project - Encina Basin, San Elijo, and Olivenhain)	USBR NonFed Total	17,707,000 53,121,000 70,828,000		Authorized				4,900,000
1014	San Diego Area Reclamation (Includes San Diego, Escondido, Poway Padre Dam Muni WD, Otay WD and San Diego County Water Authority)	USBR NFed Total	172,590,000 517,770,000 690,360,000	5,565,698 34,189,810	9,340,000	9,340,000	Support	13,000,000	13,000,000
1015	Mission Basin (Oceanside) Brackish Groundwater Desalting Research and Development Project (San Diego)	USBR NonFed Total	1,500,000 4,500,000 6,000,000	0	Authorized	Support Authorization	Support0 Authorization	1,500,000	1,500,000
1016	Water Replenishment District of Southern California - Alamitos Barrier Recycled Water Project	USBR NonFed Total	5,750,000 19,281,000 25,031,000	0	Authorized	Support Authorization	Support Authorization	0	2,500,000
1017	Imperial Valley Water Reclamation and Reuse Study	USBR NonFed Total	500,000 500,000 1,000,000	317	175,000	175,000	Support	75,000	75,000
General Investigations (Lower Colorado Region)									
1101	Colorado River Water Quality Improvement Feasibility Investigation	USBR	9,465,000	7,673,258	60,000	60,000	Support	60,000	60,000
1102	Environmental and Interagency Coordination Activities	USBR	Continuing	11,384,861	125,000	175,000	Support	175,000	175,000
1103	General Planning	USBR	Continuing	515,215	337,000	375,000	Support	390,000	390,000
1105	Investigation of Existing Projects	USBR	Continuing	352,263	50,000	50,000	Support	55,000	55,000
1107	Minor Work on Completed Projects	USBR	Continuing	389,145	55,000	55,000	Support	55,000	55,000
1108	Salton Sea Area Study	USBR NonFed Total	2,000,000 2,000,000 4,000,000	271,109	200,000	0	Support	400,000	400,000
1109	Technical Assistance to States	USBR	Continuing	1,953,988	311,000	400,000	Support	475,000	475,000
1110	Lower Owens River Environmental Study	USBR NonFed Total	300,000 300,000 600,000	0	100,000	100,000	Support	100,000	100,000
1113	Southern California Coastal Water Supply Study	USBR NonFed Total	750,000 750,000 1,500,000	0	250,000	250,000	Support	350,000	350,000
1115	Mammoth Lakes Water Optimization Study	USBR NonFed Total	350,000 350,000 700,000	0	0	--	--	80,000	80,000

WC No.	Project		Estimated Project Costs	Actual Costs Through 9/30/96	Alloction for FY 97	FY 97 CWC Final Recommendation	FY 98 CWC Preliminary Recommendation	FY 98 President's Budget	FY 98 CWC Final Recommendation
Operations and Maintenance (Lower Colorado Region)									
(CWC supported the recommendation of the Colorado River Board for following O&M project)									
1150	Yuma Area Projects	USBR	Continuing	--	20,380,000	20,380,000	Support	20,038,000	20,038,000
Loan Projects (Lower Colorado Region)									
1201	Eastern Municipal Water District Water Facilities Plan (Riverside)	USBR	13,650,411	12,632,011	1,030,000	1,030,000	Support	0	0
		Treasurey	17,399,589	15,570,411	1,817,578	1,817,578			
		Federal	31,050,000		2,847,578	2,847,578			
		NonFed	13,621,400	10,300,000	3,321,400	3,321,400			
		Total	44,671,400		6,168,978	6,168,978			
1202	Chino Basin Desalination (Santa Ana Watershed Project Authority)	USBR	8,200,000	2,000,000	1,650,000	1,650,000	Support	1,718,000	1,718,000
		Treasury	23,831,000	2,595,000	3,942,000	3,942,000		3,683,000	
		Federal	32,031,000	4,595,000	5,592,000	5,592,000		5,401,000	
		NonFed	15,623,000	4,550,000	2,768,250	2,768,250		4,804,750	
		Total	47,654,000	9,145,000	8,630,250	8,630,250		10,205,750	
1203	San Sevaine Creek Water Project (San Bernardino, Riverside) (Funding to commence in FY98)	USBR		0	0	Support	Support	976,000	976,000
		Treasury						357,000	
		Federal	51,976,594					1,333,000	
		NonFed	30,871,816					20,721,000	
		Total	82,848,410					22,054,000	
1204	Temescal Valley Project (Elsinore Valley MWD) (Riverside)	USBR	5,268,000	1,050,000	1,650,000	1,650,000	Support	651,000	651,000
		Treasurey	16,988,000	967,000	4,050,000	4,050,000		1,383,000	
		Federal	22,256,000		5,700,000	5,700,000		2,034,000	
		NonFed	10,659,000	2,500,000	3,000,000	3,000,000		2,500,000	
		Total	32,915,000		8,700,000	8,700,000		4,534,000	
Colorado River Salinity Control Project (Construction) (CWC supported the recommendations of the Colorado River Board for following CRSC projects)									
1302	**Title I Division**	USBR	458,959,000	401,600,417	2,300,000	2,300,000	Support	3,078,000	3,078,000
	Title II Division								
1304	Title II, New Format	To be determined		497,187	4,645,000	5,000,000	Support	7,600,000	7,600,000
1305	Endangered Species Conservation and Recovery Projects (LC only)	USBR	19,230,000	3,741,115	2,981,000	--	Support	3,660,000	3,660,000
		NonFed	17,651,000						
		Total	36,881,000						

PREPARED STATEMENT OF FRANK DAL GALLO, PRESIDENT, RAYMOND BARSCH, GENERAL MANAGER, THE RECLAMATION BOARD, THE RESOURCES AGENCY, STATE OF CALIFORNIA

THE RECLAMATION BOARD FINAL RECOMMENDATIONS FOR U.S. ARMY CORPS OF ENGINEERS FLOOD CONTROL PROJECTS—FISCAL YEAR 1998 SUMMARY

	President's Fiscal Year 1998 Budget	Board Recommends
General Investigations—Surveys:		
Northern California Streams:		
Tehama-Hamilton City Flood Control [205 Project] [1]	.....	(2)
Yuba River Basin	$325,000	$325,000
Sacramento River Watershed Management Study	400,000	1,100,000
Middle Creek (Lake) [1135 Project] [3]	350,000	350,000
Sacramento River Riparian Revegetation [1135 Project] [3]	300,000	300,000
Sacramento-San Joaquin Delta:		
South Sacramento County Streams	180,000	180,000
Sacramento-San Joaquin Delta Investigation	750,000	750,000
Western Delta Islands (Contra Costa, Sacramento)	300,000	300,000
San Joaquin River Basin:		
Stockton Metropolitan Area	450,000	450,000
San Joaquin River Watershed Management Study	.....	1,200,000
Arroyo Pasajero (Fresno)	1,146,000	1,146,000
Tule River	250,000	250,000
Preconstruction Engineering and Design:		
American River Watershed	401,000	401,000
Kaweah River (Tulare)	1,100,000	1,100,000
Winters and Vicinity (Yolo) [205 Project] [1]	.....	(2)
Construction—General:		
Sacramento River at Glenn-Colusa Irrigation District	600,000	600,000
Sacramento River Bank Protection	5,500,000	5,500,000

THE RECLAMATION BOARD FINAL RECOMMENDATIONS FOR U.S. ARMY CORPS OF ENGINEERS FLOOD CONTROL PROJECTS—FISCAL YEAR 1998 SUMMARY—Continued

	President's Fiscal Year 1998 Budget	Board Recommends
Sacramento River—Levee Reconstruction		
Phase II—Marysville/Yuba City	7,300,000	9,300,000
Phase III—Mid-Valley	3,100,000	5,600,000
Phase IV—Lower Sacramento	300,000	2,000,000
Phase V—Upper Sacramento	200,000	2,700,000
American River (Common Elements)	44,744,000	44,744,000
Upper Sacramento River—Murphy Slough [1135 Project] [3]		([2])
Magpie Creek (Sacramento) [205 Project] [1]		([2])
Yolo Basin Wetlands (Davis Site) [1135 Project] [3]		([2])
China Island Habitat Restoration [1135 Project] [3]		([2])
Merced County Streams	1,100,000	1,100,000
West Sacramento	7,500,000	7,500,000

[1] The Board supports this project to be funded under ''Continuing Authorities'' Program (Section 205).
[2] Support.
[3] To be funded under ''Project Modifications for Improvement of the Environment'' Program (Section 1135).

RECOMMENDATIONS OF THE STATE RECLAMATION BOARD FOR FLOOD CONTROL PROJECTS IN THE CENTRAL VALLEY OF CALIFORNIA (FISCAL YEAR 1998)

The Reclamation Board, as the State agency which furnishes required local assurances for a majority of the federal flood control projects in California's Central Valley, respectfully submits this statement of support for the following projects, which the Board considers to be of particular importance to the health, safety, and well-being of Central Valley residents and important to be started and/or kept on schedule:

General Investigations Surveys

Northern California Streams

This survey, authorized in 1962, is a study of the Sacramento River and its tributaries in regard to flood control measures. The following are interim study proposals for funding in fiscal year 1998.

Tehama-Hamilton City Flood Control (205 Project).—A reconnaissance level study is underway that is investigating flood damage reduction alternatives for two towns located on the west bank of the Sacramento River in Tehama and Glenn Counties. The town of Tehama was flooded in 1986 and the levee protecting Hamilton City was saved by extensive sandbagging and flood fights during the floods of 1995 and 1997. The reconnaissance study will be completed in 1997 and a cost-shared feasibility investigation under Section 205 authority will begin in 1998 pending availability of funds.

The Board recommends funding the feasibility study under Section 205 authority.

Yuba River Basin.—The Yuba River Basin is located about 60 miles north of Sacramento. The 1986 and 1997 floods and resulting levee failures on the Yuba and Feather Rivers made evident that flooding is a public safety issue in the area. Thus, a reconnaissance level study of alternatives for flood control and related purposes in the Yuba River watershed was completed, and a cost-shared feasibility study was initiated.

The Board recommends funding of $325,000 for completion of the feasibility study and initiation of Preconstruction Engineering and Design.

Sacramento River Watershed Management Study.—The levee failures and devastating floods resulting from the January 1997 Central Valley storms indicate that the Sacramento River Flood Control Project needs to be improved. The Sacramento River Watershed Management Study would provide a long range management program for the Sacramento River. The objective of this study is to improve the overall flood protection for areas within the Sacramento River Basin while allowing for restoration and protection of environmental features including wetlands, fish and wildlife habitat restoration and water quality improvements.

The Board strongly recommends funding of $1.1 million for this cost-shared feasibility study.

Middle Creek (Lake County).—The Middle Creek flood control project is located in Lake County near Clear Lake, approximately 80 miles north of San Francisco. The

project consisting of levees, diversion structures and stream channelization was constructed by the Corps between 1958 and 1968. The project along with subsequent land use changes has resulted in the loss or damage of approximately 7,500 acres of emergent wetlands. A reconnaissance study was initiated in 1996 to study alternatives that would restore the natural functions of the Middle Creek/Clear Lake ecosystem. The study is currently in the reconnaissance phase.

The Board recommends funding of $350,000 for continuing the investigation into the feasibility phase. The feasibility study will be cost-shared with a non-Federal sponsor.

Sacramento River Riparian Revegetation.—This cost-shared feasibility study will examine the opportunities available to restore riparian habitat to enhance anadromous fisheries along the Sacramento River from Collinsville in the Delta to Verona located north of the City of Sacramento. The study will also examine restoration opportunities along Steamboat and Sutter Sloughs in the Lower Sacramento region. The study will examine the feasibility of restoration alternatives that do not compromise the structural or hydraulic integrity of the Sacramento River Flood Control Project.

The Board recommends funding of $300,000 for this study.

Sacramento-San Joaquin Delta

South Sacramento County Streams.—These streams are located in the southerly portions of the City and County of Sacramento. The existing flood control projects in south Sacramento do not adequately address the flood issues in this rapidly developing area. Levees along Morrison Creek and tributaries provide less than a 100 year level of flood protection. The investigation also addresses the risk of flooding to the Sacramento Regional Wastewater Treatment Plant. Potential projects include a combination of channel and levee improvements and stormwater detention facilities.

The Board recommends funding of $180,000 to continue this cost-shared feasibility study.

Sacramento-San Joaquin Delta Investigation.—The study area is located in Sacramento, Yolo, San Joaquin, Contra Costa, and Solano Counties and extends from the southern limits of the City of Sacramento to the City of Tracy, and from the City of Stockton west to Suisun Bay. The area consists of about 700,000 acres of land segregated into some 100 tracts and islands, bounded by interconnecting waterways, which are confined by 1,100 miles of levees. A critical need for levee rehabilitation throughout the Delta exists. The most recent levee failures in the study area in February 1986 and January 1997, which caused damages estimated at over $20 million.

The study is developing a region-wide plan for Corps involvement in the Delta that links with the planning efforts of other agencies and includes flood control, environmental restoration, and navigation.

The Board supports funding of $750,000 to continue this cost-shared feasibility study.

Western Delta Islands(Contra Costa and Sacramento Counties).—The study area includes Twichell Island, Jersey Island, and Webb Tract which comprise a total acreage of 12,500 acres located in the Western Delta area of Sacramento. The two islands and Webb Tract are at risk due to levee instability and levee failure could cause saltwater intrusion far into the Delta rendering the water unsuitable for agricultural and domestic uses. Levee failures could adversely affect existing fish and wildlife resources and habitat. The feasibility study will emphasize both flood damage reduction and environmental restoration.

The Board recommends funding of $300,000 to continue the feasibility study.

San Joaquin River Basin

Stockton Metropolitan Area.—Studies by the Federal Emergency Management Agency have determined that a large portion of the City of Stockton has less than 100 year level of flood protection. The study area is located in the City of Stockton and surrounding area within portions of Calaveras, San Joaquin and Stanislaus Counties. The study area extends from the Calaveras River, Mormon Slough, and Bear Creek and tributaries north of Stockton to the Littlejohns Creek and Farmington areas southeast of Stockton. The reconnaissance study will determine if a federal flood control interest exists. The reconnaissance study is scheduled to be completed in 1997.

The Board recommends funding of $450,000 to continue this study to the feasibility level. The feasibility study will be a cost-shared investigation.

San Joaquin River Watershed Management Study.—The devastating flooding and levee failures resulting from the 1997 storms indicate the need for increased flood

protection on the San Joaquin River Flood Control System. The San Joaquin River Watershed Management Study will develop the framework for a comprehensive, multi-objective plan for strengthening the existing flood control system in harmony with managing water and environmental resource activities. The study will identify objectives for managing the flood control project and assist in the coordination of all activities related to flood management, including environmental, recreational, economic, and water resources issues. The Reclamation Board has expressed its support for the study and is willing to participate in the feasibility phase of the study by funding 50 percent of the $9,000,000 study.

The Board recommends funding of $1,200,000 to initiate the study.

Arroyo Pasajero (Fresno County).—A feasibility study is underway for the Arroyo Pasajero watershed near Coalinga, California in Southwest Fresno County. Updated hydrologic and sediment transport studies show that both the estimated sediment loads and storm volumes are several times greater than the original design estimates. There are several public facilities in the floodplain including the California Aqueduct, Lemoore Naval Air Station, Interstate Highway 5, and Highway 198. the lands east of the California Aqueduct are subject to flood damage as well as the Aqueduct.

The Board recommends funding of $1,146,000 to continue the cost-shared feasibility study.

Tule River (Tulare County).—The study area is located within the 12,500 square mile Tulare Lake Basin in the southeastern portion of the San Joaquin Valley north of the City of Bakersfield. In 1966 and 1983, Lake Success located on the Tule River upstream of the City of Porterville filled and excess flows flowed over the Success Dam spillway and caused significant downstream damages. An amended feasibility study which began in 1988 is currently underway which is investigating flood damage reduction alternatives which includes the raising of Success Dam.

The Board recommends funding of $250,000 to continue the cost-shared feasibility study.

Preconstruction Engineering and Design

American River Watershed.—The Board and the Department of Water Resources acted as the nonFederal sponsor of the Feasibility Study and Supplemental Information Report on the American River Watershed which identified the Detention Dam Plan as the NED plan. The Reclamation Board and the SAFCA Board identified the Detention Dam as the locally preferred plan. However, the Final Chief of Engineers' Report recommended deferral of a decision regarding the Detention Dam feature of the NED plan and recommended proceeding with the element common to the final array of candidate plans. The Water Resources Development Act signed in October 1996 authorized $57.7 million for construction of the Common Features. A comprehensive flood control project is still needed to increase flood protection in Sacramento to a level commensurate with the degree and value of commercial, residential, and industrial development in the flood-risk area.

The Board recommends funding of $401,000 to develop a comprehensive flood control plan for the American River Floodplain.

Kaweah River (Tulare County).—The proposed project will provide additional water storage at Lake Kaweah (Terminus Dam) for increased flood protection and water supply, recreation and fish and wildlife enhancement.

The Board recommends funding of $1,100,000 for preconstruction engineering and design.

Winters and Vicinity (Yolo County).—The project area is in southwestern Yolo County approximately 30 miles west of Sacramento. The City of Winters is located along Putah Creek and Dry Creek and is bordered on the north by Moody Slough and Chickahominy Slough. Flooding in 1995 caused over $2 million in damages, the closure of major roads and the flooding of 45 residential properties. A cost-shared feasibility study was completed in 1997 and recommends a flood damage reduction plan that will provide the area with over a 100 year level of flood protection. The project is awaiting Section 205 funding.

The Board supports funding for this Section 205 project.

Construction—General

Sacramento River at Glenn-Colusa Irrigation District.—The project involves restoration of the hydraulic characteristics of the Sacramento River. The Corps is conducting the engineering and design of works to restore the elevation of the Sacramento River in the vicinity of the Glenn-Colusa Irrigation District intake to conditions existing prior to the flood of 1970 to complement fish screen remedial work being developed by the U.S. Bureau of Reclamation under the Central Valley Project Improvement Act.

The Board recommends funding of $600,000 for initiating construction activities.

Sacramento River Bank Protection.—The project, authorized in 1960, is a long range federal-State effort to preserve the existing project levee system of the Sacramento River. These existing levees offer flood protection along 192 miles of the Sacramento River and various tributaries between Collinsville in the Delta and Chico Landing on the Upper Sacramento River. The Sacramento River Bank Protection Project work consists of providing bank stabilization at locations which are identified each year as the most critical in terms of erosion control. Emphasis is currently on erosion control work along the American River and the lower Sacramento River and sloughs.

The Board strongly supports continued funding of $5,500,000 for this project.

Sacramento River-Levee Reconstruction.—Following the record high flows of February 1986, Operations and Maintenance funds were provided under Inspection of Completed Works to perform an evaluation of the integrity of the Sacramento River Flood Control System. A five-phase program which divided the system into five study areas was developed. In each phase the structural stability of the levees is examined and a determination made as to whether the system is functioning as its design level. The Reclamation Board is acting as nonFederal sponsor for the five phases of the Sacramento River System Evaluation. Work on Phase I, Sacramento Urban Area Levee Reconstruction has been completed and performed well during the January 1997 flood. Phase II, Marysville/Yuba City Levee Reconstruction is under construction. The Reclamation Board supports the following fiscal year 1998 funding to accelerate construction.

—Phase II—Marysville/Yuba City—The Board recommends funding of $9,300,000

—Phase III—Mid-Valley—The Board recommends funding of $5,600,000

—Phase IV—Lower Sacramento—The Board recommends funding of $2,000,000

—Phase V—Upper Sacramento—The Board recommends funding of $2,700,000

American River (Common Elements).—The Water Resources Development Act signed in October 1996 authorized $57.7 million for construction of the common features which are elements common to the final array of candidate plans studied in the American River Watershed Project Supplemental Information Report. Construction of the common elements does not preclude construction of any of the comprehensive plans considered. The common features consist of stabilizing 24 miles of existing levees along the lower American River, raising and strengthening about 12 miles of levees on the east side of the Sacramento River, and implementing the telemetered inflow gage system and emergency flood warning system.

The Board recommends funding of $44,744,000 for construction of the common elements.

Upper Sacramento River—Murphy Slough.—The congressional direction for the Upper Sacramento Fish and Wildlife reconnaissance study focused on environmental restoration rather than an integrated flood control plan. While we still believe flood control is an integral part of necessary studies, we support the study results.

It is recommended that a demonstration project for river restoration in accordance with Section 1135 of WRDA 1986 be developed on the upper Sacramento River near Murphy Slough. The proposal entails planting vegetation to restore riparian forest and wetland habitat. The project may result in an improvement in anadromous fisheries.

The Board supports funding for the project.

Magpie Creek (Sacramento County).—Feasibility evaluations of the Magpie Creek area indicate a need for increased flood protection for the study area. Magpie Creek overflows its bank, and periodically floods lands within the City of Sacramento downstream of McClellan AFB. The original Magpie Creek flood control project design described in the April 1996 Detailed Project Report, was based on the assumption that flood control improvements by the Air Force on McClellan AFB would be accomplished. However, Congress has since directed the closure of the AFB resulting in the suspension of on-base flood control project funding.

In December 1996, the Corps completed a supplemental report which defines a Revised Tentatively Selected Plan which accounts for the elimination of the on-base improvements. The Revised Tentatively Selected Plan would not reduce the flood protection provided by the NED plan discussed in the Detailed Project Report. The proposed work includes channel widening and levee improvements to the existing Magpie Creek Diversion Channel to increase the level of flood protection within the City of Sacramento.

The Board supports funding to move the study from the feasibility stage to preconstruction engineering and design and subsequently to construction.

Yolo Basin Wetlands (Davis Site).—The project area is located next to the Yolo Bypass which is an operative feature of the Sacramento River Flood Control Project. the Yolo Bypass extends 43 miles from the Fremont Weir on the Sacramento River,

south to the city of Rio Vista where it rejoins the Sacramento River. The Davis site will comprise 396 acres consisting of 212 acres of permanent wetlands, 64 acres of riparian woodlands, 64 acres of grassland/upland, and 56 acres of seasonal wetland.

The project was initiated in 1991 with funds added by Congress to the fiscal year 1991 Appropriations Act. The current project is proceeding under Section 1135(b) of WRDA 1986.

The Board supports funding for continuing construction of this project.

China Island Habitat Restoration.—As an outgrowth of the reconnaissance report on the San Joaquin River Mainstem study, it is strongly urged that a separate environmental restoration project be developed substantially consistent with the Section 1135 of WRDA 1986. The locally preferred restoration site is known as China Island and would involve restoring historic wetlands and riparian habitat on about 3,300 acres of land southwest of the San Joaquin River above its confluence with the Merced River.

The Board supports funding for this project.

Merced County Streams.—This project, authorized in 1970, will provide flood protection for the City of Merced and adjacent suburban and agricultural lands. The Castle Dam component of the project has been completed. Funds are for preparing engineering and environmental documents leading to construction of additional flood protection facilities and improvements in and near the City of Merced.

The Board supports funding of $1,100,000 for this project.

West Sacramento.—The Board is the non-Federal sponsor for the West Sacramento flood control project which was authorized for construction by WRDA 1992. The project will provide the City of West Sacramento an approximate 400 year level of flood protection.

The Board supports funding of $7,500,000 for this project.

PREPARED STATEMENT OF STEVE HALL, EXECUTIVE DIRECTOR, ASSOCIATION OF CALIFORNIA WATER AGENCIES ON BEHALF OF THE CALIFORNIA BAY-DELTA WATER COALITION

Mr. Chairman and Members of Subcommittee, thank you for providing me an opportunity to submit this statement on the CALFED Bay-Delta Program on behalf of the California Bay-Delta Water Coalition. As authorized in October 1996 (H.R. 4126, the California Bay-Delta Environmental Enhancement and Water Security Act), the Administration has included $143.3 million in the Bureau of Reclamation's fiscal year 1998 budget for the CALFED Bay-Delta Program. The California Bay-Delta Water Coalition strongly supports this budget request.

California's economy is one of the strongest in the world, and that strength is highly dependent on sufficient and reliable supplies of water, which in turn depend on a healthy Bay-Delta ecosystem. Furthermore, the Bay-Delta Estuary is a uniquely valuable resource for a variety of fish species, several of which are on the verge of extinction. It is also an important wintering area for the Pacific Flyway waterfowl, whose seasonal migrations reach from northern Alaska to the tip of South America. Therefore, the environmental health of the Bay-Delta has important implications for other Western States. The Bay-Delta Estuary and its watershed are critical not only to migratory birds, but also to several runs of Pacific Coast Salmon. Two-thirds of the population of California is dependent on Bay-Delta water supplies. If Bay-Delta supplies were reduced to Southern California, it would place additional demands for supplies from the Colorado River, affecting the seven basin states and Mexico.

CALIFORNIA BAY-DELTA WATER COALITION

During the summer of 1996 a diversion coalition of environmental interests, urban water suppliers, agricultural users, community and business leaders worked together in support of the Proposition 204 water bond measure, "The California Safe, Clean, Reliable Water Supply Act of 1996." The Coalition has also worked together in supporting passage of H.R. 4126 the federal matching funds needed to implement the ecosystem restoration portion of the CALFED Bay-Delta Program. Exhibit A is a list of participants in the Coalition.

The Coalition has brought together diverse interests to develop a consensus on solving the Bay-Delta problems and to actively support the state/federal funding priorities for ecosystem restoration.

Our first effort was to support the Congressional authorization of federal matching funds to Proposition 204 (a $1 billion water bond measure). H.R. 4126 (the California Bay-Delta Environmental Enhancement and Water Security Act was authorized within the fiscal year 1997 Omnibus Appropriations Bill (H.R. 3610) and the

Omnibus Parks and Public Lands Management Act (H.R. 4236). The active support of Governor Wilson, as well as, an unprecedented level of bipartisan support led to quick action in the 104th Congress.

H.R. 4126 authorized a 3-year $430 million commitment in matching funds for the environmental restoration of the Bay-Delta Estuary. Federal funding was contingent upon passage of Proposition 204. These federal funds will be used to fund an array of urgently needed ecological improvements, including:

—The protection and enhancement of existing habitat;
—The restoration of tidal, shallow water, riparian, riverine, wetlands, and other habitats;
—The expansion of wetlands protection program;
—The acquisition of water for instream flow improvement;
—Improve habitat management;
—Improved management of introduced species;
—Improved fish protection and management.

The Proposition 204 bond measure on November 6 was approved with 63 percent voter approval. attached is a background briefing book describing Prop. 204 and the relationship to H.R. 4126.

DEPARTMENT OF THE INTERIOR FISCAL YEAR 1998 BUDGET REQUEST FOR THE CALFED BAY-DELTA PROGRAM

Consistent with the California Bay-Delta Environmental Enhancement and Water Security Act, the Administration included a request for $143.3 million in fiscal year 1998 as the first installment of the federal funds for ecosystem restoration activities being developed by a federal and state partnership (CALFED). The budget authority account of $143.3 million is included within the Bureau of Reclamation. These funds would be transferred to other federal agencies participating in the CALFED Bay-Delta Program. We support this "one-stop" federal line item as an efficient, less bureaucratic, streamlined approach to funding the federal cost-sharing requirements.

FEDERAL/STATE COST-SHARING PARTNERSHIP AND ROLE FOR STAKEHOLDERS TO ASSUME ADEQUATE FUNDING

The Coalition supports the use of federal-state matching funds for both interim and long-term ecosystem restoration efforts. As part of the 1994 Bay-Delta accord, the stakeholders, together with the state and federal signatories, committed to funding a variety of non-flow restoration projects. To date, approximately $22 million in water user funding has been provided for immediate implementation of such projects (commonly called Category III), over and above user contributions to other on-going Bay-Delta restoration programs, such as the CVPIA Restoration Fund. In addition, California voters recently approved $60 million in bond funding under Proposition 204 to serve as the State's share of the Category III program to be made available immediately. Consistent with these commitments, Congress authorized, and the President has requested, federal funding to support the federal share of the Category III program and related restoration efforts in recognition of the significance of these immediate needs to the overall success of the CALFED Bay-Delta program. Proposition 204 requires that, prior to the release of funds ($390 million) for the CALFED Bay-Delta ecosystem restoration program, a state/federal cost-sharing agreement will be executed. Likewise, the Administration's budget request for the CALFED Bay-Delta Program requires a cost-sharing agreement. A cost-sharing agreement is currently being developed. The Coalition supports expeditious completion of a cost-sharing agreement to ensure that the requested funds are spent in the most efficient, cost-effective manner that restores the Bay-Delta ecosystem.

ECOSYSTEM ROUNDTABLE PROCESS TO ASSURE THAT FEDERAL/STATE FUNDING IS FOCUSED ON PRIORITY PROJECTS

The CALFED Bay-Delta Program will be the largest environmental restoration effort of its kind. The Bay-Delta Program, therefore, represents an unprecedented cooperative effort among federal, state, and local agencies. The Program also provides for substantial input and guidance from stakeholders groups and all interested public interests. To ensure that the stakeholders' views are incorporated in the priority-setting process of selecting individual ecosystem restoration projects, the Ecosystem Roundtable was formed to advise the CALFED Bay-Delta Program state and federal agencies and to coordinate activities, projects, and programs throughout the Bay-Delta Watershed.

A comprehensive "implementation strategy" to identify near-term priorities for Bay-Delta Ecosystem Restoration is being finalized by the Ecosystem Roundtable for

use in conjunction with the fiscal year 1998 budget request and the overall five-year CALFED Program budget.

The overall Ecosystem Restoration Program will be implemented in phases, over several decades. This implementation strategy allows the short-term program to logically flow into a long-term program that allows for adaptive management flexibility.

SUMMARY

The CALFED Bay-Delta Program is bringing state, federal, local, and stakeholder interests together in an open public process to make joint decisions on how to implement the ecosystem restoration programs and monitor progress in order to ensure overall success. The CALFED Program has broad responsibility to plan and coordinate a comprehensive, long-term solution to restore the estuary and improve the reliability and quality of Bay-Delta water supplies. It is vital that environmental restoration activities be fully implemented. All stakeholders agree on this point.

Species in the Bay-Delta watershed continue to be proposed for listing under the Endangered Species Act (ESA). Recovery efforts cannot begin without adequate funding and assurances that cost-sharing arrangements -are available to implement the many needed projects.

Many projects and habitat restoration programs have already been planned and are ready to be implemented. Funding commitments are needed to move projects into construction. New projects are being identified by the Ecosystem Roundtable process and will be completed in early summer with a list of prioritized projects for the fiscal year 1998 program.

In closing, I note that the CALFED Bay-Delta partnership of state/federal/stakeholder interests is consistent with the Draft House Republican Policy Priorities (Item 9), "Make our environmental protection efforts smarter and more effective * * * by promoting needed environmental infrastructure—private as well as public." Clearly, our coalition's broad-based support for implementing a comprehensive Bay-Delta ecosystem restoration program demonstrates the urgent need to appropriate the $143.3 million request for fiscal year 1998.

PREPARED STATEMENT OF JOE SERNA, JR., MAYOR, CITY OF SACRAMENTO, CA

The City of Sacramento has been unenviably labeled as the city having the most dangerous flood plain in the United States. Despite the efforts of Federal, State, and local flood control agencies to counter this threat, devastating floods have occurred in the region during the past two years. In January and March of 1995 intense rainfall caused flooding in the City. Coupled with power outages that cut off power to drainage pumps, the storms caused extensive flood damages and evacuation of residents. Less than two years later, the intense rain storms of January 1997 over snowpacked watersheds in the region caused unprecedented runoff. Folsom Dam, on the American River was required to release the maximum design flow (115,000 cfs) within the downstream levees through the City of Sacramento, joining the Sacramento River in the downtown area. The Sacramento River was already conveying record flows from its tributaries, including the Feather River which experienced a flood of record. Had it not been for the system of relief weirs and bypasses of the Federal/State flood control system on the Sacramento River, it is likely there would have been levee failures effecting the City and disastrous flood damages and loss of lives of monumental proportions. The U.S. Army Corps of Engineers have estimated that if the January 1997 storms had shifted from the Feather River watershed to the adjacent American River watershed it is questionable that the existing levees would have been able to contain the releases that would have been necessary from Folsom Dam and Reservoir. The U.S. Army Corp of Engineers' estimate indicated there was a 50–50 chance of failure of the American River levee system.

Congress in September 1996 recognized the potential for immense flood losses and damages in Sacramento by including authorization in the Water Resources Development Act of 1996 for construction of 24-miles of levee improvements to the American River and 12 miles to the Sacramento River levees protecting the City of Sacramento, new flood gauges upstream of Folsom Dam and Reservoir, and improvements to the Flood Warning System along the lower American River.

In President Clinton's proposed budget for fiscal year 1998 released in February of this year, he included funds for several projects and studies that will increase the level of flood protection for the City of Sacramento. The "Common Elements" of the plan for providing a greater level of flood protection for the City of Sacramento, were authorized in the Water Resources Development Act of 1996, the President's proposal for $44.7 million in construction funds, together with $5.5 mil-

lion for bank protection on the levees of the American River which bisects the City demonstrates the Administration's high priority for raising the level of flood protection for this area. The City of Sacramento strongly recommends and supports approval of these funds so that the highest priority may be assigned to such construction without delay. The Administration's proposal also includes funds for initiating the flood control improvements on Magpie Creek and continued feasibility studies for the South Sacramento County Streams Group which flow through the City.

Funding is proposed by the Administration for Preconstruction Engineering and Design (PED) for the efforts of the U.S. Army Corps of Engineers to continue developing a comprehensive plan for flood control on the rivers through and adjacent to the City of Sacramento. Additional funding is needed for reimbursement for the Federal flood protection share of the works in the Natomas Area of Sacramento that have been constructed or improved by the Sacramento Area Flood Control Agency. Funding for the U.S. Army Corps of Engineers' PED efforts on the American River Watershed Investigation may need to be increased to allow the U.S. Corps of Engineers to continue the planning for a comprehensive solution to the American River threat.

The Administration's proposed budget requests $44.7 million for full funding of the construction funds needed for the "Common Elements" on the American and Sacramento Rivers improvements. If the Congress prefers to appropriate only the amount that could be expended in fiscal year 1998, the amount of $9.5 million would be sufficient to ensure timely implementation of the first year of the urgently needed flood control improvements. We are hopeful that some of the 1998 savings in the President's budget could be used to reimburse the locals for the work already performed in the Natomas Area of Sacramento. We currently estimate the U.S. Corps of Engineers reimbursement should be approximately $35 million. The President's budget also includes $5.5 million for needed bank work to protect the American River levees. The City of Sacramento supports the State of California and the Sacramento Area Flood Control Agency's efforts to assist in cost-sharing the "Common Elements" project. The Governor's budget for 1997–1998 includes $3.2 million for the State's share of the "Common Elements" and funding to match the Federal share of bank protection for the American River levees.

In summary, the specific recommendations from the City of Sacramento for the fiscal year 1998 appropriations for the U.S. Army Corps of Engineers flood control programs are supportive of the Administration's proposed budget and are as follows:

American River Common Elements (24-miles of slurry wall in the lower American River levees; 12-miles of levee modification on the Sacramento River; 3 stream flow gauges upstream of Folsom Reservoir; Modifications to the Flood Warning System below Folsom Dam)	$9,400,000
4-year total	44,740,000
Sacramento River Bank Protection Project	5,500,000
San Joaquin River Basin—South Sacramento County Streams Investigation	180,000
South Sacramento County Streams Group Preconstruction Engineering and Design	500,000
American River Watershed Preconstruction Engineering and Design	401,000
Reimbursement for Natomas North Area Local Project	35,000,000

The Continuing Authorities Program of the Corps of Engineers, authorized in the Flood Control Act of 1948, receives a lump sum appropriations each year, and funds are distributed to the U.S. Army Corps of Engineers offices for expenditures based on priorities established by the Chief of Engineers. The U.S. Army Corps of Engineers has been investigating the flood control problems and possible solutions on Magpie Creek since 1990 and has recently completed a feasibility study and environmental documentation for a project that would provide a high degree of flood protection on this stream. Preconstruction Engineering and Design are scheduled to be initiated in fiscal year 1997, and funds are needed in fiscal year 1998 to complete design and initiate construction. The City of Sacramento supports funding in fiscal year 1998 for continuation and completion of construction of this project. It is recommended that the Chief of Engineers provide sufficient funds for completion of the project in his distribution of fiscal year 1998 Section 205 funds.

In addition to Sacramento's flood control problems, the City has requested under Public Law 104–303, Section 503 (Watershed Management, Restoration and Development) that the U.S. Corps of Engineers assist the City of Sacramento with $3 million for the combined sewer system improvements which will improve Sacramento River water quality (see attached fact sheet).

Thank you for the opportunity to submit this statement and your consideration of the requested funding. The levees protecting the City of Sacramento are the City's first line of defense. Thank you for your assistance in making them reliable.

Issue:

Implement a federal cost-shared program to correct natural resources and human health threats associated with the City of Sacramento's Combined Sewer System (CSS). The proposed federal share of requested assistance is $3 million. The requested assistance is to support design and construction activities.

This project will accomplish two goals. First, it will address necessary infrastructure repairs to the city's wastewater treatment system. Second, it will contribute to the CAL-FED initiative to restore the Bay-Delta's ecosystem.

Background:

The local sponsor for this request is the City of Sacramento. Authority for this request is Public Law 104–303, Section 503 (Watershed Management, Restoration, and Development). This request is a new project.

The CSS is a system first constructed in the 19th century to handle rainwater and wastewater flows. After a century of use, the system is under significant stress due to age and environmental health concerns.

In 1990, the City recognized that the system required repairs and expansion.

At the same time, the California Regional Water Quality Control Board issued a cease and desist order due to storm-related sewer backups into streets and into the Sacramento River.

After significant studies, the City identified a solution that would include rehabilitation and facilities expansion to reduce future overflows.

The total cost is estimated to be almost $400 million, of which the first phase costing $132 million has begun. The project, once completed, will allow the City's economy to grow without damage to the environment, stabilize neighborhoods, and provide an enhanced quality of life by protecting the Sacramento River and by extension of the Bay-Delta.

The goals of the CSS project are: provide full control over the risk of wastewater flooding city streets; reduce the potential for untreated wastewater to be discharged to the Sacramento River when the system is over capacity; and rehabilitate infrastructure.

PREPARED STATEMENT OF THE COUNTY OF SAN JOAQUIN, CA

San Joaquin County, located in the heart of California's central valley, has both a vibrant agricultural economic base and burgeoning metropolitan growth. Both of these vital elements are vulnerable to the forces of nature. The 1997 flood has inundated thousands of acres and threatened our major urban areas. The actual economic loss to the County in 1997 is staggering ($100± million) and the potential loss due to flooding is enormous. The heart of Stockton faces a flood threat from the Calaveras River, Bear Creek and Mosher Slough. The Army Corps of Engineers is studying Federal alternatives to reduce the flood threat and their report is due in April 1997. In the meantime, a flood control authority, San Joaquin Area Flood Control Agency (SJAFCA) has been formed and construction is underway (a $70 million investment) to restore the Stockton area 100-year level of flood protection. We have aggressively moved ahead with this work to protect our people but we understand that we could receive credit for our work against a Corps developed project.

At the other extreme of the weather spectrum, San Joaquin is very vulnerable to drought induced water shortages. Due to the export of our water by East Bay Municipal Utility District to the Oakland area and by the Bureau of Reclamation to the CVP, San Joaquin County is deficient of an adequate water supply. Our ground water levels dramatically drop during a less than average water year. During these drops, the threat of salt water intrusion in our ground water basin from the Delta is a major concern. Our local water district (Stockton-East Water District) has invested $65 million to allow transfer of Stanislaus River flows to supplement our water supplies, but this project is dependent on the coordinated operation of New Melones Reservoir and local storage capability during wet years.

As you can see, we are willing to invest in our future and we will continue to do so. We need Federal help in several of these projects and we request Federal appropriations during fiscal year 1997–98 for the following Corps of Engineers and Bureau of Reclamation projects:

	Fiscal Year 1998
Corps of Engineers—General Investigations (Surveys)—Stockton Metropolitan Area	$450,000
Bureau of Reclamation—Construction Projects—South Delta Barriers	200,000
Bureau of Reclamation CAL-FED Program (HR 4126)	143,300,000

DETAILED COMMENTS

Corps of Engineers—Stockton Metropolitan Area

This Corps study addresses our two critical water resources needs—flood protection and water supply. The Corps study will develop a comprehensive flood control plan for Bear Creek, Mosher Slough, Calaveras River, Mormon Slough, Duck Creek and the San Joaquin River north of Mossdale. The Corps Reconnaissance study will be complete in April 1997. If the Corps identifies a project compatible with the $70 million SJAFCA flood restoration project, we expect to receive credit for our work against the local share of the larger Corps project.

In addition to the flood control, the Corps study will determine the viability of using the existing Farmington Dam for a water supply reservoir. The dam currently detains water for flood protection but does not store water for water supply. By making Farmington Dam a multiple purpose project, San Joaquin County's water shortage could be addressed with minimal impact. We are hopeful that this element of the study will obtain a Federal interest.

The timely funding and completion of this important Corps study is crucial to the economic well being of San Joaquin County.

U. S. Bureau of Reclamation—South Delta Barriers 1998

The programmed money will be used to start construction of salinity barriers in the South Delta. The completion of this project would formally conclude litigation brought against the Bureau by the South Delta Water Agency for violations of water quality standards. Trial barriers have been constructed annually and the permanent barriers should help the salinity problems in the South Delta.

U. S. Bureau of Reclamation—CAL-FED Process

The Federal funding requested will match State Proposition 204 monies for Delta restoration. These funds will be used to offset the accumulated impact of the CVP and SWP water diversions. Although project specifics are not readily available at this time, we expect the funding would improve Delta levee security, improve water quality in San Joaquin County, and enhance environmental habitat. San Joaquin County strongly supports this funding.

PREPARED STATEMENT OF DICK LYON, MAYOR, CITY OF OCEANSIDE, CA

U.S. CORPS OF ENGINEERS SAN LUIS REY RIVER FLOOD CONTROL PROJECT OCEANSIDE, CALIFORNIA

Dear Chairman Domenici and Members of the Subcommittee: The City of Oceanside requests the Subcommittee's support for $5,400,000 as recommended in the President's fiscal year 1998 budget for the final phase of construction of the San Luis Rey River Flood Control Project in Oceanside, California. This project provides 5.4 miles of double levee, stone protection with a soft bottom channel, 1,330 feet of parapet walls, six interior drainage ponds, a five-mile bicycle trail, and habitat to mitigate for impacts to the endangered least Bell's vireo. Over 90 percent of construction on this project has been completed. The remaining portion of the project is the closure of a small segment of levee, construction of the lower pond, installation of relief wells and additional environmental measures. With the proposed funding, construction of the project can be completed by December, 1997.

The City of Oceanside has appreciated the strong support that the Subcommittee has offered this project over the years. Completion of the San Luis Rey River Flood Control Project will provide flood protection to over 100 businesses in the Oceanside Industrial Park and Oceanside Municipal Airport area. This flood protection will not only provide a tremendous economic benefit to the citizens of Oceanside, but will also protect life and property against devastating floods.

Thank you for your continued support for this important project.

MISSION BASIN BRACKISH GROUNDWATER DESALTING RESEARCH AND DEVELOPMENT PROJECT OCEANSIDE, CALIFORNIA

The City of Oceanside appreciates the Subcommittee's past support for the authorization of the Mission Basin Groundwater Desalting Facility in fiscal year 1997. The City is now requesting that the Subcommittee support an appropriation of $1.5 million in the fiscal year 1998 federal budget for 25 percent of the desalter expansion costs.

The City of Oceanside owns and currently operates the Mission Basin Groundwater Desalting Facility, located near Fireside Drive in Oceanside. Under the current operations, approximately 1.9 million gallons per day (MGD) of potable water is produced from treating brackish groundwater through a reverse osmosis process. Because of the successful operation of the existing plant over the past three years, the City plans to expand the production capacity of the groundwater desalting program up to 6.3 MGD, or 22 percent of the City's daily average demand. The cost for the expansion is estimated to be $6.0 million. The additional water supply is expected to be available by late 1998.

The City of Oceanside is fortunate that the Mission Basin aquifer holds about 30 billion gallons or 92,000 acre feet of water. Water rights to this dependable aquifer were established over 100 years ago. The City anticipates that at least 50 percent of Oceanside's future water supply can ultimately be derived from this source.

Expansion of the Mission Basin Desalting Facility has several important benefits. First of all, it will provide the City of Oceanside an independent water source that can serve the community in the event of a natural disaster, such as an earthquake. In addition to reducing the City's reliance on imported water, the quality of water produced at the desalting facility is significantly better than that of the City's imported source (400–500 total dissolved solids [TDS] versus 600–700 TDS for imported water). Further, the project will enhance the City's ability to reclaim its wastewater which will be used for a sea water barrier on the downstream side of the Mission Basin aquifer, and will also be utilized for maintaining an environmentally safe water level in the aquifer.

The local water supply produced through the Mission Basin Desalting Facility saves the City of Oceanside $150,000 per year today and will save at least $500,000 per year when it is expanded to its 6.3 MGD capacity. These savings will keep Oceanside's water rates comparable to or lower than average rates in surrounding communities.

The City of Oceanside respectfully requests your support for this vital project.

PREPARED STATEMENT OF SAN DIEGO, CA, WATER RECLAMATION PROGRAM

The City of San Diego provides water service as well as wastewater collection, treatment and disposal service to a growing metropolitan area of two million people. The City receives 90 percent of its water supply from Colorado River and northern California sources, hundreds of miles distant from the City. Located at the tail end of this extensive aqueduct supply system, San Diego is most vulnerable to outages or reductions in supplies from these sources. In conjunction with its wholesale water supplier, the San Diego County Water Authority, the City is engaged in a long-term effort to reduce regional reliance on imported water supplies. The San Diego Water Reclamation Program is critical to the success of this effort.

The City will have invested nearly $300 million in water reclamation facilities through this fiscal year, and has programmed another $90 million in fiscal year 1998 to continue these efforts. Upon completion of the water reclamation and recycling projects in the next 20 years, the City will have an estimated $1 billion of capital investment in this program. The City's projects include 4 new water reclamation plants with a combined capacity of 57 million gallons per day (construction of the 30 mgd North City Water Reclamation Plant will be completed this month) and over 100 miles of reclaimed water distribution system pipelines; an innovative water repurification project to treat reclaimed water to a quality suitable for potable reuse; and a groundwater project providing for conjunctive use of reclaimed water and other sources of supply.

Section 1612 of Public Law 102–575, the Central Valley Project Improvement Act, authorizes the Secretary of the Department of Interior to provide financial support for water reclamation projects in the San Diego area. The U.S. Bureau of Reclamation is authorized to participate in the planning, design and construction of water reclamation projects serving the San Diego area at a federal cost-share of up to 25 percent. Based on the criteria established by the Bureau of Reclamation regarding funding eligibility, approximately $82 million through this fiscal year, and $138 million of the projected expenditures through fiscal year 1998 are eligible for federal

funding. Nearly half of the $1 billion of projected expenditures over the next 20 years would be eligible for the 25 percent federal funding.

These costs represent a heavy financial burden for the City to bear alone. Federal participation will help make this innovative water supply program a reality. Therefore, the City of San Diego respectfully requests the Committee to recommend appropriating funds in the amount of at least $13 million in fiscal year 1998 for the San Diego region through the Bureau of Reclamation program.

SAN DIEGO AREA WATER RECLAMATION PROGRAM

The San Diego Area Water Reclamation Program is an ambitious, long-term program designed to decrease regional reliance on imported water supplies. The Program is a cooperative effort by the cities of San Diego, Escondido, and Poway; the Otay Water District; the Padre Dam Municipal Water District; the Sweetwater Authority; the Tia Juana Valley County Water District; and San Diego County Water Authority. Together, these agencies have developed a system of interconnected water reclamation projects that will make the best use of existing and planned water reclamation facilities and result in a cost effective and efficient use of local water resources.

When completed, the San Diego Area Water Reclamation Program will serve an area of more than 700 square miles, from the agricultural valleys near the City of Escondido in the north to the expanding business centers along the international border with Mexico in the south. Ultimately, almost 23 billion gallons (70,050 acre-feet) will be added annually to the region's scarce local water supply, more than doubling the current average local water supply. Facilities to be constructed include up to ten new or expanded water reclamation plants, a state-of-the-art water repurification facility, and hundreds of miles of reclaimed water delivery pipeline.

Implementation of the San Diego Area Water Reclamation Program will produce both economic and environmental benefits. The development of local reclaimed water supplies will provide opportunities for environmental enhancement projects within San Diego County and reduce the demand for imported water from the Sacramento-San Joaquin River Delta, an environmentally sensitive water body of national significance. The availability of a reliable local water supply is also critical to the region's long-term economic health and its ability to attract and retain employers. In the near-term, construction of the reclamation facilities will stimulate the local economy by creating jobs in construction-related industries. After the facilities are completed, many high-wage, high-skill jobs will be created in the operation and maintenance fields.

Construction is already under way for a number of these reclamation facilities. The City of San Diego has nearly completed the construction of its flagship reclamation facility, the North City Water Reclamation Plant. While still in the planning stages, the proposed Water Repurification Program could have far-reaching consequences for both the San Diego region and the State of California. This innovative water supply project will treat reclaimed water to a quality standard equal to that of untreated water supplies. The repurified water would be stored in a local reservoir for subsequent potable uses. If implemented on a wide scale, water repurification technology could help to solve California's long-term water supply problem.

With an annual cost in the range of $900–$1,200 per acre-foot, the San Diego Area Reclamation Program is competitive with the development of new imported or other local water supplies. However, the level of capital investment makes it a heavy financial burden for the local agencies. The vast majority of the capital costs would have to be funded by local ratepayers. The financial feasibility of this ambitious water supply development project, if funded solely with local resources, is questionable. Federal participation would provide the means to ensure the project is constructed and the benefits realized.

CITY OF SAN DIEGO REGIONAL WATER RECLAMATION PROJECT

The City of San Diego is undertaking a regional water reclamation program which will ultimately provide over 8.6 billion gallons (26,500 acre-feet) of reclaimed water annually to users within the City of San Diego and surrounding communities. The proposed regional reclamation system will include four new water reclamation plants: one in northern San Diego, one in central San Diego, and two in southern San Diego near the international border with Mexico. These water reclamation facilities will serve commercial, industrial and residential customers through a network of over 125 miles of distribution pipeline.

Northern/Central Regional Water Reclamation System

The City of San Diego is scheduled to complete construction of its flagship reclamation facility, the 30-million-gallon-per-day (mgd) North City Water Reclamation Plant (North City WRP), this month. The North City WRP could ultimately provide over 4.5 billion gallons (14,000 acre-feet) of reclaimed water annually to meet commercial, industrial and landscape irrigation demands in northern and central San Diego and the southern portions of the neighboring City of Poway. Reclaimed water will be delivered to over 750 user sites via an extensive network of pump stations and pipelines. The City of Poway has completed a portion of its southern reclaimed water distribution system and will complete the remaining portions of the system in time to take deliveries from the North City WRP. Initial users will include the internationally known Torrey Pines Golf Course, Miramar Naval Air Station, and CalTrans, as well as numerous schools, parks, nurseries and residential homeowner associations.

Construction of the North City WRP created badly needed jobs in San Diego's construction-related industries. The City estimates that this project alone generated 4,400 job-years of work for the local community. Construction of the northern/central distribution system is expected to generate an additional 4,200 job-years of work. After the plant is completed, many high-wage, high-skill jobs will be created in the operation and maintenance fields. The development of a reliable local water supply will improve the long-term health of the San Diego economy by enhancing the region's ability to attract and retain employers.

A future reclamation plant is planned for the commercial center of San Diego to supplement reclaimed water from the North City WRP. The proposed 8-mgd Mission Valley Water Reclamation Plant (Mission Valley WRP) could provide 1.3 billion gallons (4,000 acre-feet) of reclaimed water annually for the irrigation of schools, parks, commercial and tourist facilities, cemeteries, nurseries, golf courses, freeway embankments and street medians. This supplemental source of reclaimed water would allow the North City WRP to serve new customers in the developing communities in northern San Diego.

South Bay Regional Water Reclamation System

Construction of the North City WRP will be followed by the construction of the 7-mgd South Bay Water Reclamation Plant (South Bay WRP) near the international border with Mexico. The South Bay WRP will provide almost one billion gallons (3,000 acre-feet) of reclaimed water annually to approximately 50 commercial, industrial, and agricultural users in Southern San Diego County. The South Bay WRP and southern distribution system, currently scheduled for completion by 2001, will complement reclamation projects proposed by Otay Water District, the Sweetwater Authority, and the Tia Juana Valley County Water District.

The estimated costs (in 1997 dollars) for the City of San Diego Water Reclamation Program are as follows:

Northern/Central Regional Water Reclamation System:	
North City WRP	$50,094,000
Mission Valley WRP	17,040,000
Northern/Central San Diego Distribution System	180,615,000
Subtotal	247,749,000
South Bay Regional Water Reclamation System:	
South Bay WRP	22,475,000
Southern San Diego Distribution System	21,493,000
Otay Valley WRP	14,880,000
Subtotal	58,848,000
Total	306,597,000

SAN DIEGO WATER REPURIFICATION PROGRAM

The City of San Diego, with assistance from the San Diego County Water Authority (SDCWA), is planning to use cutting-edge technology to purify almost 4.9 billion gallons (15,000 acre-feet) of reclaimed water annually to a level equivalent to that of existing imported water supplies. The Water Repurification Project is the natural outgrowth of a multi-year health effects study conducted by the City of San Diego. The health effects study showed that the quality of repurified water is comparable to the quality of imported raw water supplies and has no health effects.

The City of San Diego proposes to construct a water repurification facility with a capacity of up to 20-million-gallons-per-day (mgd) to treat reclaimed water from the North City Water Reclamation Plant. The repurified water would be transported over 20 miles to the San Vicente Reservoir for blending with imported raw water supplies. The blended water would eventually be conveyed via the existing El Monte Pipeline to the Alvarado Filtration Plant. There the water would undergo additional filtration and disinfection before being introduced into the City's potable water delivery system.

The City of San Diego and the SDCWA conducted a detailed feasibility study which indicated the proposed project is both technically and economically feasible. The State of California Department of Health Services reviewed the feasibility study and conceptually approved the proposed project. A citizens advisory committee convened by the City and the SDCWA concluded that there is sufficient information available to establish the suitability of water repurification as a supplement to the San Diego region's water supply.

The Water Repurification Program is expected to replace the less cost-effective elements of the City of San Diego's proposed non-potable distribution system. Implementation of the Water Repurification Program in combination with selected elements of the non-potable distribution system would allow the City to achieve the most efficient use of water from its North City WRP. Should the Water Repurification Program prove feasible, it could begin operation in late 2001.

The proposed Water Repurification Program has potentially far-reaching consequences for both the San Diego region and the State of California. California has a wastewater stream of some 2.5 to 3 million acre-feet per year, the vast majority of which is going unused. By providing for the near total recovery of this non-traditional resource, the Water Repurification Program could help to solve California's chronic water supply problem.

The estimated cost of the Water Repurification Program in 1997 dollars is $133,523,000. Cumulative expenditures through fiscal year 1998 are projected to total $14,223,000.

SAN PASQUAL GROUNDWATER PROJECT

The proximity of the San Pasqual Groundwater Basin to the City of Escondido's Hale Avenue Resource Recovery Facility (HARRF) provides a unique opportunity for the conjunctive use of reclaimed water and groundwater supplies. The San Pasqual Valley, an agricultural preserve located within the incorporated limits of San Diego, contains wetland, riparian and other sensitive habitat. The world-renowned San Diego Wild Animal Park is also located within the preserve's boundaries. The existing City of San Diego's 1-mgd San Pasqual Aquaculture Plant provides reclaimed water for irrigation purposes to agricultural customers in the Valley and residential and commercial users in the community of Rancho Bernardo.

The City of San Diego proposes to construct a San Pasqual Groundwater Project which will recharge up to 2.6 billion gallons (8,000 acre-feet) of reclaimed water from the HARRF into the San Pasqual Valley Groundwater Basin. The reclaimed water will blend with natural sources of recharge and will subsequently be extracted and treated at a 5-mgd reverse-osmosis facility, to be located at the San Pasqual Aquaculture Plant site.

The San Pasqual Groundwater Project will add approximately 2.6 billion gallons (8,000 acre-feet) to local water supplies. In addition to the benefits derived from job creation in the construction and service industries, implementation of this project will result in the preservation of sensitive habitat and the protection of a vital watershed area. Improvement of the groundwater quality in the basin will also help farmers reliant on groundwater supplies remain economically viable and maintain the San Pasqual Valley's agricultural identity.

The estimated cost of the City of San Diego San Pasqual Groundwater Project in 1997 dollars is nearly $47 million.

PREPARED STATEMENT OF THE PUBLIC WORKS DEPARTMENT, CITY OF TRACY, CA

The City of Tracy has developed a water reuse project to separate the water used by H.J. Heinz' Tracy plant to wash tomatoes. This water, called food process water, currently is sent directly to the City's municipal treatment facility. Food process water is used only to clean the tomatoes. There is no sanitary contribution.

The volume of water from the Heinz facility is approximately 800 acre-feet per year. By separating out the Heinz flow, additional capacity will be available at the municipal treatment plant. The City's Master Plan Study concluded that this was

the most cost effective way to add capacity to provide for anticipated industrial and residential growth in the community.

The City proposes to purchase or lease a farm of approximately 300 acres of land that it would irrigate with the process water. Utilizing a separate pipeline from the Heinz facility, the water will be conveyed to the farm for reuse. The City intends to enter into a contract with an experienced farm manager who will actually run and maintain the farm on a day-to-day basis. The organic matter in the water contains valuable nutrients that make it an ideal soil conditioner for some forage crops such as alfalfa, oats, milo or hay. The crop will be sold and revenues generated will offset a portion of the farm's operating expense. The fields will be tilled, disked and carefully managed in accordance with the Best Management Practices typical of the local area.

The farm will look like any other farm in the community. All the food process water imported will be contained on the site and any storage ponds will be lined.

This project is similar to many others that have been successfully operated in other parts of California. The Cities of Merced and Modesto, among others, have similar farms that have been on-going for more than 10 years.

Food process water reuse is environmentally-friendly. Recent studies of the water content has indicated that the water is very safe. The water was sampled for a wide variety of constituents including metals, herbicides, insecticides, solvents and other organic chemicals. Maximum detected metal concentrations were well below drinking water standards by factors of 5 to 10 or more. Few organic compounds were detected in the water and were also substantially below drinking water standards. They will be continuously monitored as required by a variety of state regulations.

The goals of the water recycling and reuse project include:

—Conserve and reuse water for agriculture and the community;
—Select a farm site that is technically acceptable;
—Select a farm site that meets with the approval of the public;
—Reduce flows to the City Municipal Treatment Facility; and
—Involve the public in all aspects of the project.

The public has actively participated in the project from the beginning. The City organized a Citizen's Advisory Committee, consisting of local farmers, other key stakeholders, and representatives of the City and Heinz, to assist the City in its planning. A series of interviews with knowledgeable community leaders were conducted to focus on issues and concerns. Two public forums were advertised and held in Tracy to give the public an opportunity to comment.

Two project overview newsletters were prepared and distributed to the community. Other interested citizens were mailed newsletters and case studies of similar San Joaquin Valley projects. There was, for all intents and purposes, no citizen opposition.

Funding will be in the form of a combination of local and federal funding. The project is estimated to cost approximately $13 million. The local share of $9.75 million will be bond financed. The federal share is $3.25 million.

The project has received substantial public support as it affords a number of benefits to the agricultural and the development communities, and the City and its residents as a whole. It provides for future growth in a cost-effective basis, benefits Tracy's largest industrial employer, while reusing water in a environmentally-friendly plan.

PREPARED STATEMENT OF WALTER FICKEWIRTH, CHAIRMAN, PLACER COUNTY WATER AGENCY

In 1996, representatives of this community submitted testimony with bipartisan, regional support of a multi-purpose Auburn Dam and its related issues. [attached for ease of reference are copies of last year's written statements submitted by Placer County Water Agency (PCWA) and the American River Authority (ARA).] All of the reasons to support a multi-purpose Auburn Dam project by PCWA and others remains as valid today as in previous years, if not more so.

Our request for Federal fiscal year 1998 concerns PCWA's need to reliably access, year-round, our American River water entitlements by pumping from the North Fork American River at Auburn. Our proposal has the potential to save the federal government money and not be a detriment for future support of a multi-purpose Auburn Dam project.

By way of background, in the 1960s PCWA completed construction of a pump station to deliver water to PCWA's 3-mile long tunnel to supply water from the North Fork American River to Placer County for municipal, industrial and agricultural needs. [A copy of a photograph of the 1967 installation is enclosed (Exhibit A).]

Shortly thereafter, a contract was entered into by the U.S. Bureau of Reclamation (Reclamation) and PCWA, that, among other things, allowed Reclamation to remove the PCWA pumps with a promise by Reclamation to re-install the pumps every year upon request of PCWA until the Auburn Dam was completed.

Conditions have changed relevant to the Dam and for the last several years, Reclamation has been installing, removing and reinstalling a temporary replacement pump station at a minimum cost of $250,000 per year. This year, there was a flood of record in the American River, resulting in tremendous movement of the river bed and nearly total destruction of temporary pump station components and access road. Reinstallation of just the temporary pump for 1997 will cost the Federal government in the neighborhood of $1 million. [Included are a series of photographs of the North Fork American River at Auburn (Exhibit B) taken during and after the devastating flood of early January 1997 in Northern California.] We estimate the American River bed near Auburn went down forty feet in some areas, which will not only increase the temporary pump station installation costs this year but will increase the likelihood of similar damage at lower flows in the future.

All of this brings us to the issue of the day: We are seeking federal funding for a PCWA all-weather, year-round accessible and operational pump station with associated channel stabilization that carries water to the pump intakes and that will allow PCWA to access its own water year-round. Also, we seek to help the federal government eliminate the annual federal expense of installing and removing the temporary replacement pumps that are subject to flood damage. Further, we seek a project that, when a multi-purpose Auburn Dam is built, allows most of the pump station equipment to be salvaged and re-installed as part of a permanent pump station that will be required because of the probable fluctuations in water level of a multi-purpose facility. [The fluctuation of the lake will impact us because the inlet of the PCWA existing 3-mile long, 12-foot diameter tunnel is located 250 feet above the river, thus whenever the surface elevation of an Auburn Dam reservoir drops below the tunnel inlet, a pump will be needed to lift water to the tunnel inlet.]

In regard to a funding request, there are some variations due to the nature of this project that we outlined below.

PCWA urges your support of Reclamation's request for a supplemental appropriation for Federal fiscal year 1997 of $1.5 million to replace the temporary pump station this year. PCWA relies on this facility to meet the needs of its existing customers each year; and we fully support Reclamation in this request as an absolute minimum level.

In 1995 and 1996, Reclamation prepared a concept report for the installation of an all-weather pumping facility to meet PCWA's needs and to eliminate Reclamation's annual costly obligations. In 1997, $1 million in additional funding has been appropriated to Reclamation to prepare final plans and specification for construction of the facilities.

Reclamation had requested $10 million in the 1998 budget and additional funding in 1999. But the 1998 funds were removed by the Federal Administration last spring because of the then-ongoing consideration in Congress over whether to immediately begin construction of a phased, multi-purpose Auburn Dam to provide flood control to Sacramento. Matters on Auburn Dam did not materialize and neither did the Administration's authorization of the $10 million.

PCWA, thus, urges your support for restoring Reclamation's $10 million funding in 1998 for the continuation of the all-weather pump station and channel stabilization project. Without your support for this project the work will stop at the end of this year and Reclamation will continue to spend millions of dollars on an inadequate, annual temporary facility.

Your consideration to fund this appropriation request by Reclamation and PCWA would be greatly appreciated.

If you have any questions, or need any additional information, feel free to contact: at PCWA, General Manager Dave Breninger at (916) 823–4860, or our Special Projects Administrator, Jack Warren, at (916) 823–4960; or at Reclamation, Regional Director Roger Patterson at (916) 979–2207, or Area Manager Tom Aiken at (916) 988–1707.

Thank you for this opportunity to bring this matter to your attention for funding.

PREPARED STATEMENT OF THE DEPARTMENT OF WATER AND POWER, CITY OF LOS ANGELES, CA

The Department of Water and Power of the City of Los Angeles is the largest municipal utility in the United States serving a city of 3.6 million.

The Department respectfully requests the subcommittee's approval and support of an appropriation of $10 million for the Los Angeles Area Water Reclamation Program as contained in the President's budget. Included within this budget is about $4 million for the East Valley Water Recycling Project and $1 million for the Terminal Island (Los Angeles Harbor) Water Recycling Project. These projects were authorized pursuant to Section 1613 of Public Law 102–575, the Reclamation Projects Authorization and Adjustment Act of 1992.

The East Valley project involves the construction of 13 miles of pipe and a pump station. About 2 miles of pipe have been constructed. The remaining pipeline and the pump station will be constructed in fiscal year 1998, so that operations can start in December 1998. The project will cost $55 million when completed. The 25 percent federal share amounts to $13 million, of which we have already received $4 million. Our request of $4 million for fiscal year 1998 will help keep this project on schedule toward completion at the end of 1998.

The East Valley Water Recycling Project represents the cornerstone of Los Angeles' commitment to water recycling. It will ultimately distribute 32,000 acre feet per year of recycled water to our local San Fernando Valley Groundwater Basin. The recycled water will also eventually be used for irrigation and industrial purposes.

The other project is the Terminal Island (Los Angeles Harbor) Water Recycling Project. It will provide upgraded treatment and a distribution system that will utilize recycled water for groundwater recharge, industrial and irrigation applications. It is estimated to cost about $37 million and will operational by December 1999. Twenty-five percent of the cost which is reimbursable from federal funding is $9.25 million. $840,000 has been appropriated for 1996–97. We are requesting $1 million for 1997–98.

Mr. Chairman, Los Angeles is an arid region that has traditionally relied heavily on imported sources of water to meet its needs. Imported water will continue to provide most of the necessary supply. However, increased environmental concerns, several recent years of drought, limitations on the ability to further develop state water supplies, and other factors have caused Los Angeles to aggressively embrace water recycling as an integral part of its water future along with water conservation. Out goal is to displace up to 10 percent of our water supply by 2010 with recycled water.

Mr. Chairman, the Department appreciates the opportunity to appear before you today to submit this statement. Thank you for your longstanding support of water recycling projects in Southern California.

Prepared Statement of the Yuba County Water Agency

The Yuba River is the third largest tributary of the Sacramento River, exceeded in drainage area only by the Feather and American Rivers. The Yuba River Basin, which lies between the Feather and American Rivers, drains about 1,200 square miles of the Sierra Nevada Mountains. Runoff enters the Feather River at the cities of Marysville and Yuba City, which, with adjacent communities, are in flood plains protected by levees.

Summary of Request

Yuba County Water Agency requests approval of appropriations of $325,000 for continuing the feasibility study that is in progress by the US Corps of Engineers, $9,300,000 for continuing USCE levee restoration work, and $50,000 for advance design of higher levels of flood protection. Yuba County Water Agency has entered into contract to provide the non-federal share of the total feasibility study cost. The $9,300,000 is for continuing the levee restoration work in the Marysville-Yuba City Area. Yuba County Water Agency has entered into an agreement to underwrite the local non-federal share of the levee restoration work in Yuba County and is in the process of acquiring rights of way for the Project. The California Reclamation Board is acting as local sponsor for all of these activities. All of the requested appropriations are included in the President's 1998 Budget. Yuba County Water Agency has committed and has made available all of the local share of the funding for the projects being requested.

Need for Increased Flood Protection

On 2 January 1997 one of the levees scheduled to be restored with the $9,300,000 appropriations being requested instantaneously failed, resulting in three deaths, 18,200 acres flood and $300,000,000 in damages.

Since 1950 the Area has experienced seven major floods, the latest in January 1997, which displaced 100,000 people. These floods affected large areas of residential, commercial and industrial development as well as agricultural lands. The 1955

flood displaced 40,000 people and resulted in 40 deaths. The 1950 flood inundated 43,000 acres, the 1955 63,000 acres and the 1986 10,700 acres.

U.S. Corps of Engineers' studies show the existing levees are only providing about a 30 year level of protection and if restored to project standards will provide in the range of 60 year level of protection. The feasibility study is expected to show justification for a project that would provide 200 year level of protection.

The Yuba is one of California's major rivers with an annual average unimpaired runoff of 2.4 million acre feet. The River is comprised of three principal forks and a number of lesser tributaries. The only flood control storage on the Yuba is New Bullards Bar Reservoir on the North Fork which provides 170,000 acre feet of flood space. The Middle and South Forks of the Yuba are virtually uncontrolled with regard to flood protection. A 1990 U.S. Corps of Engineer's study concluded that rather than provide flood storage for the Middle and South Forks of the Yuba River, higher levels of flood protection should be provided by enhancing the levees.

The Yuba River watershed is steep and reacts quite rapidly to storms.

Though the Marysville-Yuba City Area is increasing in commercial and industrial development and is experiencing an increase in new housing starts, the low level of flood protection is deterring additional economic growth that would otherwise occur. Yuba County has the highest welfare rate and the one of the lowest per capita income of any county in California. In addition to providing higher levels of protection to existing property, increased flood protection will provide economic stimulation to the Area. The levee restoration work in itself will create additional jobs and the Yuba County area protected by the levees contains the four largest employers in the County. Without increased levels of flood protection these jobs are in jeopardy.

The levee restoration work and feasibility study to support higher levels of flood protection need to proceed as rapidly as possible:

—Devastating floods can occur in any year. The longer the delay in constructing needed flood facilities, the greater the risk of loss of life and property, as demonstrated in January of this year.

—Construction and property costs continue to escalate.

—Improved levels of flood protection will help stimulate the depressed economy of the Area.

Local Participation

The Yuba County Water Agency has contracted to pay the 50 percent non-federal share of the feasibility study and has contracted and committed to underwrite the local non-federal share of the levee restoration work in Yuba County. Yuba County Water Agency has the funds in a restricted reserve account to fully cover the committed costs.

Conclusion

The Marysville-Yuba City Area of California has, since the days of the Gold Rush, been the commercial hub of the region. The Area has on numerous occasions been ravaged by floods, resulting in substantial loss of life and property. Though some flood protection has been achieved through the construction of extensive levee systems and the Oroville Dam on the Feather and New Bullards Bar Dam on the North Yuba, the current facilities are not adequate to provide a reasonable level of protection to the Area. The levee restoration project and the feasibility study will contribute to improved levels of flood protection to around 100,000 people and property valued at $2 billion within the 100 year flood plan. The Area is one of high unemployment in California. The lack of adequate flood protection, in addition to placing existing developments at risk, is restricting the development of potential additional job creating industrial and commercial enterprises.

PREPARED STATEMENT OF BRUCE GEORGE, MANAGER, KAWEAH DELTA WATER CONSERVATION DISTRICT

Mr. Chairman and Members of the Subcommittee: My name is Bruce George, and I am the Manager of the Kaweah Delta Water Conservation District in the eastern San Joaquin Valley of California. Thank you for the opportunity to present testimony regarding the fiscal year 1998 budget for the U.S. Army Corps of Engineers. This testimony is presented on behalf of the District, and it's co-sponsors: the City of Visalia, the County of Tulare, and the County of Kings.

The President's fiscal year 1998 budget request for the Corps of Engineers includes $1.1 million for the continuation of preconstruction engineering and design (PED) of a project to increase the water storage capacity of Lake Kaweah at Terminus Dam California's San Joaquin Valley.

The President's budget also provides $684,000 in fiscal year 1998 dam safety funding for completion of a seismic testing and analysis program to verify the stability of Terminus Dam. The dam safety funding is included in the $2.073 million that the Corps has budgeted for operations and maintenance at Terminus Dam in fiscal year 1998.

The Kaweah Delta Water Conservation District and its project cosponsors support the President's fiscal year 1998 budget for Terminus Dam and Lake Kaweah, and we respectfully request that Congress appropriate the $1.1 million budgeted for PED and the $2.073 for operations and maintenance of the project.

The California Water Commission also supports the level of funding requested by the President for the Terminus enlargement project and dam safety program.

Funding of the Terminus PED and dam safety programs have been strongly supported by Representatives Bill Thomas, Cal Dooley, and George Radanovich.

Terminus Dam Enlargement Project

The Kaweah Delta Water Conservation District was formed in 1927 to conserve and protect the surface and groundwater of the Kaweah delta. The District serves 337,000 acres, which include the cities of Visalia and Tulare and several other incorporated and unincorporated areas in Kings and Tulare counties. Those two counties consistently rank among the most productive agricultural counties in the nation.

Terminus Dam and Lake Kaweah, located on the Kaweah River three and one-half miles east of the District, were completed in 1962 by the U.S. Army Corps of Engineers. The purpose of the project is to provide storage space for flood protection and irrigation on the Kaweah River. The Conservation District manages the irrigation and flood control releases for the Kaweah River, as well as assisting in the conjunctive use of the surface and groundwater of the Kaweah delta.

Rapid growth and inadequate flood protection in the region have created a need for greater reservoir storage space for flood control and irrigation storage. With a maximum capacity of 143,000 acre-feet, Lake Kaweah currently provides a less than 50-year level of flood protection for communities downstream.

In 1988, the Corps began a feasibility study for a project to enlarge Lake Kaweah. The project would add approximately 43,000 acre-feet of flood control and conservation storage space to the lake by widening the Terminus Dam spillway and raising it by 21 feet. The estimated total first cost of the project is $36 million. Bruce George Manager Kaweah Delta Water Conservation District .

PREPARED STATEMENT OF KATHERINE GONG MEISSNER, CITY CLERK, CITY OF STOCKTON, CA

Mr. Chairman and Members of the Committee: The City of Stockton supports the following Corps of Engineers and Bureau of Reclamation water, flood control and fishery projects:

Stockton Metropolitan Area Study and Farmington Dam Evaluation	$450,000
South Delta Barriers	200,000
CAL-FED Program (HR 4126)	143,300,000

U.S. CORPS OF ENGINEERS

Stockton Metropolitan Area Study and Farmington Dam Evaluation

The Federal Emergency Management Agency (FEMA) completed a study of flood potential for the Stockton Metropolitan area. The study concluded that much of the Stockton Metropolitan area did not have protection from a 100-year flood. The affected area included all of downtown Stockton and the most heavily populated areas of the community.

Although the City of Stockton and San Joaquin County pursued a locally funded project to restore the 100-year flood protection, U.S. Army Corps of Engineers' assistance was needed to review alternatives that would raise this level of protection and provide reimbursement for at least some of the locally funded expenses to at least 200 years. This study may also identify a multiple purpose project that could help resolve our inadequate water supply situation.

Farmington Dam is an existing Corps of Engineers flood control project in San Joaquin and Stanislaus Counties. It is normally dry, but controls flows from the Little John Creek stream group during flood events. A project to raise the level of Farmington Dam shows the promise of being able to provide water to the City of Stockton via Stockton East Water District from its Stanislaus River Project with minimal additional infrastructure. The increased utilization of upstream reservoir

storage and operational improvements at Farmington Dam to enhance downstream flood protection will greatly benefit our region.

BUREAU OF RECLAMATION

South Delta Barriers

The California Water Commission supported a funding add-on request to allow the Bureau to participate with the State in constructing a barrier to improve water quality in the South Delta. The request came from the South Delta Water Agency and was supported by the City. The City continues its support of this project. The City's Water Quality Model of the San Joaquin River indicates this barrier would greatly enhance water quality in the vicinity of Stockton.

CAL-FED Program (HR 4126)

The Federal funding requested will match State Proposition 204 monies for Delta restoration. These funds will be used to offset the accumulated impact of the Central Valley Projects and State Water Projects water divisions. Although project specifics are not readily available at this time, it is expected that the funding would improve Delta Levee security, improve water quality in San Joaquin County, and enhance environmental habitat. The City of Stockton strongly supports this funding".

PREPARED STATEMENT OF CARL L. BLUM, DEPUTY DIRECTOR, DEPARTMENT OF PUBLIC WORKS, LOS ANGELES COUNTY, CA

Summary of recommendations by Los Angeles County Department of Public Works concerning budget allocations to the U.S. Army Corps of Engineers.

We strongly support the California Water Commission's recommendation to the Committee for:

—$40 million to fund the continuing construction phase of the Los Angeles County Drainage Area (LACDA) project.

—$204,000 to fund the completion of the feasibility study for the Los Angeles County Drainage Water Conservation and Supply of Hansen and Lopez Dams.

—$189,000 to fund the completion of the feasibility study for the Los Angeles County Drainage Water Conservation and Supply of Santa Fe and Whittier Narrows Dams.

Mr. Chairman and Members of the Committee: We appreciate your Committee's continued support of critical flood control and water conservation projects in Los Angeles County, California.

Background for Recommendation No. 1

Floods are a part of the history of the Los Angeles area. Widespread floods have periodically devastated vast areas of the region and were responsible for taking lives, damaging property and interrupting commerce and trade.

The U.S. Army Corps of Engineers and County of Los Angeles, acting on behalf of the Los Angeles County Flood Control District, have built one of the most extensive flood control systems in the world. Construction of the major elements of the system began in the 1920s and consisted of 20 major dams, 470 miles of open channels, and many other appurtenant facilities. Fifteen of these major dams are owned and/or operated by the County while the remaining five dams (Hansen, Lopez, Santa Fe, Sepulveda and Whittier-Narrows), are owned and operated by the Corps. Since the major segments were completed, it is estimated that the system has prevented $3.6 billion in potential flood damage.

Development which occurred after World War II exceeded the projections the Corps used in the 1930s and has increased runoff to the point where, even in a moderate storm, the runoff could exceed the design capacity of portions of the system. For example, the lower Los Angeles River in the City of Long Beach can only provide protection from a 25-year flood and came close to overtopping in 1980. A storm of greater magnitude would have a tremendous impact, both personal and economic, on Los Angeles County, the nation's second largest metropolitan area.

At the request of the County of Los Angeles, the U.S. Army Corps of Engineers analyzed the adequacy of the existing major flood control facilities serving the Los Angeles basin in the LACDA Review study. In 1990, a Project to upsize a portion of the LACDA system received Congressional approval subject to a favorable report by the Chief of Engineers (received in 1995), and signature of the Record of Decision by the Secretary of the Army, which was obtained in July 1995.

The final report by the Corps identified 100-year flood damages totaling $2.25 billion covering an 82-square-mile area which houses over 500,000 people. These dam-

ages would occur in the heavily-urbanized Los Angeles basin, where adequate protection from a 100-year flood was previously provided.

The LACDA project is a critical modification to existing facilities. Obtaining funds to do the modification is critical for two reasons: first, because of the threat of flooding to over one-half million people; and second, because FEMA is in the process of finalizing Flood Insurance Rate Maps (FIRMs) for the area that would be affected by overflows from the lower Los Angeles River and Rio Hondo Channel. The financial impact on the affected property owners could reach as high as $131 million annually for flood insurance premiums. Any delay in construction causes a great financial hardship on thousands of people, who thought the existing river provided adequate protection and will now need to buy flood insurance until such a project is completed. An economic impact study done by the University of Southern California also indicated that failure to construct the needed flood control measures will result in the loss of as many as 120,000 jobs. Economic losses in the region of over $30 billion over a 10-year period could also be realized due to stringent building restrictions.

This project, currently estimated to cost approximately $240 million, is scheduled, pending adequate funding, to be completed within the next five years. The 1994–95 budget included $500,000 to initiate the first construction contract awarded in September 1995. The 1995–96 budget included $11.3 million to continue the first contract. The current 1996–97 budget includes $14.4 million to complete the first contract and two new construction contracts awarded in August and September of 1996. Two additional construction contracts will be ready to award later this fiscal year. In order to complete the project within the five-year schedule, it is critical to move the level of construction activity to the $50 million a year level. As a result, we strongly support the California Water Commission's recommendation for $40 million of Federal funds to continue construction of the LACDA Project ($10 million will be provided by the local sponsor).

Background for Recommendations 2 & 3

Since their inception, the majority of the County's 15 dams have performed a dual role. In addition to flood control, our facilities have also been used to capture local storm runoff to assist in recharging our underground aquifers. With the exception of the Whittier-Narrows Dam, Corps facilities are not used to assist in groundwater recharge activities. Increased demands on our existing water supply system have shown the need of integrating local resources to better manage our local water supplies.

While the County captures much of the water flowing within our flood control system, 280,000 acre-feet on average is discharged to the Pacific Ocean each year from the Los Angeles River. Since 1985, the County has been working to improve its existing water conservation system. The utilization of certain Corps facilities could be an integral part of this system by storing significant amounts of this lost runoff.

In 1993, Congress authorized the Corps to initiate a reconnaissance study to determine the viability of increased use of Corps facilities for water conservation. The study looked at establishing water conservation pools at Hansen, Lopez, and Santa Fe Dams, and increasing the existing water conservation pool at Whittier Narrows Dam. The utilization of these facilities would benefit many of the groundwater basins in the County. A secondary benefit would be realized by helping to dilute the groundwater pollution that currently threatens many water supply wells within these basins.

In May 1994, the Corps' reconnaissance study was completed. Preliminary benefit-cost ratios range from 2.2 to 19.0 for the four study sites, and the annual economic benefits range from $622,700 to $6,463,000. Overall, the four reservoirs could potentially conserve nearly 17,000 acre-feet annually of additional storm runoff, enough water to serve the annual needs of nearly 136,000 people. The study concluded that two feasibility studies were warranted: one for the Hansen Dam-Lopez Dam system, the other for the Santa Fe Dam-Whittier Narrows Dam system. The Corps began these feasibility studies in January 1995 with Los Angeles County as the local sponsor. Each feasibility study was to be conducted over a four-year period at a total cost of $4.66 million ($2.24 million for the Hansen-Lopez system and $2.42 million for the Whittier Narrows-Santa Fe system). The County will contribute 50 percent of the necessary funds. Currently, we are in the third of this four-year schedule and anticipate completing both feasibility studies by early 1998.

We strongly support the amount included in the President's budget and supported by the California Water Commission for the 1998 fiscal year for the Hansen-Lopez study and the Whittier Narrows Santa Fe study.

We appreciate your Committee's continued support in addressing these critical concerns in the Los Angeles County area of Southern California.

PREPARED STATEMENT OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, BOARD OF SUPERVISORS

RESOLUTION NO. F97–2 SUPPORTING FEDERAL APPROPRIATIONS FOR FLOOD CONTROL PROJECTS FOR FISCAL YEAR 1998

WHEREAS, the United States House of Representatives Committee on Appropriations, Sub-Committee on Energy and Water Development, and the United States Senate Committee on Appropriations, Sub-Committee on Energy and Water Development are holding hearings to consider appropriations for Flood Control and Reclamation Projects for fiscal year 1998 and have requested written testimony to be submitted to the committees prior to March 31, 1998; and

WHEREAS, the Riverside County Flood Control and Water Conservation District (District) supports the continuation of construction of the Santa Ana River Mainstem project, the completion of design and initiation of construction for the project to reduce flooding and bank destruction along the Santa Ana River at Norco Bluffs, California, the initiation of land acquisition for the Section 1135 environmental enhancement project at Gunnerson Pond, Lake Elsinore, California, the continuation of a flood plain maintenance plan study for Murrieta Creek, Riverside County, California, under the Section 22 Planning Assistance to States program, the completion of cost sharing for the Lake Elsinore Outlet Channel Project, the initiation of a flood control reconnaissance study for the San Jacinto River, and the initiation of feasibility studies for flood control needs in the Murrieta Creek sub basin of, and a watershed management plan within, the Santa Margarita River watershed in Riverside and San Diego Counties, California; now, therefore,

BE IT RESOLVED by the Board of Supervisors of the Riverside County Flood Control and Water Conservation District in regular session assembled on February 18, 1997, that they support appropriations by Congress for fiscal year 1998 for the following projects:

U.S. Army Corps of Engineers:	
Construction—General—Santa Ana River Mainstem	$52,900,000
Construction—General—Santa Ana River at Norco Bluffs	1,500,000
Section 1135, Environmental Enhancement Projects—Lake Elsinore, Gunnerson Pond	2,100,000
Section 22, Planning Assistance to States—Murrieta Creek Floodplain Maintenance Plan	50,000
Section 205, Small Flood Control Projects—Lake Elsinore Outlet Channel, Federal Cost Share	2,000,000
Reconnaissance Study—Flood Control and Other Purposes—San Jacinto River	350,000
Feasibility Study—Flood Control—Murrieta CreekSub-basin, Santa Margarita River Basin	300,000
Feasibility Study—Watershed Management—Santa Margarita River Basin	300,000

BE IT FURTHER RESOLVED that the General Manager-Chief Engineer is directed to distribute certified copies of this resolution to the Secretary of the Army, Members of the House of Representatives Committee on Appropriations and Sub-Committee on Energy and Water Development, the Senate Committee on Appropriations and Sub-Committee on Energy and Water Development, and the District's Congressional Delegation—Senators Dianne Feinstein and Barbara Boxer, and Congressmen Ron Packard, Ken Calvert and Sonny Bono.

SANTA ANA RIVER—MAINSTEM

The Water Resources Development Act of 1986 (Public Law 99–662) authorized the Santa Ana River—All River project which includes improvements and various mitigation features as set forth in the Chief of Engineers' Report to the Secretary of the Army. The Boards of Supervisors of Orange, Riverside, and San Bernardino Counties continue to support this critical project as stated in past resolutions to Congress.

The Local Cooperation Agreement (LCA) was signed in December 1989 by the three local sponsors and the Army. The first of five construction contracts started on the Seven Oaks Dam feature in the Spring of 1990, with completion scheduled by the year 2000. Acquisition has been completed on enhancement lands near the mouth of the river channel and the local sponsors continue acquisition for other elements of the project. Significant construction has been completed on the lower Santa Ana River Channel, Oak Street Drain, the Mill Creek Levee and San Timoteo Creek.

We support the President's recommendation to appropriate $52.9 million for the Santa Ana Mainstem construction and urge the Committee to approve the funds in the fiscal year 1998 appropriations.

SANTA ANA RIVER AT NORCO BLUFFS

The Santa Ana River passes along the northerly border of the city of Norco which is situated on a bluff that forms the southerly bank of the river. The bluff varies in height from 46 to 96 feet above the streambed. The floods of January and February 1969 caused flow impingement on the river bank which undermined the toe of the slope, causing bank sloughing. Although 50 to 60 feet of the bluff retreated to the south, no improvements were lost but the threat to improvements from future river actions became apparent. The floods of 1978 and 1980 impinged further, causing another 30 to 40 feet of bluff retreat, and the loss of a single family residence.

Section 101 (b)(4) of the Water Resources Development Act of 1996 provides for the authorization of the project, based on a Chief's Report dated December 23, 1996 that recommends the project for construction.

We are requesting Congress, through the Committee, to appropriate $1,500,000 in fiscal year 1998 to provide sufficient Federal funding to initiate construction in fiscal year 1998 on the Santa Ana River at Norco Bluffs project. The Riverside County Flood Control and Water Conservation District is fully prepared to meet its cost sharing obligation.

SANTA MARGARITA WATERSHED

The Santa Margarita Watershed lies in the south and northwesterly areas of Riverside and San Diego Counties, respectively. Murrieta Creek passes through the cities of Murrieta and Temecula in Riverside County, then combines with Temecula Creek to form the Santa Margarita River which flows into San Diego County, through the Camp Pendleton Marine Base, and into the Pacific Ocean.

Murrieta and Temecula experienced severe flood damage in January 1993, estimated in excess of ten million dollars, from Murrieta Creek overflow. Camp Pendleton also suffered extensive flood damage to facilities and aircraft due to overflow of the Santa Margarita River.

The requested Feasibility Study is needed to define and scope alternatives and develop a recommended watershed plan. The feasibility effort will address watershed management, including flood control, environmental restoration, water conservation and supply, recreation, and related purposes.

We request the Committee to approve $300,000 in fiscal year 1998 appropriations as is included in the Administration's Budget to undertake a Feasibility Study on the Santa Margarita Watershed.

MURRIETA CREEK

Feasibility Study

In January of 1993, due to dramatic winter storms, Murrieta Creek overflowed its banks and caused 10 million dollars in damages in the cities of Murrieta and Temecula. Prior to that time, and continuing today, a coalition of local citizens, community leaders, environmentalists, and developers have worked with the District to identify solutions to the flood problem.

This $300,000 in requested funding is needed to pursue a Feasibility Study for flood control along Murrieta Creek.

Section 22, Planning Assistance to States

The District is also seeking the Corps' assistance in the continued development of a flood plain maintenance plan for Murrieta Creek, under the Section 22, Planning Assistance to the States authority. The plan, which currently involves the Corps of Engineers working cooperatively with the District and regulatory agencies, will provide an agreed upon plan for creek maintenance to assure maximum flood protection within the limitations of the existing flood control system and the riparian environment.

We request the Committee to approve a fiscal year 1998 appropriation of $50,000 under the authority of Section 22, Planning Assistance to the States, in order to complete work on the flood plain maintenance plan.

GUNNERSON POND

In 1995, the Corps of Engineers, Los Angeles District, began an investigation under Section 1135 to evaluate the possibility of a wetlands restoration project at Gunnerson Pond. The site is located north of the city of Lake Elsinore, at

Gunnerson Pond, adjacent to and downstream of the Corps-built Lake Elsinore Outlet Channel, a Section 205 project.

The proposed modification of the outlet channel would allow flood water from Lake Elsinore and discharge from a nearby wastewater treatment plant to flow into Gunnerson Pond, creating a permanent wetland in that area. The purpose of this modification would be to enhance and develop waterfowl habitat, endangered species habitat, emergent wetlands vegetation, and riparian vegetation. The proposed project would significantly expand and enhance existing wetland and riparian areas along the Temescal Creek flood plain.

The Corps Headquarters approved the Preliminary Restoration Plan in August 1996 and the Project Modification Report which will provide final definition of the project is in progress.

We request the Committee to approve $2,100,000 in fiscal year 1998 appropriations to initiate plans and specifications and acquisition of critical wetlands and riparian area for the Gunnerson Pond project under the authority of Section 1135, within available funds.

LAKE ELSINORE

The Lake Elsinore flood control project was funded and constructed under the Section 205 Small Flood Control Projects authority. In order to bring the project costs back to 50 percent federal/50 percent local, Section 306 of the Water Resources Development Act of 1996 directed the Secretary to revise the project cooperation agreement to increase federal costs to $7,500,000.

In accordance with Section 306 (WRDA 96), we are requesting the Committee approve $2,000,000 in fiscal year 1998 appropriations for the Lake Elsinore project.

SAN JACINTO RIVER

The San Jacinto River watershed encompasses approximately 730 square miles, that drains into Lake Elsinore in western Riverside County. The river originates in the San Jacinto Mountains and passes through the cities of San Jacinto, Perris, Canyon Lake and Lake Elsinore. The only major flood control structure on the river are levees in the city of San Jacinto built by the Corps of Engineers in the early 1960's. In the 30 mile reach of the river between Lake Elsinore and the city of San Jacinto, only minor channelization exists and the river is characterized by expansive overflow areas. Flooding by the river has caused major damage to agricultural areas and has rendered Interstate 215 and several local arterial transportation routes impassable. The river is an important resource that provides water supply, wildlife habitat, drainage and recreation values to the region.

The District is requesting that the Corps of Engineers conduct a reconnaissance study of the San Jacinto River between the city of San Jacinto and the city of Lake Elsinore to investigate whether there is a federal interest in flood control, environmental enhancement, water conservation and supply, recreation and related purposes.

Because of the size of the study area and the large scope of the study issues, we request the Committee to approve $350,000 in fiscal year 1998 appropriations to undertake a Reconnaissance Study on the San Jacinto River.

PREPARED STATEMENT OF W. BEN WICKE, PRESIDENT, ELSINORE VALLEY MUNICIPAL WATER DISTRICT

Mr. Chairman, as President of the Board of Directors of Elsinore Valley Municipal Water District, Lake Elsinore, California, I appreciate the opportunity to provide the Appropriations Committee with information regarding the Temescal Valley Project. The Temescal Valley Project is a public works water project which is being sponsored by Elsinore Valley Municipal Water District to develop and manage local water resources and to improve the economy of western Riverside County and southern California.

The importance of this project as we plan for the next century cannot be overstated. It will ensure the ability of the District to meet the growing water requirements of an expanding population in southern California while preserving the existing water resources on which agriculture has relied for over a century. The project has been conceived in a manner which will keep impacts to the environment to an absolute minimum. Approximately 6,000 acres of citrus are under production in this area. Much of the crop is exported to trading partners in the Pacific Rim, which has a positive effect on the balance of trade with these countries.

The Elsinore Valley Municipal Water District's Temescal Valley Project was funded $4.7 million in the 1997 Federal budget and has been allocated $2.0 million, including the Treasury Department's portion for 1998. Design for the initial phases of the project is complete and it is anticipated that construction will start in the third quarter of 1997.

In accordance with the funding and allocation projects agreed to by the NWRA Committee, it is requested that support be given for $2 million, including both the Bureau of Reclamation and Treasury shares for the fiscal year 1998 budget. This will allow Elsinore Valley Municipal Water District to continue the Temescal Valley construction through budget year 1998.

PREPARED STATEMENT OF DONALD R. KENDALL, PH.D., P.E., GENERAL MANAGER, CALLEGUAS MUNICIPAL WATER DISTRICT

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to submit this written statement regarding the U.S. Bureau of Reclamation appropriations for fiscal year 1998. Calleguas Municipal Water District is requesting $2 million in the Bureau's appropriations under the authorization of Title XVI of Public Law 102–575 and the specific project authorization (Public Law 104–266) for the Calleguas Municipal Water District water recycling project.

CALLEGUAS MUNICIPAL WATER DISTRICT

The District was formed in 1953 by a popular vote of its residents. The District is located in Ventura County and its service area is approximately 350 square miles. Communities within the District service area include: Oxnard, Camarillo, Thousand Oaks, Simi Valley, Moorpark, and Port Hueneme. The District is governed by a five-member elected Board of Directors. The District is a member agency of The Metropolitan Water District of Southern California (Metropolitan). The District imports from Metropolitan about 100,000 acre-feet annually from the State Water Project (Bay-Delta) supplies.

WATER SUPPLY NEEDS

The District's service area is very dependent on imported water from northern California. Rapid population growth and urban development is expected to increase the need for an additional 50,000 acre-feet of imported water by the year 2020, if recycled water supplies are not developed. In the context of the CALFED Bay-Delta Program, it is imperative that alternative local supplies (recycled water) be developed to reduce the need for imported water.

PROGRAM DESCRIPTION

The District proposes to implement a regional water reuse and recycling program. The principal objectives of the proposed program are to:

—Increase the reliability of water supplied to water purveyors within the District's service area.

—Assist water purveyors and regulators in achieving regional solutions to meeting wastewater discharge requirements (Calleguas Creek Watershed Study).

—Provide the facilities necessary to achieve long-term salt balance in the region.

The project as envisioned is, in fact, made up of several water recycling projects which include wastewater reclamation and groundwater recovery projects which will use reverse osmosis (RO) technology for demineralization. The treatment facilities will be connected by a Brine Disposal Pipeline designed to collect the concentrated effluent from the various demineralization facilities which are planned. A map of the preliminary facilities is shown in Figure 1.

The source of water for the wastewater reclamation project are some eight wastewater treatment plants located throughout the District's service area.

The source water for the RO treatment plants will be local brackish groundwater high in total dissolved solids (TDS). Most of the area is underlain by two aquifer systems and generally the upper aquifer system is high in TDS as a result of over extraction, the concentration effects of agricultural use, and discharges from the local publicly owned treatment works (POTW) that percolate to the upper aquifer system. The product water from the RO treatment plants will be blended with the local groundwater to meet drinking water standards or with imported water obtained by Calleguas from the Metropolitan Water District of Southern California.

The water which would be developed through these programs will provide a wide range of beneficial potable and non-potable uses and will substantially reduce the region's demand for additional imported water supplies. Table 1 summarizes each

of the projects in terms of project costs and yield. Figure 1 presents the location of the proposed recycled water projects. The time frame considered for project implementation extends through the year 2020. These projects include:

CALLEGUAS WATER RECYCLING PROGRAM

Wastewater reclamation.—Simi Valley Wastewater Reclamation Project; Camarillo Wastewater Reclamation Project; Oxnard Wastewater Reclamation Project/Seawater Intrusion Barrier Project; and Moorpark Recycled Water Project.

Groundwater recovery.—South Las Posas Basin Desalter; and Thousand Oaks Blending Project.

Regional brine disposal line.—Calleguas Creek Wastewater Watershed Management Issues; and Calleguas Creek Watershed Management "Net Environmental" Benefit.

TABLE 1.—CALLEGUAS MUNICIPAL WATER DISTRICT SUMMARY OF WATER RECYCLING PROJECTS, YIELD AND CAPITAL COSTS

Project name/phase	Project code	Project yield (AFY)	Estimated project capital costs
Wastewater Reclamation:			
Simi Valley Wastewater Reclamation Project:			
Phase I	RW.01.01	250	$1,500,000
Phase II	RW.01.02	3,250	15,000,000
Phase III	RW.01.03	1,500	8,500,000
Subtotal		5,000	25,000,000
Conejo Diversion Project (Hill Canyon Wastewater Reclamation Project):			
Phase I	RW.02.01	6,000	16,500,000
Phase II	RW.02.02	8,000	9,500,000
Subtotal		14,000	26,000,000
Camarillo Wastewater Reclamation Project:			
Phase I	RW.03.01	1,710	1,200,000
Phase II	RW.03.02	1,130	3,000,000
Subtotal		2,840	4,200,000
Oxnard Wastewater Reclamation Project:			
Phase I	RW.04.01	5,000	45,000,000
Phase II	RW.04.02	5,000	10,000,000
Phase III	RW.04.03	10,000	5,000,000
Subtotal		20,000	60,000,000
Oak Park/North Ranch Wastewater Reclamation System Expansion: Phase II.	RW.05.02	750	1,750,000
Moorpark Wastewater Reclamation Project:			
Phase I	RW.06.01	757	3,000,000
Phase II	RW.06.02	953	
Subtotal		1,710	3,000,000
Total Wastewater Reclamation		44,300	119,950,000
Brackish Groundwater Recovery Project:			
South Las Posas Brackish Groundwater Recovery Project	GW.01.01	5,258	11,500,000
West Simi Valley Brackish Groundwater Recovery Project	GW.02.01	3,382	7,100,000

TABLE 1.—CALLEGUAS MUNICIPAL WATER DISTRICT SUMMARY OF WATER RECYCLING PROJECTS, YIELD AND CAPITAL COSTS—Continued

Project name/phase	Project code	Project yield (AFY)	Estimated project capital costs
Thousand Oaks Brackish Groundwater Recovery Project	GW.03.01	900	300,000
Total Brackish Groundwater Recovery Projects		9,540	18,900,000
Regional Brine Disposal:			
Regional Brine Disposal Pipeline:			
Phase I	BD.01.01		18,250,000
Phase II	BD.01.02		4,250,000
Total Regional Brine Disposal Pipeline			22,500,000
Program Total		55,840	161,350,000

PROGRAM BENEFITS

The Program will provide the following benefits:

Enhanced Reliability and Economic Vitality.—By enhancing and preserving the local sources of supply, the project will provide an increased measure of water supply reliability in the event of curtailment of imported water deliveries due to drought or earthquake. This reliability will ensure adequate supplies for thousands of area families and that the region will continue to meet the water needs of various industries. Moreover, the project will guarantee a long-term water supply for agricultural operations in the region. Agricultural activities in this region account for a considerable portion of Ventura County's total annual economy valued at $4 billion.

Resource Conservation.—Groundwater replenishment of the various aquifer systems underlying the Calleguas' service area will alleviate the prevailing overdraft condition and will also aide in the mitigation and prevention of further seawater intrusion.

Increased Level of Independence.—Since the early 1960's, much of urbanized Ventura County has become exceedingly reliant upon imported State water deliveries. The program will assist the region in maximizing beneficial use of local water resources thereby decreasing the region's precarious dependence on unpredictable, imported water deliveries.

Cost Avoidance.—Presently, the California Regional Water Quality Control Board, Los Angeles Region, is evaluating whether to require the City of Oxnard to expand its ocean outfall facility. If expansion is required, it is estimated that the cost incurred by the city would be on the order of $50 million. Implementation of the Oxnard Wastewater Reclamation project and others will reduce the amount of effluent being discharged to the Pacific Ocean. The reduction of the volume of effluent being discharged through the ocean outfall will free-up ocean outfall capacity which may be used for regional brine disposal.

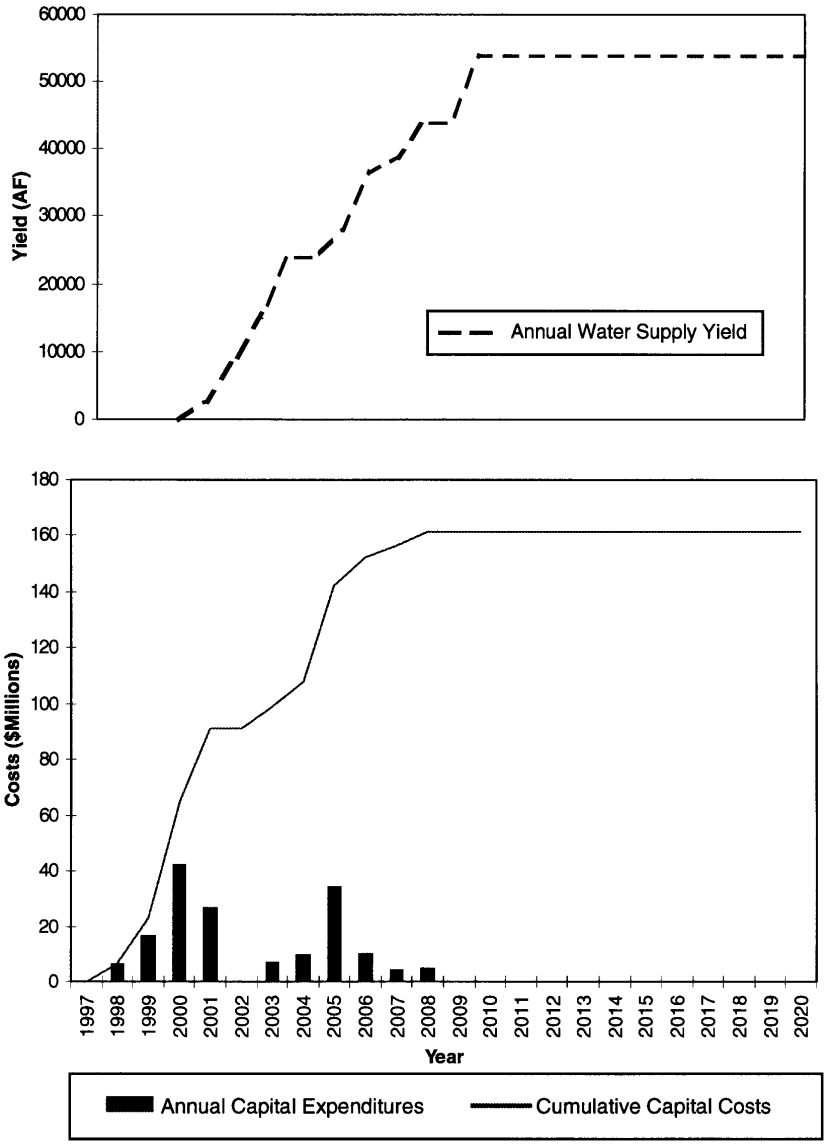
Delta Protection.—Moreover, development of the project could potentially benefit biological resources in the Sacramento/San Joaquin Delta region due to reduced demands for imported State water. To the degree that reclaimed water would be utilized to supplant imported deliveries, an equivalent amount of water could remain in the Delta to aid in sustaining sensitive species and habitat.

PROGRAM PHASING

The proposed recycled water program will comprise of several water reuse projects, several of which will be implemented in phases. The capital costs of the proposed program is estimated at $161.35 million (see Table 1). It is anticipated that all or most of the projects will be implemented by the year 2010. The annual water supply yield of the proposed program is shown on the graph below and cumulative capital expenditures and the program annual water supply yield.

Several of the projects such as Phase I of the Simi Valley Reclamation Project the Oak Park/North Ranch Wastewater Reclaimed Water System Expansion, and others are in the advance stages of implementation. For those projects, feasibility studies and NEPA/CEQA Compliance documentation have been completed and can, there-

fore, be implemented in 1998. The remainder of the projects will require additional studies and NEPA/CEQA Compliance documentation prior to implementation.



PROGRAM FINANCING PLAN

The potential funding sources which have been identified to finance the implementation of the proposed water recycling program included: $20 million USBR Grant; $20 million Proposition 204 Water Recycling Loan; Recycled Water Sales—Wholesale; and Metropolitan Water District of Southern California Local Projects Program Rebate.

The following table provides a summary of the program economics with the $20 million USBR Grant and the $20 million Proposition 204 Water Recycling Loan.

Financial Feasibility of Recycled Water Program

[With USBR Grant and Proposition 204 Loan]

Program funding using USBR grant and proposition 204 loan:	
Project Capital costs	$161,350,000
Less USBR grant	($20,000,000)
Less proposition 204 water recycling loan	($20,000,000)
Project Capital costs less grants and loans	$121,350,000
Project life cycle period (years)	20
Capital recovery rate (percent)	7.0
Annualized Capital cost	$11,454,227

Funding source	Amount	Rate, percent	Terms, years	Annual debt service
Proposition 204 water recycling loan repayment funding:				
Proposition 204 water recycling loan	$20,000,000	3.50	20	$1,480,000

Debt service:	
Annualized Capital costs	$11,454,227
Proposition 204 water recycling loan	$1,480,000
Total debt service	$12,934,227
Total annual program costs:	
Total annual debt service	$12,934,227
Annual operation and maintenance costs	$3,500,000
Total annual program costs	$16,434,227
Other revenue source:	
Recycled water sales (80 percent of potable water rate—$515) (per acre-foot)	$412
Metropolitan local projects program rebate (per acre-foot)	$250
Revenue/program cost analysis:	
Average annual water sales (period between 1997 through 2020) (acre-feet per year)	25,000
Annual revenue from water sales (per year)	$10,300,000
Annual revenue from Metropolitan LPP rebates (per year)	$6,250,000
Annual program costs (debt plus O&M costs) (per year)	($16,434,227)
Annual revenue/(deficit) (per year)	$115,774

NEED FOR FEDERAL FUNDING

As demonstrated in the previous section, the viability of the program is dependent on the ability of the District to secure USBR and Proposition 204 project funding assistance.

Without USBR and Proposition 204 project funding assistance, there is a demonstrable funding shortfall and negative cash flow of over $2 million per year. Therefore, the economic viability of the water recycling program is contingent on federal funding assistance

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PREPARED STATEMENT OF ANTHONY C. VOLANTE, PRESIDENT, BOARD OF DIRECTORS, PORT HUENEME WATER AGENCY

Chairman and members of the Subcommittee, the Port Hueneme Water Agency (Agency) was formed by the City of Port Hueneme and the Channel Islands Beach Community Services District in July of 1994 as a Joint Powers Agency, governed under the laws of the State of California. The Agency wishes to solicit the Subcommittee's support for our request of $2.0 million in cooperative funding from the United States Bureau of Reclamation for a Brackish Water Reclamation Demonstration Facility (BWRDF) during Federal fiscal year 1998.

Project Summary

The Agency was formed to plan, coordinate, develop, finance, construct and operate a BWRDF and related water distribution pipeline network for its member agencies: City of Port Hueneme (COPH), Channel Islands Beach Community Services District (CIBCSD), Naval Construction Battalion Center (NCBC)—Port Hueneme, and Naval Air Weapons Stations (NAWS)—Point Mugu. All of these agencies are located along the southwestern coast of Ventura County and currently utilize local groundwater and/or groundwater imported by the United Water Conservation District (UWCD) from an inland recharge area for the Oxnard Plain Basin. The Basin is in an overdraft condition which has also induced seawater intrusion. The total dissolved solids level of these water sources is normally greater than 1000 mg/L.

To provide high quality water, the Agency is implementing a Water Quality Improvement Program (WQIP). The WQIP involves demineralization of the imported groundwater which will be used conjunctively with imported State Project Water delivered by the Calleguas Municipal Water District (CMWD), a member agency of the Metropolitan Water District of Southern California (MWD). The Agency has annexed to both CMWD and MWD. Local groundwater pumping along the coast would be eliminated and total groundwater extractions will be reduced.

The BWRDF is the cornerstone of the program to improve water quality and reliability, reduce groundwater extractions and seawater intrusion in the Oxnard Plain, and provide a reliable long-term water supply for our four member agencies. The BWRDF will not only provide high quality water, it will also provide a full-scale demonstration of side-by-side operation of the three most promising brackish water desalination technologies which are reverse osmosis, nanofiltration, and electrodialysis reversal. The BWRDF will provide a realistic comparison of the desalination technologies which can then be utilized by water purveyors across the country to determine which technology best suites their specific needs.

In accordance with Section 1605 of Public Law 102–575 (Reclamation, Wastewater and Groundwater Study and Facilities Act), the Agency and the United States Bureau of Reclamation (USBR) have executed Cooperative Agreement No. 1425–6–FC–30–00850 (Agreement) on 19 September, 1996. This authorization allows USBR to provide cooperative funding of $3.7 million. To date, the Agency has requested and received appropriations of $1.0 million in fiscal year 1996 and $1.0 million in fiscal year 1997. For fiscal year 1998, the Agency would like to request the continued support of the USBR for this innovative program by requesting the remaining $1.7 million provided for under the Cooperative Agreement. In addition, $0.3 million is requested to allow ongoing USBR support, including a feasibility study of using desalination concentrate for wetlands enhancement. Accordingly, the Agency solicits the continued support of the Subcommittee for our request of $2.0 million for fiscal year 1998.

Project Background

Currently, the COPH, CIBCSD, NCBC, and NAWS utilize brackish groundwater from the Oxnard Plain Groundwater Basin, which is listed in California Department of Water Resources Bulletin 118 as a critically overdrafted basin and is under active basin management by the Fox Canyon Groundwater Management Agency. The groundwater used by these agencies is extracted locally from deep aquifer wells increasingly subject to seawater intrusion along the coast, or delivered from upper aquifer wells located inland by the UWCD. Both groundwater sources are deemed brackish, in that they have a total dissolved solids (TDS) content of greater than 1000 mg/l and a hardness in excess of 500 mg/l. By comparison, water quality in the Washington, D.C. urban area averages 217 mg/l, TDS and 126 mg/l in hardness.

The Agency was formed to secure a safe, reliable, high quality, environmentally sound and economical water supply for its member agencies. Prior to the formation of the Agency, increasing overdraft of the local groundwater basin, seawater intrusion, poor water quality and aging infrastructure had prompted each of the aforementioned participants to independently pursue water supply and quality improvement projects.

Facility Description

The Agency's project involves the construction of a 3.0 million gallon per day (mgd) sub-regional water treatment plant, the BWRDF, and various transmission pipelines to deliver a blend of desalinated local brackish groundwater and a limited amount of imported State Project Water. The primary source of local brackish groundwater is highly mineralized. To treat this water, a combination of three most promising desalination technologies will be used. These technologies include reverse osmosis, nanofiltration, and electrodialysis reversal. State Water Project water will be blended with desalinated local groundwater through existing and proposed trans-

mission pipelines. To optimize the utilization of the water treatment facilities, the proposed plant's capacity is based on current minimum diurnal water demands of the project participants. Peak day and fire flow demands will be met by the State Water Project water deliveries.

When all the program elements are in place, the PHWA will use a mixture of one-third imported State Project Water and two-thirds desalinated local groundwater. This arrangement will allow the PHWA to maximize use of local resources while providing excellent water quality to its customers.

The construction and operation of the BWRDF will provide a unique opportunity for the Federal government to enter into an innovative Federal-State-Local partnership with California water agencies in order to obtain long-term economic and performance data from the operation of a full-scale, groundwater desalination treatment facility in Ventura County, California. To the best of our knowledge, there are no such full-scale facilities operating in the United States simultaneously using these desalination technologies

Proposed Wetlands Enhancement Feasibility Study

The BWRDF will be located near a coastal wetlands at Ormond Beach (Oxnard, California). The coastal wetlands at Ormond Beach has received significant public interest and is considered to be at risk by regional flood control considerations. The littoral system of the Ormond Beach area builds a sand barrier that separates the surf zone from inland portions of the beach, wetlands, and developed inland areas. Up until 1992, the Ventura County Flood Control District would periodically breach the sand barrier to drain the lagoon to maintain safe water levels in the discharge drains. Cessation of this action resulted in the expansion of the lagoon but also created a deep water condition in the flood control channels. Water levels in the Hueneme Drain, "J" Street Drain, and Oxnard Industrial Drain (OID) reached a maximum level of 7.2 feet in September 1994. At this water level, several adverse consequences occurred and included: the OID overtopped its banks and resulted in the flooding of adjacent properties; channels at this water level could not safely convey flood waters in the event of a heavy rainstorm and had potential to result in a severe flood hazard; soils became saturated and created unstable conditions for the nearby land uses; and bacteria and mosquitoes bred in the abundant warm water, causing a human health hazard.

One of the key issues to the enhancement of this wetlands resource appears to be providing an acceptable source of water to maintain water levels in the Ormond Beach lagoons. Accordingly, the PHWA would like to conduct a feasibility study to enhance the Ormond Beach wetlands. The study would evaluate the feasibility of using the BWRDF concentrate to maintain water levels in the wetlands as well as whether its composition would be toxic or inhibitory to the wetlands ecosystem.

The study would be conducted at the BWRDF site. Using holding tanks, researchers would simulate the ecosystems found in the Ormond Beach Lagoon and wetlands and would analyze the effects of the desalination concentrate. This study would provide valuable information concerning the toxicity of the concentrate on sensitive plant and animal species without harming or disrupting the lagoon or the wetland's sensitive ecosystems. The study would also address the hydrology and hydrodynamics of the wetland and lagoon. Depending on the results of the study a demonstration project which utilizes the concentrate for wetlands enhancement could be implemented. The use of desalination concentrate for wetlands enhancement also has the potential to allow development of a regional flood control system which would be in harmony with this coastal resource.

The study would be conducted by PHWA, United States Bureau of Reclamation, and National Biological Survey. Funding for the study is authorized under Section 1605 of Public Law 102–575 (Reclamation Wastewater and Groundwater Study and Facilities Act).

Project Benefits

Implementation of this innovative program is expected to provide significant benefits to over 50,000 people including NCBC and NAWS. Benefits will include improved water quality, an increase in economic development and job creation resulting from the construction of the BWRDF, and obtaining a long term, safe reliable and environmentally sustainable high quality water supply which meets current and proposed water quality drinking standards under the Safe Drinking Water Act Amendments. Water quality to the Agency's customers will be greatly improved through the construction of the BWRDF to treat brackish local groundwater supplies supplemented by the imported State Project Water from CMWD and MWD.

Long-term water supply reliability for the Agency's customers and the Port Hueneme Subregion will be improved by access to both demineralized groundwater from

local sources and imported State Project Water. The delivery of imported State Water Project water will also allow the Agency's members to reduce groundwater extractions from coastal wells threatened by seawater intrusion. Seawater intrusion will be minimized by relocating groundwater extractions from the coastal area to inland recharge areas.

Benefits accruing to the Agency's customers which result from the implementation of the Port Hueneme WQIP, including the BWRDF, include the following:

—elimination of reduction in the need for expensive and highly inefficient home water softening units, thereby reducing the need to desalinate wastewater effluent proposed for reclamation in the future.
—reduction in the cost of purchasing bottled water and/or household reverse osmosis units.
—reduction in the costs of repairs and replacement of plumbing, plumbing fixtures and water using appliances.
—reduction in the cost of soap and cleaning products for those water customers who do not provide home water softening.
—avoidance of potential penalties associated with the staged reductions in groundwater pumping allocations imposed by the Fox Canyon Groundwater Management Agency.
—avoidance of additional water treatment costs imposed by Federal and State Regulatory Agencies.
—enhancement of an important wetlands resource.

Project Progress

The Agency has made significant progress with the WQIP. A joint NEPA/CEQA Program Environmental Impact Report was finalized and certified by the Agency's Board of Directors on 22 May, 1996. The design of the BWRDF and pipeline network was completed, competitive bids were received, and public works contracts have been awarded. Total capital costs of the project (originally estimated at $13.8 million) are currently $2.0 million under budget. Construction of the BWRDF has been initiated and it is anticipated that demineralized groundwater from the BWRDF will be delivered to the Agency's customers by the end of February 1998.

We believe that the WQIP will be an indispensable resource in our community and will provide a unique opportunity to study brackish water desalination in California. Thank you for your consideration of our unique and widely beneficial program.

PREPARED STATEMENT OF EMERY POUNDSTONE, PRESIDENT, RECLAMATION DISTRICT NO. 108

Mr. Chairman and Members of the Subcommittee. Thank you for your past support of the District's efforts to develop economical fish protection through innovative behavior barrier technology at our Wilkins Slough Diversion on the Sacramento River. Reclamation District No. 108 is one of the largest diversion on the River and screening of the Wilkins Slough facility is a high priority for resource agencies.

In August 1996, the National Marine Fisheries Service (NMFS) and other resource agencies withdrew their support for further testing of these technologies by the District. The District agreed to proceed rapidly with a feasibility study, design and construction of a positive barrier fish screen.

The District is now on an accelerated schedule to complete design and construction of a $10 million positive barrier fish screen facility by the 1999 irrigation season. This schedule is mandated by the NMFS Biological Opinion. In order to meet this closely coordinated time schedule, it is critical that construction funds be available by the beginning of fiscal year 1998 (October 1997). We respectfully request an appropriation of $5,000,000 designated to complete this construction project at Reclamation District No. 108.

Additionally, the District requests that the Committee support adding an additional $3 million to the Anadromous Fish Screen Program from the Bureau of Reclamation general fund monies for fiscal year 1998 to enable the Bureau to fully fund priority screening projects including Reclamation District No. 108.

We greatly appreciate the support of the Committee.

PREPARED STATEMENT OF SIG SANCHEZ, CHAIR, BOARD OF DIRECTORS, SANTA CLARA VALLEY WATER DISTRICT

GUADALUPE RIVER PROJECT

Background

The Guadalupe River is one of the major waterways that flow through the highly developed area of San Jose, California. Historically, the river has flooded the downtown areas of San Jose and Alviso beyond local prevention capabilities. For example, estimated damages from a 1 percent flood that would inundate the urban center of San Jose is over $526 million. The Guadalupe River started to overflow its banks in April 1982 and January 1983 before the storms receded and avoided major damage. The Guadalupe River overbanked in February 1986, January 9, 1995, and March 10, 1995, causing damage to residences and businesses in the St. John and Pleasant Street areas of the downtown.

Project Synopsis

In 1971, the community requested the Corps reactivate its earlier study. Stage 1 started with the Plan of Study and was completed in 1973. The initial problem definition and alternative screening were completed in 1974. More detailed problem definition and alternative studies for the Guadalupe River were completed in 1978. The Stage 2 report was completed in 1980 for the combined Guadalupe River, Coyote Creek and Baylands, establishing the economic feasibility and federal interest in the Guadalupe River.

The Guadalupe River project received authorization for construction under the Water Resources Development Act of 1986; the final General Design Memorandum was completed in 1992; the local cooperative agreement was executed in March 1992; construction of the first phase of the project was completed in August 1994; construction of the second phase of the project was completed in August 1996.

In an effort to accelerate completion of this project, the local community through the Santa Clara Valley Water District has been providing a substantial technical and financial assistance since 1972. The local community has completed local projects within the Corps' project reach and reaches downstream of the Corps limits. More than $64 million in local funds has been spent on the planning, design, land purchases for, and construction of such improvements.

Fiscal Year 1997 Funding

The 1997 Budget includes $7.1 million to continue construction of the Guadalupe River Project. Contract 3 is scheduled to be advertised in April 1997 and construction completed in August 1998.

Fiscal Year 1998 Funding

Funding for the Guadalupe River project during 1998 in the amount of $19 million is necessary to complete project construction and provide critically needed flood protection in the City of San Jose from downtown north to the community of Alviso.

Recommendation

Based upon the present high flood risk and potential damage from the Guadalupe River, it is requested that the Committee support $19 million in the Administration's budget to complete construction of the Guadalupe River project in 1998.

COYOTE/BERRYESSA CREEK PROJECTS

Background

The Coyote and Berryessa Creeks investigation was authorized by Congress in 1941 under the Guadalupe River and Adjacent Streams authority. Coyote Creek is one of two major waterways that flow through the highly urbanized areas of San Jose and Milpitas within Santa Clara County, California. Berryessa Creek flows through a small portion of San Jose and the growing community of Milpitas. Historically, Coyote Creek flooded the north San Jose community of Alviso beyond local prevention capabilities. A 1 percent flood in the Berryessa area would result in damages of $52 million to the homes and industries of Milpitas and San Jose. The probability of a large flood occurring before implementation of flood prevention measures was quite high. A 2 percent flood has an 18 percent chance of occurring during a 10-year period, and a 1 percent flood has about a 10 percent chance of occurring during this same period. Based on the percent flood estimates, there is a strong potential that a damaging flood will occur in the near future.

In January 1983, floodwaters escaped from Berryessa Creek and caused damage to several homes and businesses. Coyote Creek overbanked in April 1982 and again in March 1983 causing damages amounting to several million dollars. Hundreds of

people were forced to evacuate their homes where floodwaters stood for many days. Flood damages were avoided in January, March 1995, and again in January 1997 due to the protection offered by project improvements made on the Coyote Creek.

Project Synopsis

In 1971, the community requested the Corps to reactivate its earlier Guadalupe River and Adjacent Streams Study which included Coyote Creek. The Plan of Study was completed in 1973. The first phase of work included initial problem definition and alternative screening and was completed in 1974. The second phase of work included more detailed problem definition and alternative studies and was completed in 1978. The third phase, study of freshwater flooding in the Baylands, (which included the lower reaches on Coyote Creek) was completed in 1979. The Stage 2 report could not establish the economic feasibility and federal interest in Coyote Creek. In light of flooding in 1982 and 1983, the Corps refocused its study on Coyote Creek to address the inadequate level of protection provided by unstable levees. Berryessa Creek originally was a Section 205 study but was combined with Coyote Creek when the project cost exceeded the limits of that program.

In an effort to accelerate the completion of this overall program, the local community through the Santa Clara Valley Water District (District) has provided a substantial amount of technical and financial assistance since 1972. Special planning studies have been completed by the District for inclusion into the Corps' studies. The Coyote/Berryessa Creek project received authorization for preconstruction, engineering and design under the Water Resources Development Act of 1986. The project was authorized for construction under the Water Resources Development Act of 1990. The Project Cooperation Agreement for Coyote Creek was executed in August 1994.

The severe flood problem and the ominous threat of future damages forced the local community to initiate a local project on Coyote Creek in anticipation of future federal participation. Over $30 million has been spent on the planning, design and construction of improvements on Coyote Creek to date, which are planned for augmentation of and incorporation into the federal project. The Chief of Engineer's February 1989 report contained $8.63 million Section 104 credit for flood control measures undertaken by the District from San Francisco Bay to Milpitas Sewage Treatment Plant. Congress authorized, in the Water Resources Development Act of 1988 (Public Law 100–676), $3 million in reimbursement to the District for construction of flood control measures upstream of the Milpitas Sewage Treatment Plant. The District has completed this work. A Section 215 agreement was executed with the Corps in December 1993 which provided an additional $3 million for the sponsor to design and construct approximately 7,000 feet of offset levees and overflow channel excavation along of Coyote Creek upstream of Highway 237 in the Cities of San Jose and Milpitas. The flood control improvements were completed in July 1996. The remaining project work consists of establishing over 20 acres of riparian mitigation plantings.

The Corps completed the Draft General Design Memorandum in November 1993 for Berryessa Creek which indicated an economically infeasible plan with a benefit/cost ratio of less than one. The District commented that a more environmentally protective project design is necessary to garner support of the local community; the District identified insufficient channel capacity existing downstream of the General Design Memorandum project limit at Calaveras Boulevard. Based on the Corps' and District's assessment, the Berryessa Creek downstream reach between Calaveras Boulevard and Lower Penitencia Creek does not have 1 percent capacity. Improvement of this downstream reach must be made prior to the upstream reaches identified in the General Design Memorandum to avoid induced flooding. Therefore, extension of the original General Design Memorandum project scope may be needed to include the downstream reach, which requires the preparation of a General Reevaluation Report.

Fiscal Year 1997 Funding

The 1997 Budget included $1.4 million to continue preconstruction engineering and design on Berryessa Creek and continue construction on Coyote Creek. The Corps awarded the Coyote Creek construction contract in September 1994, which was completed in July 1996. The Coyote Creek mitigation planting construction contract was awarded in April 1996.

Fiscal Year 1998 Funding

Construction funding for the Coyote/Berryessa Creek projects during 1998 in the amount of $1.0 million as contained in the Administration's budget will be required to complete mitigation planting construction of the Coyote Creek project.

Recommendation

Based on the present high flood risk and potential damage from Coyote and Berryessa Creeks, it is requested that the Committee support continued construction funding in the amount of $1.0 million as included in the Administration's budget to continue federal construction.

UPPER PENITENCIA CREEK PROJECT

Background

The Upper Penitencia Creek watershed is located in the northeast part of Santa Clara County, California, near the southern end of San Francisco Bay. Since 1978, the creek has flooded in 1980, 1982, 1983, 1986, and 1995. The January 9, 1995 event caused damage to a commercial nursery and deposited mud in a condominium complex and a business park.

The proposed project on Upper Penitencia Creek, from Coyote Creek confluence to Dorel Drive, will protect portions of the Cities of San Jose and Milpitas. The watershed is completely urbanized; undeveloped land is limited to a few scattered parcels still used for agriculture and the corridor along Upper Penitencia Creek. Based on the 1995 Reconnaissance Report, 4,300 buildings are located in the floodprone area, 1,900 of which will have water entering the first floor. The estimated damages from a 1 percent or 100-year flood is $121 million.

Study Synopsis

The National Resource Conservation Service under the authority of the Watershed Protection and Flood Prevention Act, Public Law 83–566, completed a study of the economic feasibility of constructing flood damage reduction facilities on Upper Penitencia Creek. However, the National Resource Conservation Service watershed plan has been stalled since 1990 by the U.S. Department of Agriculture because the benefits to agriculture are less than 20 percent of the total benefits of the project.

The Santa Clara Valley Water District requested that the Corps proceed with a reconnaissance study in April 1994 while the National Resource Conservation Service plan was on hold. Funds were appropriated by Congress for fiscal year 1995 and the Corps started the reconnaissance study in October 1994. The Reconnaissance Report was completed in July 1995, with the recommendation to proceed with the Feasibility Study Phase. The Feasibility Study is scheduled to be completed in September 1999.

Fiscal Year 1997 Funding

The Feasibility Study is scheduled to begin on Upper Penitencia Creek in fiscal year 1997 with funding in the amount of $241,000. The Feasibility Study Cost-Sharing Agreement is expected to be signed by the sponsor in April 1997. The study is scheduled to be completed in August 1998.

Fiscal Year 1998 Funding

Funding for the Upper Penitencia Creek project during fiscal year 1998 in the amount of $475,000 to continue the Feasibility Study is essential to provide needed flood protection to citizens in the Cities of San Jose and Milpitas.

Recommendation

Based upon the present high flood risk and potential damage from Upper Penitencia Creek, it is requested that the Committee support the administration's fiscal year 1997–98 budget of $475,000 for the feasibility study of the Upper Penitencia Creek Project.

SAN JOSE AREA WATER RECLAMATION AND REUSE PROGRAM

Background

The San Jose Area Water Reclamation and Reuse Program, also known as the South Bay Water Recycling Program, will allow the City of San Jose and its tributary agencies of the San Jose/Santa Clara Water Pollution Control Plant to protect endangered species habitats, meet receiving water quality standards and supplement Santa Clara County water supplies.

The Santa Clara Valley Water District (District) is participating with the City of San Jose in the development of the reclamation and reuse program. Towards that end, the District is assisting the City of San Jose in providing financial support and technical assistance for program planning, liaison with water retailers, design, construction, inspection, and other services for the Program. Design, construction, construction administration, and inspection for the Program's Transmission Pipeline and Milpitas 1A Pipeline are being performed by the District under contract to the

City of San Jose. Phase 1, now under construction, involves construction of nearly 60 miles of transmission and distribution pipelines, pump stations and reservoirs, and has an estimated capital cost of $140 million. It is anticipated that Phase 1 will begin operation in March 1998, and will deliver an estimated 9,000 acre-feet/year of nonpotable recycled water. The City of San Jose is the program sponsor for Phase 1.

In 1992, Public Law 102–575 authorized the Bureau of Reclamation to participate with the City of San Jose and the District in the planning, design, and construction of demonstration and permanent facilities to reclaim and reuse water in the San Jose metropolitan service area.

Fiscal Year 1997 Funding

Funding in the amount of $2,760,000 was approved in the fiscal year 1997 Budget for the San Jose Area Water Reclamation and Reuse Program to continue the construction effort.

Fiscal Year 1998 Funding

The Administration's fiscal year 1998 Budget includes $3 million to continue construction of the San Jose Area Water Reclamation and Reuse Program.

Recommendation

Based on the important water supply and environmental benefits to the area, it is requested that the committee support the Administration's proposed $3 million fiscal year 1998 Budget for the construction for the San Jose Area Water and Reuse Reclamation Program.

SAN FRANCISCO AREA WATER RECLAMATION STUDY

Background

The purpose of the San Francisco Area Water Reclamation Study, also known as the Central California Regional Water Recycling Project, is to develop a Regional Water Recycling Master Plan for maximizing local reuse of recycled water and identify regions in California outside the Bay Area that could use high-quality recycled water for such purposes as agricultural irrigation or salinity control. The master plan will identify sources of freshwater and what potential exchange could result to benefit environmental, urban, or industrial needs. This plan will also include preparation of a technical memorandum to CALFED to summarize recycled water projects for implementation into their Environmental Impact Report.

The feasibility study was completed in 1996. The master plan is expected to be completed in 3 years.

The Santa Clara Valley Water District is participating in the master plan and is providing financial, technical, and project management support along with other local water and wastewater agencies.

Fiscal Year 1997 Funding

Feasibility Study funding of the San Francisco Area Water Reclamation Study in fiscal year 1997 was $1,510,000.

Fiscal Year 1998 Funding

Funding in the amount of $375,000 is included in the Administration's fiscal year 1998 Budget for the San Francisco Area Water Reclamation Study to develop the water recycling master plan.

Recommendation

Based on the important water supply and wastewater discharge benefits to the region, it is requested that the committee support $375,000 included in the Administration fiscal year 1998 Budget for the San Francisco Area Water Reclamation Study.

CENTRAL VALLEY PROJECT OPERATIONS AND MAINTENANCE OF SAN LUIS UNIT JOINT USE FACILITIES

Background

The San Luis Unit of the Central Valley Project is located near Los Banos on the west side of the San Joaquin Valley in Fresno, Kings and Merced Counties. The San Luis Unit is an integral part of the Central Valley Project, delivering water and power supplies developed in the American River, Shasta and Trinity River Divisions to users located in the service area.

Certain facilities of the San Luis Unit are owned, operated and maintained jointly with the State of California. These Joint Use facilities consist of O'Neill Dam and

Forebay, San Luis Dam and Reservoir, San Luis Pumping-Generating Plant, Dos Amigos Pumping Plant, Los Banos and Little Panoche Reservoirs, and the San Luis Canal. These facilities are essential to the State Water Project's ability to serve numerous agricultural and municipal and industrial water users in the San Joaquin Valley and Southern California. Costs of the Joint Use facilities are funded 55 percent State and 45 percent Federal, under provisions of Federal-State Contract No. 14–06–200–9755, December 31, 1961.

Within the Central Valley Project, the Joint Use Facilities of the San Luis Unit are an important link to the San Felipe Division, which serves as the largest source of water imported into the Santa Clara Valley Water District (District) and the San Benito County Water District. All of the Central Valley Project water delivered through the San Felipe Division must be pumped through O'Neill Dam and Forebay and San Luis Dam and Reservoir.

Project Synopsis

For the past several years, there have been inadequate federal funds available to cover the pro rata federal share of Joint Use facility operation and maintenance costs. As of September 30, 1995, the federal government owed the State of California $9.9 million. As of September 30, 1996, the federal government would have owed the State of California $20.2 million, if the Santa Clara Valley Water District had not used the Contributed Funds Act to direct a $20 million advance payment of its Central Valley Project capital costs toward liquidation of this shortfall in operations and maintenance payments.

The Santa Clara Valley Water District is a contractor of both the Central Valley Project and the State Water Project. Along with other State Water Project contractors, the District shared a growing concern about finding a way to expediently resolve the issue of unreimbursed operations and maintenance expenses incurred by the State on behalf of the federal government. Such unreimbursed expenses are carried by the State without interest, and these unreimbursed expenses impair the cash flow and financial management of the State Water Project.

Fiscal Year 1997 Funding

In fiscal year 1997, approximately $6 million was appropriated for San Luis Joint Use facility operation and maintenance costs, an amount which is not sufficient to meet the total annual federal share of costs. It was anticipated that new agreements would be in place that would allow Central Valley Project contractors to collect funds directly for conveyance and conveyance pumping components of San Luis Joint Use operation and maintenance costs, and to pay such funds to the State of California. However, difficult cost allocation issues have so far prevented the direct funding agreements from being completed.

Fiscal Year 1998 Funding

The Administration has requested $6,709,000 to continue operation and maintenance of San Luis Joint Use facilities. This quantity is once again insufficient to meet the federal share of operation and maintenance costs for Joint Use facilities. Bureau of Reclamation staff confirmed that the fiscal year 1998 budget figure assumes that the necessary agreements with Central Valley Project contractors will be completed for direct funding of conveyance and conveyance pumping components. If the agreements are not completed, and if funds cannot be redirected from other Central Valley Project operations and maintenance activities, there will be a shortfall of approximately $3 million in payments to the State in fiscal year 1998.

Recommendation

The House and Senate Budget and Appropriations Committees should augment the Administration's request for $6,709,000 by an additional $3 million to continue operation and maintenance of the San Luis Unit Joint Use facilities. The Administration's budget proposal puts a financial risk on the cash flow and financial management of the State Water Project and its contractors.

Along with other State and federal contractors, it is the District's belief that the issue of outstanding obligations owed by the federal government to the State of California for operation and maintenance of the Joint Use facilities could significantly erode the cooperative relationship between the two projects and groups of contractors, if such obligations are allowed to accumulate or continue for any length of time. Maintaining a healthy and stable fiscal relationship with regard to these costs is a foundational issue which has the potential to affect the successful development of the long-term Bay-Delta solution through the CALFED process. It is especially important at this time, when successful implementation of the Bay-Delta Accord and the Central Valley Project Improvement Act, both important to Santa Clara County, depends on the two projects working well together.

CALFED BAY-DELTA PROGRAM

Background

In an average year, half of Santa Clara County's water supply is imported from the Bay-Delta watersheds through three water projects: the State Water Project, the federal Central Valley Project, and San Francisco's Hetch Hetchy project. In conjunction with locally-developed water, this water supply supports the 1.6 million residents of the county and the capitol of the high-tech industry. In average to wet years, there are enough water supplies to meet the county's long-term needs. In dry years, however, the county could face a water supply shortage of as much as 100,000 acre-feet per year, or roughly 20 percent of the expected demand. In addition to shortages due to hydrologic variations, the county's imported supplies have been reduced due to regulatory restrictions placed on the operation of the state and federal water projects.

There are also water quality problems associated with using Bay-Delta water as a source of drinking water supply. Organic materials and pollutants discharged into the Delta, together with salt water coming in from San Francisco Bay, have the potential to create disinfection-by-products that are carcinogenic.

Santa Clara County's imported supplies are also vulnerable to extended outages due to catastrophic failures such as major earthquakes and flooding. As demonstrated by the recent flooding in Central Valley, the levee systems can fail and the water quality at the water project intakes at the Delta can be degraded to such an extent that the projects cannot pump from the Delta.

Project Synopsis

The CALFED Bay-Delta Program is an unprecedented cooperative effort among federal, state and local agencies to restore the Bay-Delta. With input from urban, agricultural, environmental, fishing and business interests, and the general public, CALFED is developing a comprehensive, long-term plan that will address ecosystem and water management problems in the Bay-Delta.

Restoring the Bay-Delta ecosystem is important not only because of its significance as an environmental resource, but also because failing to do so will stall efforts to improve water supply reliability for millions of Californians and the state's $700 billion economy and job base.

Although the CALFED Bay-Delta Program is a long-range planning process, ecosystem restoration is an immediate priority because of the substantial lead time needed to produce ecological benefits. Species in the Bay-Delta continue to be proposed for listing under the Endangered Species Act (ESA). Recovery efforts cannot begin until adequate funding becomes available to implement the array of critical ecosystem restoration and water quality projects.

Fiscal Year 1997 Funding

Congress authorized $430 million in matching federal funds for the environmental restoration of California's Bay-Delta as part of the California Bay-Delta Environmental and Water Security Act (HR 4126). The authorization was contingent on passage of a state bond act providing for similar programs.

In November 1996, Californians passed Proposition 204, a $995 million bond measure by an overwhelming 63 percent of the vote. The measure includes roughly $600 million for various programs related to Bay-Delta restoration.

Fiscal Year 1998 Funding

President Clinton has requested $143 million in new federal spending in fiscal 1998 for ecosystem restoration in the Bay-Delta estuary. The request would provide the first installment of Bay-Delta funds authorized by Congress in late 1996.

Recommendation

The House and Senate Budget and Appropriations Committees fully appropriate the President's budget request for Bay-Delta through the Budget Resolution, 602(a) allocation. Because success of this program will rely on adaptive management, and because a number of agencies and interests will be involved in deciding how funds can best be spent, the money allocated under 602(a) should be placed in a trust fund, to be administered by the Bureau of Reclamation with decisions and expenditures made through CALFED.

PREPARED STATEMENT OF WILLIAM L. ZAUN, CHIEF ENGINEER, ORANGE COUNTY FLOOD CONTROL DISTRICT

Request

Mr. Chairman and Members, this statement is prepared on behalf of The Orange County Flood Control District and Orange County California to request your support for the appropriation of fiscal year 1998 funding requested by the U. S. Army Corps of Engineers for continued construction of the Santa Ana River Mainstem Project.

SANTA ANA RIVER MAINSTEM PROJECT

Status

The U. S. Army Corps of Engineers has constructed approximately 50 percent of the project. Of the major features, twenty (20) miles of the lower Santa Ana River Channel is complete with one three (3) mile reach remaining to be constructed and Seven Oaks Dam is about 50 percent complete.

Orange County has expended about $170 million to date toward its responsibilities in providing land and performing relocations in support of the Santa Ana River Mainstem Project.

At Prado Dam, Orange County is proceeding with pre-construction activities such as relocation of State Route 71.

Orange County Citizens experienced a reduction of their flood insurance rates due to the progress made on the Project.

Summary

Continued Federal appropriations are absolutely essential to the completion of the Santa Ana River Mainstem Project to provide adequate flood protection for the residents of Orange, Riverside and San Bernardino Counties. Pending completion of this important project these citizens remain vulnerable to flooding catastrophes and the same financial and emotional devastation experienced in Northern California and the Northwest this past winter.

OTHER PROJECTS

The Orange County Flood Control District also requests approval of appropriations requested by the U. S. Army Corps of Engineers to continue the studies on flood plain restoration and management of Aliso and San Juan Creeks.

SANTA ANA RIVER PROJECT INFORMATION

FLOOD POTENTIAL

Headwaters in San Bernardino Mountains, 75 miles to Pacific Ocean.

Drains 3,200 square miles in Orange, Riverside and San Bernardino Counties in Southern California.

Flows through Cities of Colton, Riverside, Norco, Anaheim, Santa Ana, Orange, Fountain Valley, Costa Mesa and Huntington Beach.

Floods in Orange County

1938, greatest flood of this century, flooded the entire northern half of Orange County. Almost all bridges destroyed including damages to agricultural land which is now urbanized.

1862, greatest flood on record, approximating the Corps Standard Project Flood.

Estimated Damage

Standard Project Flood would exceed capacity of the existing Prado Dam

LEVEES WOULD BE BREACHED: Flooding 110,000 acres from Anaheim to the ocean killing as many as 3,000 people and causing more than $15 billion in property damage.

MAJOR TRANSPORTATION CORRIDORS INTERRUPTED: San Diego, Garden Grove, Santa Ana, Costa Mesa and Orange Freeways. Railroad Stations and Track.

MAJOR PUBLIC FACILITIES WOULD BE INUNDATED: Hospitals, Shopping Centers, Colleges, Sanitation Plants, Stadiums, Disneyland, Knotts Berry Farm and Hotels.

MAJOR FEATURES

Lower Santa Ana River

ESTIMATED COST: $384 million

ESTIMATED COMPLETION: Year 2000

Improve 23 mile channel from Prado Dam to the Pacific Ocean
Restore/Enhance 92 acre (8-acre mitigation) wetlands
Acquire 1,123 acres of canyon lands to ensure safe releases from Prado Dam and provide open space habitat
Relocate 60 various utility lines and 15 oil wells/lines.
Modify 37 bridges
STATUS: 80 percent COMPLETE

Prado Dam

ESTIMATED COST: $472 million, construction is unscheduled
Raise the dam elevation from 566 feet to 594.4 feet (increase of 28.4 feet)
Increase reservoir area from 6,695 acres to 10,256 acres
Impoundment increase from 212,000 acre-feet to 362,000 acre-feet
Increase capacity of outlet gates from 9,200 cfs to 30,000 cfs
Acquire over 1,600 acres of property rights for reservoir expansion
Relocate or protect 30 various utility lines
Raise State Highway Route 71
STATUS: UNSCHEDULED

Seven Oaks Dam

ESTIMATED COST: $364 million
ESTIMATED COMPLETION: Year 1999
550-foot high, earth-rockfill dam, 2,980 feet long
Gross reservoir capacity of 145,600 acre-feet
Reduces peak inflow of 85,000 cfs to a peak outflow 7,000 cfs
Acquire about 4,00 acres of land in fee or easement
Relocate powerhouse, flume & transmission line, spreading basins, waterwells
STATUS: 55 percent COMPLETE

PREPARED STATMENT OF JERRY EAVES, CHAIRMAN, SUPERVISOR, FIFTH DISTRICT, COUNTY OF SAN BERNARDINO, CA

The Board of Supervisors of San Bernardino County, State of California, appreciates the opportunity to bring the following flood control and water conservation projects to your attention for consideration in the fiscal year 1997–1998 Federal Budget.

Corps of Engineers:	
Santa Ana River Mainstem—Construction of Seven Oaks Dam, San Timoteo Creek, and the Lower Santa Ana River	$52,900,000
San Antonio Creek—Feasibility study of flood control	180,000
Mission Zanja Creek—Construction of expanded inlet structure. (Funded through Continuing Authorities Program)	774,000
Bureau of Reclamation: San Sevaine Creek Water Project— Public Law 84–934 Small Watershed Project Loan Program	1,333,000

The Board once again wishes to express its deep appreciation for your past and present support of these priority programs in San Bernardino County and also Orange and Riverside Counties.

SANTA ANA RIVER MAINSTEM PROJECT

Project Description

The Santa Ana River Project includes seven interdependent features: Mill Creek Levee, Oak Street Drain, San Timoteo Creek, Lower Santa Ana River, Seven Oaks Dam, Prado Dam and Santiago Creek. Mill Creek Levee, Oak Street Drain, San Timoteo Creek Reach 1, and Reaches 1, 2, 3, 4, 5, 6, 7 and 10 of the Lower Santa Ana River are complete. Completion of all of the features will provide (a) the necessary flood protection within Orange, Riverside and San Bernardino Counties; (b) enhancement and preservation of marshlands and wetlands for endangered waterfowl, fish and wildlife species; (c) recreation amenities; and (d) flood plain management of the 30 miles of Santa Ana River between Seven Oaks Dam and Prado Dam. The Mainstem project is scheduled for completion by the year 2001.

San Bernardino County Features Status

Seven Oaks Dam.—Intake structure excavation, Abutment stripping and Outlet Works/Diversion Tunnel contract is complete. Embankment and Spillway construction contract was awarded in March 1994. Construction is progressing satisfactorily and is 53 percent complete as of January 1997.

Mill Creek Levee.—Project was completed in April 1992.

San Timoteo Creek.—San Timoteo Creek/Reach I construction was completed in September 1996. Reach II construction contract was awarded in September 1996 and scheduled for completion in September 1997.

Funding Required

To continue construction of the Mainstem Project in fiscal year 1997/98, the Corps of Engineers will require an additional $52,900,000 in federal funding along with cash contributions of $1,700,000 million, lands, and various services from local sponsor.

Project authorized.—Public Law 94–587, Section 109, Approved October 22, 1976 Public Law 99–662, Water Resources Development Act of 1986

Total project cost.—$1.4 billion—Includes $473 million local share.

President's budget fiscal year 1997/98.—$52,900,000.

Requested action.—Approval of $52,900,000 for Santa Ana River Mainstem, including Seven Oaks Dam and San Timoteo Creek projects in San Bernardino County.

SAN TIMOTEO CREEK

Project Description

The San Timoteo Creek is a major tributary to the Santa Ana River in the east San Bernardino Valley. At the downstream end of a large watershed of approximately 126 square miles, the existing creek flows through the cities of Redlands, Loma Linda, and San Bernardino before discharging into the Santa Ana River. The existing creek in all three cities has an earthen bottom and partially improved embankments reinforced with rail and wire revetments.

Major storm flows along the creek in 1938, 1961, 1965, 1969, and 1978 caused considerable damage to the creek itself as well as overtopping the banks and causing loss of life and severe property damage.

The Energy and Water Development Appropriations Act of 1988 authorized improvement of San Timoteo Creek as part of the Santa Ana River Mainstem Project. The improvements include the construction of approximately 5.5 miles of concrete lined channel from the Santa Ana River upstream through the Cities of San Bernardino, Loma Linda and Redlands plus the construction of debris retention facilities at the upstream end of the project in the form of in-channel sediment storage basins.

Project Status

The Corps of Engineers completed Reach I of this project which encompassed 0.7 mile from Interstate 10 downstream to the confluence with the Santa Ana River including replacement of Waterman Avenue bridge in September 1996. Reach II construction started in September 1996 and is scheduled for completion in September 1997. Reach II includes replacement of Redlands Boulevard bridge and 1.9 miles of channel. Plans and Specifications for Reach III are in progress.

Estimated Project Schedule

Completion of Feasibility Study	Fiscal year 1988/89.
Preparation of Final Special Report	Fiscal year 1989/90.
Basis for Design Report	Fiscal year 1990/91–1991/92.
Right-of-Way Acquisition	June 1992–June 1997.
Engineering Design, Plan, and Specifications	May 1992–June 1997.
Construction Start (approximate)	September 1994.
Project Completion (approximate)	October 1999.

Estimated Project Cost

The total estimated project cost is $58,000,000 with the federal participating cost at 75 percent or $43,500,000 and the local participating cost at 25 percent or $14,500,000.

Requested action.—Approval of continued funding for the San Timoteo Creek Project.

SAN ANTONIO CREEK CHANNEL FEASIBILITY STUDY

Project History.—The San Antonio Creek Channel was constructed by the Corps of Engineers in the 1950's. Its watershed encompasses an area of approx. 89 sq. miles at the western border of San Bernardino County. Most of this channel is concrete lined or improved with rock slope protection. Approximately one-third of the

primarily undeveloped watershed is tributary to the San Antonio Dam, which is located about 11 mi. downstream from the headwaters of the watershed.

Current Status.—Based on recent hydrologic and hydraulic studies, the existing channel was deemed inadequate to convey 100 year peak flows. Upon review of data developed by the reconnaissance study, it appears that the existing channel may be sufficient to convey 100 year flows if a re-operation plan of the existing San Antonio Dam is developed and implemented.

Purpose.—The completed reconnaissance study will enable the Corps of Engineers to proceed with the feasibility phase study, which will develop a re-operation plan for San Antonio Dam, and establish guidelines for future use and capacity of the existing system, thereby eliminating the necessity for costly channel improvements.

Funding Required.—To initiate a feasibility study, the Corps of Engineers will require $178,000 in Federal funding in fiscal year 1998.

Requested action.—Approval of $178,000 for the San Antonio Creek Channel Feasiblity Study.

MISSION ZANJA PROJECT

Project History.—The reconnaissance study, completed in February 1994, considered the past work performed by the Corps of Engineers and expanded that effort to include the entire upper and lower ends of the drainage area not previously studied. Two features, the Expanded Inlet Plan and the Reservoir Canyon Detention Plan were recommended for further study. The Expanded Inlet Plan is the only feature recommended for construction at this time.

Current Status.—The Expanded Inlet option will convey flows more efficiently than existing conditions. Construction of this portion would increase the level of flood protection in downtown Redlands. Plans and specifications for the Expanded Inlet option are currently being prepared.

Requested Action.—Support of construction of Expanded Inlet Option through Section 205 Continuing Authorities Program.

SEVEN OAKS DAM WATER CONSERVATION PROJECT

Project Purpose.—To research and establish water conservation alternatives at the Seven Oaks Dam facility.

Current Status.—The feasibility phase of this study started in November 1993 and will be completed in July of 1997. Funding and feasibly studies are complete.

Requested Action.—No further funding required

SAN SEVAINE CREEK WATER PROJECT

Project Description

The San Sevaine Creek Water Project, as proposed, will provide environmental enhancements, water conservation and flood control facilities in the western portion of the San Bernardino Valley.

A 132-acre area is being set aside to protect a sensitive plant community, wetlands and wildlife enhancement. In addition, several water conservation basins will percolate an estimated 25,000 acre feet of storm water runoff per year into the Chino Groundwater Basin benefiting agricultural, municipal and industrial water users in the Valley. This project will create water storage and conservation facilities which will provide approximately 5400 acre-feet of combined storage and reduce the need for purchasing imported water.

Project Status

On January 25, 1996, Bureau of Reclamation officials advised, "The County has met all requirements under the current Small Reclamation Projects Act (SRPA) program. The project is technically qualified for funding as proposed." The loan application was signed by Commissioner Eluid Martinez on April 11, 1996 and approved by the Secretary of Interior, Bruce Babbitt, on May 9, 1996, starting the 60-day congressional approval process. As of July 25, 1996 the San Sevaine project cleared the 60 day calendar for review by congress as required under the Small Reclamation Loan Act. On December 17, 1996, the project Repayment Agreement was approved by the Board of Supervisors of the County of San Bernardino and approved on January 8, 1997, by Robert Johnson, Regional Director of the Bureau of Reclamation.

Although some levee, channel and interim basin work has already been completed at various locations on this major water project, federal assistance in the form of a Small Project Loan is urgently needed to allow for the construction of major improvements that will provide a fully integrated and functional project. Without these funds, it will be many decades before local interests can accrue sufficient funds to continue this vital project.

The California Water Commission has consistently since the late 1980's supported the construction of this project.

Federal authority.—Public Law 84–984, as amended 1956.

B of R grant contribution.—Approximately $27.4 million.

B of R loan contribution.—Approximately $19.2 million.

Total B of R project (not additive).—Approximately $52.9 million.

Total local contribution.—$33.7 million.

The County has been coordinating with the National Water Resources Agency (NWRA) in a cooperative effort to obtain funding for $1,333,000 in fiscal year 1998, which coincides with the President's Budget. The project is very large and the Bureau has indicated an 8 year construction schedule with project completion by year 2004. We appreciate the continuing support provided by the Bureau of Reclamation for this project.

Requested action.—Approval of $1,333,000 for fiscal year 1998, to be in line with Bureau total project build out by year 2004.

PREPARED STATEMENT OF MIKE RIPPEY, CHAIRMAN, BOARD OF SUPERVISORS, NAPA RIVER FLOOD CONTROL PROJECT

BACKGROUND

The Napa River is the main waterway into which all tributaries of the Napa Valley flow. The river reaches its highest flow and the main point of concentration of stormwater in the heart of the downtown city of Napa. The original town of Napa was established at the head of the navigable Napa River channel in 1848 as its only port for transportation and commerce until the railroad extended from Benicia to Napa in 1902.

The project is located in the city and county of Napa, California. The population in the City of Napa, approximately 67,000 in 1994, is expected to exceed 77,000 by the year 2000. Excluding public facilities, the present value of damageable property within the project floodplain is over $500 million. The Napa River Basin, comprising 426 square miles, ranging from tidal marshes to mountainous terrain, is subject to severe winter storms and frequent flooding. In the lower reaches of the river, flood conditions are aggravated by high tides and local runoff. Floods in the Napa area have occurred in 1955, 1958, 1963, 1965, 1986 (flood of record) and 1995.

Over the years, the community has expressed a strong desire for increased flood management. Since 1862, twenty-seven major floods have struck the Valley region, exacting a heavy toll in loss of life and property. The flood of 1986, for example, killed three people and caused more than $100 million in damage. The town of Napa is particularly vulnerable to floods: during a typical 100-year flood, more than 325,000 gallons flow through downtown per second, with the potential of inundating 2 million square feet of businesses and offices and nearly 3,000 homes.

Flood damage in downtown Napa has recurred in January 1993, March 1995, and January 1997, resulting in disaster declarations and substantial federal assistance and economic losses, reaffirming the urgent need to implement the cost-effective project. In March 1995 and January of 1997 additional flood disasters occurred and FEMA is reviewing the damage claims.

Damages throughout Napa County totaled about $85 million from the January and March 1995 floods. The floods resulted in 227 businesses and 843 residences damaged county-wide. Almost all of the damages from the 1986 and 1995 floods within the project area would have been prevented by the project.

Locally developed flood measures currently in place provide minimal protection and include levees, floodwalls, pump stations, upstream reservoirs, restrictive flood plain management ordinances, and designated flood evacuation zones. Vast areas of flood plain are restricted to agricultural and open space uses, precluding development which would be damaged by flooding. These local measures still leave most of the city of Napa vulnerable to frequent damaging floods. Flood control projects have been authorized by Congress since 1944 but due to their expense, lack of public consensus on the design, and concern about: environmental impacts, a project has never been realized. The most recent Corps of Engineers project plan consisted of a deepening and channelization project. In mid-1995, federal and state resource agencies reviewed the plan and gave notice to the Corps that this plan had significant regulatory hurdles to face.

COALITION PLAN—PROJECT SYNOPSIS

To address project design issues, the Napa County Flood Control and Water Conservation District (District) initiated a new project planning approach. They formed

the Napa River Community Coalition (Coalition), which included representatives of all project stakeholders. Using a consensus design approach with technical assistance from public resource managers, volunteer private professionals, the Coalition's consultants, and the Corps, a substantially modified flood control/management project (the Coalition Plan) was developed over a record period of six months. The goal of the Coalition Plan is to provide flood protection for the community while maintaining a "living river". This living river strategy replaces the former project and now entails floodplain acquisition and restoration, restoration of a geomorphically stable river channel, replacement of bridges, and environmentally sensitive stream bank treatment in the urban reaches of the City of Napa.

The Coalition Plan, which provides 100-year protection, is currently undergoing fine tuning with hydraulic modeling and other detailed work. The Corps' Supplemental General Design Memorandum (SGDM) and Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/EIR) for the Coalition Plan are scheduled to be released by the Corps for public comment in October of 1997. Land acquisition is planned through 1998 when the County plans for project construction to begin.

The Coalition Plan now being detailed in the Corps' SGDM provides land acquisition for river widening, Oxbow dry bypass, utility relocations and pumping plants, levee and floodwall construction, bridge improvements, as well as recreational trails, open space and environmental mitigation. The benefits this plan will provide include reducing or eliminating property damage, cleanup costs, community disruption, and the need for flood insurance. The plan will protect access to businesses and public services and create opportunities for recreation and downtown development, boosting year-round tourism. As a critical feature, the plan will improve water quality, create urban wetlands, and enhance wildlife habitats.

The plan would protect over 5,000 people from the 100 year flood event on the Napa River and its main connecting tributary, the Napa Creek, and the project has a positive benefit-to-cost ratio under the Corps' calculation. The Napa County Flood Control District is prepared to meet its local cost-sharing responsibilities for the project. A county-wide sales tax, along with a number of other funding options, is currently being pursued for the local share.

PROJECT SYNOPSIS

Fiscal Year 1997 Funding

The 1997 budget included $700,000 to revise the key SGDM and SEIS/EIR documents

Necessary Fiscal Year 1998 Funding

Funding for the Napa River Project during 1998 in the amount of $1,600,000 is needed to complete the final SGDM and SEIS/EIR and initiate plans and specifications, and to finalize the Project Cooperation Agreement (PCA) to begin construction of the project in fiscal year 1999.

Recommendation

Based on continuing high flood risk and severe damage from the Napa River, we request that the Committee support $1,600,000 to complete preconstruction, engineering and design of the Napa River Project.

PROJECT ELEMENTS

March 1997

The current plan, which is the result of the Coalition effort in concert with the Corps of Engineers, includes land acquisition for river widening, levee and flood wall construction, recreational facilities and open space and an oxbow dry bypass, among other items. The Corps is now working to incorporate the refined design into its key preconstruction documents. After the design documents are approved and the construction drawings prepared, the PCA will be negotiated and signed by the local sponsors and the Corps. Once real estate is acquired and construction funds are appropriated, construction will begin. The county is working to ensure that construction of the project will start in fiscal year 1999.

REDESIGNED PROJECT ELEMENTS BY LOCATION

The following redesigned project elements were developed by the Community Coalition and are listed here by location along the river. These elements are being incorporated into the redesigned Corps plan.

Kennedy Park

Wetlands will be created from Kennedy Park to the Oxbow. In addition, new recreational trails will extend continuously from the park through downtown Napa and north to Trancas Street.

Maxwell Bridge

A causeway section will be added to Maxwell Bridge. The natural flood plain will be restored and extended alongside the river underneath its new causeway.

Riverside Drive

Riverside Drive and the existing homes will remain intact. Previous plans called for the elimination of the road and 10 homes in order to avoid toxic clean-up along the east bank. A setback flood wall and recreational trail will be constructed with stable riverbanks.

Oil Company Road

Toxins in the Oil Company Road area will be removed.

Napa Waterfront

The waterfront from 3rd Street to the Hatt Building represents the only section of the project area where flood flow constrictions still remain. Conceptual design alternatives for this area will be developed. These designs must adhere to guidelines for a living river and to urban riverfront design standards. To the extent possible the designs will retain historical properties, remove the construction of the river, require no further deepening of the channel, minimize property acquisition, and require only limited use of vertical bank treatments.

Oxbow Dry

A dry bypass will provide open space in the downtown area and will retain the Oxbow as the primary waterway—fulfilling the objectives of the living river. During floods, the bypass will divert excess water away from the Oxbow.

PREPARED STATEMENT OF DONALD BRANSFORD, PRESIDENT, GLENN-COLUSA IRRIGATION DISTRICT

Mr. Chairman, Members of the Subcommittee, my name is Don Bransford. I am a rice farmer from Colusa County, California, and I am President of the Board of Directors of the Glenn-Colusa Irrigation District (GCID or District).

I appreciate the opportunity to provide you this statement regarding the federal funding priorities for GCID. I also appreciate the Subcommittee's past efforts to address our concerns, particularly the efforts of Congressman Vic Fazio, who represents our area.

GCID is the largest and one of the oldest diverters of water from the Sacramento River. The District delivers water to approximately 1,200 families who have about 141,000 acres of land in cultivation in Glenn and Colusa Counties. More than $270,000,000 in agricultural products are produced annually on GCID farms, helping to sustain an estimated 12,000 jobs in the region.

The District is also the sole source of surface water for three wildlife refuges—the Sacramento, Delevan and Colusa National Wildlife Refuges—that cover some 20,000 acres in the heart of the Sacramento Valley. Winter water supplied by GCID to thousands of acres of rice land also provides a rich oasis for migrating waterfowl.

The District is firmly committed to obtaining lasting protection of the winter-run salmon and other fishery resources at the Hamilton City Pump Station. Over the last several years, the District has invested over $3,000,000 in the construction of an interim flat-plate fish screen and other improvements to provide immediate protection to the endangered winter-run chinook salmon and other fish species. Since the installation of the flat-plate fish screen, there have been no fish taken at the GCID pumping plant. We are operating under a zero take limit for the winter-run chinook salmon, and constant monitoring has revealed no evidence of take having occurred at the plant.

While the new flat-plate screen, installed in late 1993, has been very effective, it is only an interim solution. Permanent protection is needed. Without a new permanent fish screen, the District will continue to face restrictions which result in pumping only 75 percent of the District's full water entitlement.

And, unlike some other projects, the availability of non-federal cost-sharing is not in doubt at GCID. The District has set aside $5,500,000 to date to help pay for the non-federal, 25 percent cost-share of a new permanent fish screen. The State of California has also recently appropriated an additional $500,000 to complete the envi-

ronmental review and development of a mitigation and monitoring plan. And, California voters have approved almost a billion dollars for projects like the GCID fish screen to help restore fisheries throughout the Central Valley. We are ready and able to cost-share any federal funds provided by this Committee.

On behalf of GCID, the fishery and all of those whose economic fate is tied to the recovery of the winter-run salmon, I respectfully request that you provide $4,000,000 for the Bureau of Reclamation in fiscal year 1997 to advance work on a permanent new fish screen at the Hamilton City Pump Station. This is the same amount included in the president's budget request. Specifically, an allocation of $4,000,000 is needed to allow construction to get underway in earnest.

Without such a commitment of funds, construction will be delayed. That will mean less water for the farmers and a less speedy recovery of the fishery. Failure to provide the funds necessary to advance the project represents a lose-lose proposition. It is bad for the farmers and it is bad for the fishery resource. Again, I urge you to provide an allocation of $4,000,000 to keep the project moving forward on an optimum schedule.

For the U.S. Army Corps of Engineers, GCID requests the Committee's support of an appropriation of $600,000 to the Corps of Engineers to continue work on the Sacramento River gradient or riffle restoration project. This is also the same amount that was included in the budget request. Construction of the gradient restoration project will stabilize the river elevation and improve the effectiveness of the new fish screen built at the District's pumping plant. In addition, the gradient facility is critical to ensuring the long-term viability of the new fish screen structure under changing river conditions.

Finally, Mr. Chairman, GCID requests that the Subcommittee earmark, from within the funds made available for refuge water supply, $500,000 to initiate design and feasibility studies to construct a siphon across Stony Creek and upgrade these GCID canal facilities necessary to make refuge deliveries. This project will enable the District to make year-round water deliveries to the three National Wildlife Refuges in the GCID service territory (the Sacramento, Delevan and Colusa National Wildlife Refuges) as well as make Stony Creek available for possible fish restoration activities. It will also allow water deliveries during the winter for crop diversification and to expand the acreage flooded for rice straw decomposition and wildlife habitat. This project is the most efficient and least costly way to provide expanded water service to the Sacramento Refuge complex, as required by the Central Valley Project Improvement Act.

Mr. Chairman, Members of the Subcommittee, on behalf of GCID, I would like to express my appreciation for your past support of our efforts to address the fish bypass problem at the Hamilton City Pump Station, and I respectfully request your support once again in the Fiscal Year 1998 Energy and Water Development Appropriations Act.

Thank you for your consideration.

PREPARED STATEMENT OF VIRGINIA GREBBIEN, GENERAL MANAGER, WEST BASIN MUNICIPAL WATER DISTRICT AND CENTRAL BASIN MUNICIPAL WATER DISTRICT

Mr. Chairman and members of the Subcommittee, thank you for providing me an opportunity to testify today on the U.S. Bureau of Reclamation appropriations for fiscal year 1998.

The West Basin Municipal Water District (WBMWD) supports the $31 million in the Bureau's fiscal year 1998 appropriation under the authorization of Title XVI of Public Law 102–575. Section 1613 of Title XVI, Los Angeles Area Water Reclamation and Reuse Project, provides that the Secretary is authorized to participate with WBMWD and the City of Los Angeles in the design and construction of water recycling facilities to produce 120,000 acre-feet of recycled water annually. The federal share shall not exceed 25 percent of the total construction costs (and no federal funds are to be provided for operation and maintenance). West Basin is seeking to increase the current appropriations from $10 million to $17.5 million for the Los Angeles Area Water Reclamation and Reuse Project.

Section 1614 of Title XVI, San Gabriel Basin Demonstration Project, similarly authorizes the Secretary to participate with the Metropolitan Water District of Southern California (MWD), Main San Gabriel Water Quality Authority, Central Basin Municipal Water District (CBMWD), and the Upper San Gabriel Valley Municipal Water District in a comprehensive conjunctive use program. CBMWD is constructing the Rio Hondo In-lieu Recycling Project component of the San Gabriel Demonstration Project. CBMWD supports $5.235 million in the Bureau of Reclamation's budget for Section 1614, the San Gabriel Demonstration Project.

The West Basin Municipal Water District and Central Basin Municipal Water District today have under construction the largest water recycling and wastewater reuse program in the United States. Total design and construction expenditures to date have exceeded $280 million (1991–1996), and during the next three years, the Districts expect construction expenditures to be an additional $70 million. The program will create approximately 2,500 construction jobs and over 5,000 indirect jobs.

WEST BASIN MUNICIPAL WATER DISTRICT AND CENTRAL BASIN MUNICIPAL WATER DISTRICT

The West Basin Municipal Water District and Central Basin Municipal Water District are located in the coastal plain of Los Angeles County. Both Districts are member agencies of the Metropolitan Water District of Southern California and receive two-thirds of their annual supply from MWD's imported water delivery system. The Districts' other sources of supply are our local groundwater and recycled water. Both Districts were established by popular elections under the California Special Districts Act for Municipal Water Districts (WBMWD was organized in 1947 and CBMWD in 1952). Forty-one cities are within the boundaries of the Districts, with an overall population of approximately 2.4 million. The Districts wholesale water to approximately 50 separate retail water utilities.

The two Districts are governed by separately elected five-member Boards of Directors, but share the same modest administrative and engineering staff (40 full-time employees). Most of the Districts' water management programs and water recycling projects are jointly administered to save costs. All the Districts' water facilities are privately operated through contractual agreements.

LOS ANGELES AREA WATER RECLAMATION AND REUSE PROJECT

WBMWD and CBMWD currently have under design and construction the largest water recycling program in the United States. These water recycling projects, in combination with the Districts' water conservation, groundwater management, and desalination projects will reduce their need for imported water from Northern California by over 100,000 acre-feet annually. These projects have multiple benefits to Southern California:

—Provide a more dependable water supply and reduce the likelihood of water rationing;
—Lower the cost of water to industry (e.g., refineries, aerospace firms, textile manufacturing) and thereby provide incentives to not relocate;
—Environmental protection—reduce by 25 percent the wastewater discharged into Santa Monica Bay (an EPA designated National Estuary);
—Create new jobs, both construction related and permanent, to operate and implement the Districts projects and programs; and
—By reducing the use of imported water from Northern California (including the Mono Basin and the Sacramento Delta watersheds), the Districts will assist in the "statewide water solution" and significantly help in protecting the fish and wildlife resources in northern California.

The Districts' water recycling projects have received widespread public support from environmental, community, and business groups. The water recycling projects are also an excellent example of local governmental cooperation. The City of Los Angeles, which owns and operates the Hyperion wastewater treatment plant (the largest plant on the West Coast), has contracted with WBMWD for the supply of the wastewater in return for 25,000 acre-feet of the treated recycled water for use within the city boundaries. In addition, the CBMWD has contracts with the Los Angeles County Sanitation Districts for treated recycled water from two of its water reclamation plants to distribute over 20,000 acre-feet annually through 70 miles of pipeline distribution systems. MWD has agreed to be a financial partner in these projects by contributing $250/acre-foot for each acre-foot of recycled water produced and reused (a financial commitment of over $250 million). To ensure the financial feasibility of these recycling projects, the Districts have imposed annual property owner water standby charges which provide approximately $13 million each year for the payment of the water revenue bond debt service until the recycled water sales are sufficient to pay for annual operation and maintenance and bond debt service.

The Administration has committed to $50 million of the total $280 million construction costs of the West Basin Water Recycling Program. To date the Bureau of Reclamation has provided $32.5 million in grants to WBMWD

[Dollars in millions]

Fiscal Year	WBMWD	BOR grants
1994	$75	$5.0
1995	90	6.9
1996	15	8.1
1997	20	12.5
1998	30	17.5
Total	230	50
Grand Total	280	

Currently, the West Basin Water Recycling Project is serving recycled water to 83 customers. Phase I of the West Basin Water Recycling Project began delivering water to customers in February 1995 (approximately 20,000 AF). Phase II is under design, and construction will be initiated in the summer of 1997. Phase II construction will be completed in late 1998 and will increase the use to 35,000 AFY by distributing recycled water to all the major refineries in Los Angeles County (Chevron, Mobil, ARCO, Unocal, Texaco). Additional expansions of the water reclamation plant would be constructed in phases allowing for the ultimate capacity of approximately 100 million gallons per day or 100,000 AF (Year 2010).

RIO HONDO IN-LIEU RECYCLING PROJECT

The Central Basin Municipal Water District's Water Recycling Program is comprised of both the Century and Rio Hondo Recycled Water Projects. Governor Wilson awarded the Central Basin Municipal Water District the "Environmental and Economic Balance Achievement Award" in August 1995 for the water recycling projects.

The Century Recycled Water Project was completed in 1993 and consists of approximately 35 miles of recycled water distribution pipeline, serving the cities of Downey, Bellflower, Paramount, Lakewood, Norwalk, Compton, South Gate, and Santa Fe Springs. Currently, recycled water from the Los Angeles County Sanitation District's 37.5 mgd (42,000 AFY) Los Coyotes Water Reclamation Plant is being delivered to over 128 sites, with a combined annual demand of 4,000 AFY. Ultimately, recycled water will be delivered to over 200 customer sites, with an annual demand of approximately 6,800 AFY. The total construction cost of this project was $23.5 million.

The Rio Hondo In-lieu Recycling Project is under construction. To date (March 1996), approximately $25 million has been expended on pipelines and a pumping station located in Pico Rivera. When construction is completed in 2000, the Rio Hondo In-lieu Recycling Project will consist of over 46 miles of distribution pipelines, three storage tanks, two pump stations, and will interconnect with the Century and West Basin Water Recycling Distribution Systems. Recycled water from the Sanitation District's 100 mgd San Jose Creek Water Reclamation Plant, located north of Whittier, will be delivered to the cities of Whittier, Pico Rivera, Santa Fe Springs, Commerce, Montebello, Vernon, Huntington Park, Bell, Bell Gardens, and Cudahy. Approximately 13,000 AFY of recycled water will be delivered to over 170 industrial and landscape users. The total construction costs for the Rio Hondo Project distribution pipelines, storage tanks, and pump stations is estimated at $64 million.

To date, the Bureau of Reclamation has contributed $6 million in Federal grants to date for the construction costs, and the District has expended to date approximately $48 million. The planned funding contributions are listed below:

RIO HONDO WATER RECYCLING PROJECT

[Dollars in millions]

Fiscal Year	CBMWD	BOR grants
1994	$16	$2.0
1995	10	3.0
1996	5	.5
1997	5	.5
1998	5	1.0

RIO HONDO WATER RECYCLING PROJECT—Continued

[Dollars in millions]

Fiscal Year	CBMWD	BOR grants
1999	7	5.5
2000	6	3.5
Total	54	16
Grand Total	70	

SUMMARY/CLOSING REMARKS

West Basin Municipal Water District and Central Basin Municipal Water District have initiated construction of the largest water recycling program in the United States. These "state-of-the-art" recycling projects will ultimately recycle over 120,000 acre-feet annually, enough drinking water for 500,000 people. These water projects, more than any other in California, will provide more benefits to more people and the environment: conserve precious imported water from Northern California and Mono Lake, reduce wastewater pollution to Santa Monica Bay, and create jobs in south-central Los Angeles. In California, it is unique that a water project has received such a broad array of public support, including the Los Angeles County Taxpayers Association, Congress of Senior Citizens, Mono Lake Committee, Sierra Club, Heal the Bay, and many other environmental interest groups, and business and chamber groups, and elected officials from throughout the state. But the most important factor is the creation of local jobs in south-central Los Angeles communities and providing industry with a new, dependable and economical water supply. Mr. Chairman, thank you again for the opportunity to testify today.

PREPARED STATEMENT OF MAUREEN A. STAPLETON, GENERAL MANAGER, SAN DIEGO COUNTY WATER AUTHORITY

Mr. Chairman and members of the Subcommittee, thank you for providing me an opportunity to testify on the Bureau of Reclamation's Title XVI grant program. The San Diego County Water Authority, through its 23 member agencies, provides imported water to almost 97 percent of San Diego County's 2.7 million residents. The Water Authority and its member agencies are engaged in a long-term effort to reduce regional reliance on limited imported water supplies. Water reclamation is critical to the success of that effort.

Title XVI of Public Law 102–575, adopted in 1992 and amended in 1996, authorizes the Bureau of Reclamation, to financially support water reclamation projects in California and other western states. Three of the projects authorized to receive Title XVI funding are located in the Water Authority's service area: the San Diego Area Water Reclamation Program, the North San Diego County Area Water Recycling Project and the Mission Basin Brackish Groundwater Desalting Demonstration Project. Ultimately, these three recycling programs will provide enough water to meet more than 12 percent of the San Diego region's long-term water needs.

The San Diego Area Water Reclamation Program, a multi-agency program consisting of facilities to reuse and recycle water in the San Diego metropolitan service area, is one of five regional reclamation programs authorized under Public Law 102–575. When completed, the system of inter-connected reclamation facilities will serve an area of more than 700 square miles and add more than 70,000 acre-feet annually to the San Diego region's local water supply. The North San Diego County Area Water Recycling Project and Mission Basin Brackish Groundwater Desalter Demonstration Project, both authorized in 1996 under Public Law 104–266, will provide almost 20,000 acre-feet of reclaimed water to customers in northern coastal and inland San Diego County.

Federal support for these three projects makes sense on several levels. Water reclamation allows a precious natural resource that is in increasingly short supply to be reused, thus reducing the need to develop new water sources. From a public policy perspective, recycling projects are less expensive and have far fewer environmental impacts than alternative water supply projects, such as surface reservoirs and dams. Additionally, recycling projects reduce the need for water from the environmentally sensitive Sacramento-San Joaquin River Delta.

Implementation of these three recycling projects will also provide benefits to the national economy. San Diego County is home to a number of medical research institutes, bio-technology firms, telecommunications companies and electronics manufacturers. These high technology firms require a reliable water supply to operate. The County's vibrant agricultural sector contributes more than a billion dollars annually to the national economy. To prosper economically, San Diego County needs the type of adequate and reliable water supply that water reclamation helps to make possible. Federal participation in the San Diego Area Water Reclamation Program, North San Diego County Area Water Recycling Project and Mission Basin Brackish Groundwater Desalting Demonstration Project will, by reducing the potential for future water shortages, protect the region's economy, environment and quality of life.

The President's fiscal year 1998 Budget contains $13 million for the San Diego Area Water Reclamation Program. Because Title XVI was only recently amended to include the North San Diego County Area and Mission Basin projects, the projects are not included in the President's fiscal year 1998 Budget. On behalf of the agencies participating in these three important and innovative reclamation projects, I urge the Committee to approve the President's proposed fiscal year 1998 funding allocation for the San Diego Area Water Reclamation Program and appropriate an additional $4.9 million for the North San Diego County Area Water Recycling Project and $1.5 million for the Mission Basin Brackish Groundwater Desalter Demonstration Project.

PREPARED STATEMENT OF SUSAN HAMMER, MAYOR, CITY OF SAN JOSE, CA

Summary

In 1992, Congress authorized the U.S. Bureau of Reclamation to fund up to 25 percent of the San Jose Area Water Reclamation and Reuse Project. Now known as South Bay Water Recycling, the project is nearing completion at a construction cost of $140 million. The Administration has proposed funding of $3 million in fiscal year 1998, bringing federal participation to $9 million, or about one-fourth of the total amount authorized. Funding in fiscal year 1998 of $10 million is requested to more closely match project expenditures. It is further recommended that the Bureau establish an interregional Office of Water Recycling with authority to budget and administer all Title XVI funds to ensure appropriate support in all regions. In addition, a portion of Clean Water Act and Safe Drinking Water Act funds currently administered by the EPA should be earmarked for water recycling programs such as South Bay Water Recycling which enhance water supply and reduce the environmental impact of wastewater discharge.

Chairman McDade, Members of the Committee: South Bay Water Recycling is a $140 million regional project to recycle up to 20 million gallons per day of highly treated wastewater for nonpotable reuse in California's Silicon Valley. The project will protect local wetlands by reducing wastewater treatment plant discharges to the south end of San Francisco Bay in compliance with the federal endangered species act. By augmenting the water supply and preserving sewer capacity, the project will also help maintain the global competitiveness of the region's high tech industries, which are essential to the regional and national economy. In order to meet the mandatory compliance schedule set by the EPA and the California Water Resources Control Board, area cities and agencies will spend an estimated $140 million for construction of the project which is scheduled to be completed by the end of the 1998 federal fiscal year.

Congress has authorized the U.S. Bureau of Reclamation to pay $35 million, or 25 percent of project costs. The larger local share of the project has been funded through sewer fees, which have increased by more than 50 percent over the past five years. Appropriation of $3 million in fiscal year 1998 (as recommended by the Administration) will bring the cumulative federal share to date to about $9 million, significantly less than the amount authorized.

Everywhere in the arid West, cities and towns face the dual problems of delivering enough water to their communities, while at the same time minimizing the impacts of wastewater discharge on the environment. For many of them, water recycling is the answer. Recycled water is "smart" water because it reduces the flow of wastewater to the environment by making more water available for reuse. Congress showed wisdom and foresight in authorizing support for water recycling, and this committee in particular is to be commended for providing initial funding for these projects through Title XVI of the 1992 Reclamation Projects Authorization Act.

But the Bureau of Reclamation has not been able to provide funding adequate to carry out the intent of Congress to promote and develop water reuse. In Northern California, especially, little funding has been available through the Mid-Pacific Re-

gion budget to support our local project. This may be due in part to federal participation in the "Cal-Fed" agreement for improvement of the San Francisco Bay/Sacramento River Delta environment, which will benefit communities throughout the state. But without adequate federal support, there is a real risk that the scope of the recycled water program will be limited, diminishing our ability to maintain wastewater treatment capacity and further burdening the local water supply. This could jeopardize the future of the four thousand high tech companies which employ nearly one quarter of a million people in the Santa Clara Valley area.

One solution would be to increase funding to SBWR to $10 million in fiscal year 1998. This increase would also begin to equalize support for recycling between the Mid-Pacific and Lower Colorado Regions, the two regions with the largest number of recycling projects. To ensure continued support at appropriate levels, the Bureau should establish an inter-regional Office of Water Recycling, with authority to budget and administer all Title XVI funds to ensure appropriate support in all regions.

In addition, Congress should direct agencies to apply a portion of their funding to water recycling when such projects clearly promote those agencies' goals and objectives. For example, the Environmental Protection Agency currently administers approximately $2 billion in grants and loans provided in support of Clean Water Act and the Safe Drinking Water Act programs. If some portion of this money could be added to the Bureau budget, or if a percentage of these funds could be made available for water recycling projects, we could leverage local funds to promote the most intelligent use of our water resources, and point the way for other urban areas throughout the country.

It takes ten gallons of water to make one computer chip; some semiconductor manufacturers in our area use more than a million gallons of water per day. Discharge of this industrial wastewater is stringently regulated, while at the other end of the pipe, these same companies faced mandatory water rationing during the last drought. By giving water a second chance, reducing pollution and reusing a valuable commodity, South Bay Water Recycling will support Silicon Valley businesses, and help to keep our country competitive globally in the aggressive high-tech industries of the future. The future will no doubt show what cities like San Jose have already come to understand—namely that the distinctions between water, wastewater and recycled water are arbitrary at best, and may in fact be a barrier to our effective implementation of responsible water management.

We appreciate the support this committee has shown during the past three years while we were developing the San Jose Area Water Reclamation and Reuse Program. Now that we are under construction, it is more important than ever that Congress provide appropriate funding to this project.

PREPARED STATEMENT OF ROBERT W. BEIN, CHAIRMAN, WATER RESOURCES EDUCATION COMMITTEE, ORANGE COUNTY BUSINESS COUNCIL

On behalf of the Water Resources Education Committee of the Orange County Business Council of Orange County, California, I am writing to ask for your careful consideration of three special projects in the Orange County area provided for in the fiscal year 1998 budget.

Of prime importance to the people of southern California is the Orange County Reclamation (OCR) Project sponsored by the Orange County Water District. This project was 1 of 18 projects authorized by the federal government last year and is recognized by the Bureau of Reclamation to be 1 of 3 projects now on line to begin the all important environmental analysis phase. This project is unique to your committee in that only a 10 percent federal share is requested, the remaining 90 percent will be provided at the local level.

This project will ultimately provide 250,000 acre feet per year of potable water for southern California which would otherwise need to be imported from the north, or the Colorado River, and which is presently wasted into the Pacific Ocean. Besides being environmentally sound, this project would significantly enhance the southern California areas ability to be more self-sustaining in regards to our water resources. The project is not only cost effective, but it is also so innovative both technically and environmentally, that it will almost certainly serve as a model for other states and regions suffering from water shortage crisis.

In addition, we urge your support for the continued funding of the U.S. Army Corps of Engineers' Santa Ana River Mainstem Project. The budget provides for a $51.9 million appropriation which will enable the project to continue on schedule toward completion. Completion of the project is essential to the health, safety and welfare of the Santa Ana River basin and particularly the citizens of Orange County. A project flood would require consideration of up to $15 billion of repair and restora-

tion by FEMA not to mention the lives that would be lost and the economic disaster that would face southern California.

Finally, we would also ask your consideration of another local Corps project, the San Juan/Aliso Creek Study. This project was funded and work on it started last fall and an appropriation of $315,000 is now requested to complete this critical study. This flood threat is of grave concern to southern Orange County citizens and in light of the flood tragedies throughout the country, we are anxious to determine the exact situation for this water course and begin taking the necessary remedial actions before a preventable disaster occurs.

The Orange County Business Council represents nearly 2,000 member companies, employing more than 350,000 workers. The Business Council will greatly appreciate your support for the critical Water Resource projects required in southern California.

I appreciate your consideration of these issues which are of such critical importance to our citizens and our businesses. Please contact me if I can provide any additional information.

PREPARED STATEMENT OF GORDON STEFENHAGEN, MAYOR, CITY OF NORWALK, CA

Chairman Domenici and Members of the Subcommittee, the City of Norwalk is seeking a fiscal year 1998 appropriation of $975,000 to fund technical assistance for the development of seismically reliable water infrastructure improvements for six separate, but contiguous water systems that serve communities in southeast Los Angeles County.

Section 116(d)(1) of the Water Resources Development Act of 1990 (Public Law 101–640) as amended by the Water Resources Development Act of 1996 (Public Law 104–303) authorizes the Army Corps of Engineers to provide technical assistance for the development of potential infrastructure projects. This authorization provides for 25 percent non-federal sponsor cost sharing. Estimated technical assistance/design costs are $1.3 million. The local cost share is $325,000.

The Water Resources Development Acts of 1990 and 1996 authorize studies under sponsorship of the Army Corps of Engineers to address the seismic reliability and restoration of southern California's public works infrastructure to insure full service during and following significant earthquakes in southern California. A fiscal year 1995 Energy and Water Development Appropriation funded the Southeast Los Angeles County Water Conservation and Supply Study. The special study evaluated the performance of the six water systems serving the area, the vulnerability of those systems to disruption caused by a major seismic event, and the ability of these systems to function adequately following a major earthquake.

The special study concluded that there are inadequacies and structural deficiencies in the water systems that would be exacerbated by a major earthquake. Storage capacity is inadequate, conveyance pipes are undersized and deteriorated, interconnections between purveyors are inadequate, and there is insufficient standby power to keep pumps operating when electrical service is interrupted. Significant interruption of water flow is anticipated during and following a major seismic event because individual system components are susceptible to failure severely affecting fire suppression activities. The resulting damages and related costs will include repair of the damaged water system, loss of property and the loss of business and residential service.

The special study identifies three graduated systems' improvement alternatives to increase their reliability, reduce economic loss, and improve public safety. The three improvement alternatives reduced the estimated earthquake damages between $74 million and $101 million.

Potential damages due to a major seismic event assumed to be a 6.5 Richter Scale event on the Whittier Fault (the fault responsible for the 1989 Whittier Earthquake) are estimated at $219 million. Such damages relate only to those caused by an inadequate water supply, fire suppression, and standby power systems. An earthquake of magnitude 8.3 predicted for the San Andreas fault could cost thousands of lives and upwards of $70 billion in property damage to southern California.

Southern California earthquakes have cost the economy and local, regional, state, and federal government billions of dollars in emergency response services, clearance, recovery, and reconstruction of public infrastructure as well as resulting in significant public health and safety costs. Damage resulting from the 1994 Northridge earthquake, measuring 6.7 on the Richter Scale, did more than $20 billion in damage.

Technical assistance is being sought for the development of policies and programs for enhancing emergency response and the design of the components needed to

maximize the ability of these water systems to function properly following a major earthquake.

Required improvements include additional reservoir storage, new wells, transmission pipelines, and system interconnections to create a system loop connecting water purveyors. Transmission improvements will strengthen the water conveyance and increase the reliability of emergency supplies. Also required are retrofitting pump stations and well pumps, pump motor control equipment, and the addition of stand-by generators for emergency power during electrical service interruptions.

The Water Infrastructure Seismic Reliability/Restoration Project proposed by the City of Norwalk for the southeast Los Angeles County area will insure the seismic reliability of our water systems, saving lives, reducing property damage, and avoiding significant costs to all levels of government for earthquake response and recovery. The City of Norwalk seeks the Subcommittee's serious consideration of this proposed assistance.

PREPARED STATEMENT OF CHARLES F. KAISER, PRESIDENT, BOARD OF DIRECTORS, TWENTYNINE PALMS WATER DISTRICT

Chairman Domenici and Members of the Subcommittee, Section 116 (d) of the Water Resources Development Act of 1990 (Public Law 101–640) authorizes research under the jurisdiction of the Army Corps of Engineers to address the seismic reliability and restoration of southern California's public works infrastructure to insure full serve levels in the event of a significant seismic event.

The Twentynine Palms Water District seeks $100,000 in fiscal year 1998 appropriations for the Water Infrastructure Restoration Study. This study consists of a research and assessment of seismic conditions affecting the District's water system infrastructure and local water supplies. The study also includes scoping the primary elements of a subsequent study. Ultimately, this important work will result in a conceptual plan for restoring the seismic reliability of the District's infrastructure, insuring adequate water supply and availability and insuring adequate back power supply during and after a major seismic event.

The key components of the Twentynine Palms Water District Water Infrastructure Restoration Study are:

—The identification of the design base earthquake;
—Data collection of water infrastructure elements including local groundwater conditions, governmental regulations and planned programs affecting District water supplies;
—Identification of existing emergency preparedness programs;
—Ascertaining the nature of the regional power grid serving the study area and the availability of portable and standby power;
—Defining system deficiencies;
—Researching the District's Water Master Plan and Capital Improvement Program; and
—Scoping for the development of a Water Infrastructure Restoration conceptual plan.

Mr. Chairman and Members of the Subcommittee, natural disasters cost the economy and local, regional, state and federal government billions of dollars in damage, emergency response and reconstruction of public infrastructure as well as represent a significant threat to public health and safety. Damage resulting from the 1994 Northridge earthquake, measuring 6.7 on the Richter Scale, did more than $20 billion in damage. The federal government paid billions of dollars of the emergency response and restoration costs.

The so-called "great quake" or "the big one", of magnitude 8.3 predicted for the San Andreas fault, or magnitude 7.5 predicted for the Newport-Inglewood fault near downtown Los Angeles, could cost thousands of lives and upwards of $70 billion in property damage. A disaster of this type would be significantly exacerbated if water systems did not survive the quake or were not restored quickly afterwards.

The Water Infrastructure Restoration Study proposed by the Twentynine Palms Water District is the first step in insuring the seismic reliability of our water systems that will save lives, reduce property damage and avoid the significant costs to all levels of government for earthquake response and recovery. I urge the Subcommittee to provide funds for this important work.

PREPARED STATEMENT OF JACK BABER, PRESIDENT, RECLAMATION DISTRICT NO. 1004, COLUSA, CA

Mr. Chairman and Members of the Subcommittee. During the last three years, Reclamation District No. 1004 has invested a significant amount of its funds to develop economical fish protection through innovative behavioral barrier technology at our Diversion on the Sacramento River. However, guidance efficiencies appeared to be insufficient to meet the stringent criteria of National Marine Fisheries Service. The District is now in the process of designing and constructing a positive barrier fish screen. Screening of the Reclamation District No. 1004 diversion is a high priority for resource agencies.

During 1997, the District will complete environmental work and final design of the permanent positive barrier fish screen and pump relocation to a stable site approximately one-quarter mile downstream of the existing pumps. The existing location has been determined to be in a natural meander zone of the Sacramento River.

The District is now on an accelerated schedule to complete design and construction of a positive barrier fish screen facility by the end of 1998. This schedule is mandated by the NMFS Biological Opinion.

In order to meet this closely coordinated time schedule, it is critical that construction funds be available by the beginning of fiscal year 1998 (October 1997). We respectfully request an appropriation of $2,625,000 specifically designated to complete this construction project at Reclamation District No. 1004.

Additionally, the District requests that the Committee support an additional $3 million be added to the Anadromous Fish Screen Program from the Bureau of Reclamation general fund monies for fiscal year 1998 to enable the Bureau to fully fund priority screening projects including Reclamation District No. 1004.

We greatly appreciate the support of the Committee.

PREPARED STATEMENT OF GAYE LOPEZ, MANAGER, COLUSA BASIN DRAINAGE DISTRICT

USBR Fiscal Year 1998 Request: $400,000

The 650,000 acre Colusa Basin Drainage District, located on the west side of the Sacramento River, serves a large watershed exceeding one million acres. It covers three counties, Glenn, Colusa and northern Yolo Counties. It not only is a rich agricultural area, but a rich wildlife area as well, including three national wildlife refuges.

The District was formed to primarily address flooding problems. In 1995 alone, these three counties suffered an estimated 100 million dollars in damage and 1 death due to storms. In November 1995, a majority of landowners voted to implement the District's Integrated Management Plan to address flood damage while obtaining other benefits of increasing groundwater supplies, surface water storage, and improve environmental and wildlife uses in the watershed.

Four projects have been initially selected to be developed to serve as a demonstration for integrated resources management: Two small reservoirs, a groundwater recharge detention basin, and management of the 75 mile Drain itself. During 1996, preliminary design for the conjunctive use demonstration projects was completed. Environmental documentation will commence during 1997. In addition, as part of the District's Integrated Resource Management Plan, the District desires to investigate opportunities to restore wetlands and environmental habitat in the basin.

The District requests a $400,000 appropriation in fiscal year 1998 to complete the environmental work it has begun on these projects and begin final design for construction.

We believe our Integrated Resource approach to solving a number of problems across a large area with the same dollar, is a wise expenditure of public funds.

Thank you for your continued support.

PREPARED STATEMENT OF JERRY C. HARMON AND KEITH E. BEIER, COUNCIL MEMBERS, SAN DIEGO AREA WATER RECLAMATION PROGRAM

Mr. Chairman and members of the subcommittee, on behalf of the San Diego Area Water Reclamation Program and in support of funding for its construction, we are pleased to submit this testimony. For the past four years, you have provided necessary support for this vital project. We trust that, under the subcommittee's new leadership, you will continue to help us to deal with the water situation which affects our portion of the country where we effectively live on a desert made livable by finding or creating usable water. For the last four years, you have demonstrated

a commitment to our project to benefit the people of San Diego County and its surrounding environment.

The San Diego Area Water Reclamation Program, in particular the Escondido Water Reclamation Program which we know the most about, is a proactive attempt by regional and city leaders to address the region's historic scarcity of available and affordable potable and non-potable water for residential and commercial uses. San Diego County, especially the North County where Escondido is located, has experienced a tremendous population influx over the last 25 years. While our infrastructure has kept pace, occasional long term investments, like the water reclamation program, are needed to keep up with growth demands for water—a limited resource in our desert region. Since 1960, the population of Escondido has increased dramatically, as has the number of new businesses, not to mention our continued presence as an agriculture center. Through local planning and leadership, Escondido continues to attempt to meet the challenge of maintaining a high quality of life for its people, and with this subcommittee's continued support, can make it a reality.

While our specific program is important to the citizens of Escondido, we remain a key part of the overall water planning effort of San Diego County. As part of the San Diego Area Water Reclamation Program, we are pleased with the increased amount of water that will be made available to the county as a result of this program.

With state-of-the-art improvements to Escondido's existing treatment plant, the Hale Avenue Resource Recovery Facility, this project will expand the facility's reclaimed water capacity to 18 million gallons per day, treated to tertiary standards. That will significantly increase the amount of reclaimed water available for uses not requiring potable water, including agricultural applications, irrigation of golf courses, parks, athletic fields, roadway landscaping, school landscaping, and general decorative landscaping. In addition, the Escondido Water Reclamation Project includes the City of San Diego's San Pasqual Valley Ground Water Management Project as a major customer for the reclaimed water to be produced at the Hale Avenue Resource Recovery Facility.

The Escondido Water Reclamation Program has received the following federal funding for its water reclamation program: In fiscal year 1994, the Escondido Water Reclamation Program received $400,000. In fiscal year 1995, as part of the San Diego Area Water Reclamation Program, Escondido received $360,000 out of a total appropriation of $2.5 million. Fiscal year 1996 federal support amounted to $1.116,000, and last year, we received $590,000. These funds were used in the construction of reclaimed water pipelines and in the design and construction management review of improvements to the Hale Avenue treatment plant. All of these federal funds have been matched by the City of Escondido 75 percent to 25 percent federal.

The Bureau of Reclamation's fiscal year 1998 budget request includes $3.195 million for the Escondido Water Reclamation Program, as part of a larger appropriation for the San Diego Area Water Reclamation Program. With that appropriation. and with the final engineering analysis for the San Pasqual Valley Groundwater Management Plan, Escondido will perform major construction at the Hale Avenue Recovery Facility until the work is completed. We had hoped to begin this work last year, but waited for the San Pasqual portion to be finalized.

We are pleased that the California Water Commission again has supported our request for federal funding as a recommended program. We are gratified to receive such support as well as the support of our sister agencies that comprise the San Diego Area Water Reclamation Program. With limited funding and unlimited needs, we are pleased to go forward and to recommend the full appropriation for the San Diego Area Water Reclamation Program. This program has been favorably reviewed by this subcommittee and the Senate subcommittee, the California Water Commission, and regional officials back home in San Diego County. It remains a good and needed project and we respectfully request your continued support.

PREPARED STATEMENT OF THE SANTA ANA WATERSHED PROJECT AUTHORITY [SAWPA]

Mr. Chairman, and members of the Committee, this is submitted on behalf of the Santa Ana Watershed Project Authority (SAWPA), headquarters in Riverside County, California, respectfully requesting your continued assistance in the construction of the Chino Basin Desalination Program. SAWPA has received approval for a $32,064,258 loan through the United State Bureau of Reclamations Public Law 84–984 Small Reclamations Project Act Program, to assist in the installation of this project which is so important to our area. To date, we have received an initial fund-

ing of $4,551,070 and are scheduled to receive $5,592,000 during fiscal year 1997 for this work. It is our understanding that the remaining loan amount will be allocated for this activity over the following three fiscal years.

The Chino Basin Desalination Program is a major element of the regional plan to protect local groundwater and the Santa Ana River from further degradation, and to extend the use of local water resources to meet current and future water demands. The Chino Groundwater Basin, an area of about 220 square miles, is located upstream of densely populated Orange County. Water quality in the region is degrading due to historic and ongoing agricultural activities. Irrigation drainage over the past 100 years has deposited high concentrations of salt and nitrates in the soil and groundwater. At the present time, there are over 300,000 dairy cattle concentrated on 15,000 acres of land in the basin. It is estimated that the dairy operations, despite strong efforts to manage quality issues, contribute as much as 27,000 tons of salt annually to the groundwater supplies in the area. Municipal water wells in the communities of Norco and Jurupa, the City of Chino, and the City of Chino Hills have been abandoned due to salt and nitrate contamination. It has been determined that if left unchecked the salt and nitrates will further degrade local groundwater, jeopardizing over 50 percent of the basin's supply, and that downstream water resources in Orange County are equally threatened.

The Chino Basin Desalination Program is being constructed and will be operated to protect the areas groundwater resources from further deterioration, to protect the surface flows of the Santa Ana River from degradation, and to facilitate expanded conjunctive use of imported and local water supply. The project will extract and desalt about 10,000 acre-feet per year of salt laden, brackish groundwater from the Chino Basin. Demineralization will be accomplished by installing a desalting plant designed to produce 8.0 million gallons per day of potable water for use in nearby cities and on local farms. The desalter will be supplied poor quality water from as many as thirteen extraction wells, carefully located to intercept the sub-surface migration of contaminated water. Approximately 15,000 tons of salts will be removed from the basin annually by this operation. The process of salt removal will produce a heavy saline brine reject which will be transported from the basin in a non-reclaimable waste line and receive additional treatment prior to ocean disposal.

The estimated total cost of constructing the desalting plant and appurtenant facilities is $47,687,164.

The project has the support of local water agencies, local and the State Water Quality Control Board, the State Department of Water Resources, the State Water Commission, local agricultural interests and the Metropolitan Water District of Southern California. To date, SAWPA has invested $10.5 million in design and right-of-way acquisition. Construction is planned to begin in April, 1997 and the plant is projected to be operational by November 1998.

The benefits of this important program are:

—Protection of local ground and surface water supplies.
—Protecting the environment from continued mineral degradation.
—Assuring the long-range viability of agriculture in the region.
—Providing additional water in an area of water scarcity.
—Providing as many as 1,000 design and construction jobs in an area where unemployment remains among the highest in the United States.
—Reducing the demand for water from the State's Delta area in Northern California.

Your continuing support of this project is essential to its success, and upon completion the project will be a major asset for local and regional water resource management agencies.

Prepared Statement of the Metropolitan Water District of Southern California

Chairman Domenici and Members of the Subcommittee: The Metropolitan Water District of Southern California (MWD) appreciates the opportunity to submit testimony regarding the U.S. Bureau of Reclamation's (Reclamation) and the Army Corps of Engineers' (Corps) fiscal year 1998 budget, for the Hearing on Energy and Water Appropriations. MWD is a public agency created in 1928 to meet supplemental water demands of those people living in what is now portions of a six-county region of Southern California. Today, the region served by MWD includes nearly 16 million people living on the coastal plain between Ventura and the Mexican border. It is an area larger than the State of Connecticut and, if it were a separate nation, would rank in the top ten economies of the world.

Included in our region are more than 225 cities and unincorporated areas in the counties of Los Angeles, Orange, San Diego, Riverside, San Bernardino, and Ventura. We provide more than half the water consumed in our 5200-square-mile service area. MWD's water supplies come from the Colorado River via the district's Colorado River Aqueduct and from northern California via the State Water Project's California Aqueduct.

INTRODUCTION

Our testimony focuses on Reclamation's water resources management and ecosystem restoration programs that are of major importance to MWD and other Southern California water supply agencies. Specifically, MWD strongly recommends your approval of a Reclamation fiscal year 1998 budget that includes full funding for San Francisco Bay-Sacramento/San Joaquin Delta Estuary restoration activities, as requested in the President's budget. MWD urges your support for adequate federal funding for Reclamation's Colorado River Basin Salinity Control projects that will ensure protection of water quality for this important source of water supply. MWD also urges your support for Reclamation's Endangered Species Conservation/Recovery projects that will provide for conservation of endangered and threatened species and habitat along the lower Colorado River, and provide mitigation for impacts associated with Reclamation's projects.

Finally, MWD urges your full support for Reclamation programs that will help stretch existing water resources, such as water reclamation and groundwater recovery projects for Southern California agencies. These programs are essential for regional water supply reliability.

U.S. BUREAU OF RECLAMATION BUDGET

California Bay-Delta Environmental Enhancement

Last session, Congress passed the California Bay-Delta Environmental and Water Security Act, which authorized $430 million over three years for ecosystem restoration and water management improvements in the San Francisco Bay-Delta Estuary. The Bay-Delta serves as the hub of California's water system, fueling the State's $750 billion economy, supplying more than two-thirds of the State's 32 million residents with a portion of their drinking water and irrigating 45 percent of the nation's produce.

Recognizing the importance of the Bay-Delta to California's economic and environmental health, the California voters approved a $1 billion general obligation bond in November 1996, which contains $600 million for improvements in the estuary.

The President's fiscal year 1998 budget request provides funding of $143.3 million for environmental restoration activities in the Bay-Delta. Federal money for the Bay-Delta will fund an array of critical ecological improvements, including habitat restoration, watershed protection, fishery enhancement and water quality improvement. MWD strongly urges your support for the restoration of this national ecological treasure by ensuring the appropriation of these critically-needed funds.

Colorado River Basin Salinity Control

The Colorado River is a very large component of the regional water supply and its relatively high salinity causes significant economic impacts on the 16 million water customers in the MWD's service area, as well as throughout the Lower Basin. For this reason, MWD and the Bureau of Reclamation are currently conducting a Salinity Management Study in Southern California. The recently completed first phase of the study concludes that the high salinity from the Colorado River causes significant impacts to residential, industrial and agricultural water users. Furthermore, high salinity adversely affects the region's progressive water recycling programs, and is contributing to an adverse salt buildup through infiltration into Southern California's irreplaceable groundwater basins. Reclamation studies indicate that water users in the Lower Basin are experiencing $750 million in annual impacts from current salinity levels in the river, and that these levels will progressively increase with continued agricultural and urban development upstream of MWD's point of diversion near Parker Dam. Droughts will cause spikes in salinity levels that will be highly disruptive to Southern California water management and commerce. The Salinity Control Program has proven to be a very cost-effective approach to help to mitigate the impacts of higher salinity. Continued federal funding of the program is essential.

The Colorado River Basin Salinity Control Forum (Forum), the interstate organization responsible for coordinating the Basin states' salinity control efforts, issued its 1996 Review, Water Quality Standards for Salinity, Colorado River System (1996 Review) last June. The 1996 Review found that additional salinity control was nec-

essary two years ago to meet the numeric criteria in the water quality standards adopted by the seven Colorado River Basin states and adopted by the U.S. Environmental Protection Agency with normal water supply conditions. For the last two years, federal appropriations for Reclamation have not equaled the Forum-identified funding need for the portion of the program the Federal Government has the responsibility to implement. It is essential that implementation of Reclamation's basinwide salinity control program be accelerated to permit the numeric criteria to be met again under average annual long-term water supply conditions, making up the shortfall. To assist in eliminating the shortfall, the Forum recommended that Reclamation utilize upfront cost sharing from the Basin states to supplement federal appropriations. This concept has been embraced by Reclamation and is reflected in the President's proposed budget.

The President's proposed fiscal year 1998 budget contains funding of $7.6 million for implementation of the basinwide program, and $4.3 million for implementation of the Grand Valley salinity control unit. In addition, the President's proposed budget contains $3.861 million for operation and maintenance of the Grand Valley, Lower Gunnison Basin, and Paradox Valley salinity control units, and $310,000 for investigations. MWD requests that Congress appropriate $12.5 million for implementation of the basinwide program, an increase of $4.9 million from that proposed by the President. This level of funding is necessary to meet the salinity control activities schedule in order to maintain the state adopted and federally approved water quality standards. The Forum supports this level of funding. MWD supports the level of funding proposed by the President for implementation of the Grand Valley salinity control unit, operation and maintenance of the units, and investigations.

Endangered Species Conservation/Recovery Project

MWD is presently engaged in an innovative partnership with Reclamation and other Department of the Interior agencies, as well as other water, power, and wildlife agencies, environmental organizations, and Indian Tribes in the states of Arizona, California, and Nevada, to develop a multi-species conservation program for the Lower Colorado River. The program will address the conservation, enhancement, and recovery needs of a broad suite of more than 100 listed and sensitive species and their associated aquatic, wetland, and riparian habitats in the three states, while providing long-term regulatory certainty for all parties. An effort of this nature can only succeed through the development of innovative voluntary public-private partnerships.

MWD encourages your support for Reclamation's participation in the Lower Colorado River Multi-Species Conservation Program. Reclamation's participation in this program has been a valuable asset to the partnership. Funds provided under this project will in part help fund critically needed interim conservation measures for endangered species and their habitats, as well as planning under the long-term conservation program.

The President's budget requests $3.66 million for fiscal year 1998 to fund 11 separate programs under the "Endangered Species Conservation/Recovery Project." Included in this amount is $1.155 million to support cooperative efforts in the development of the "Lower Colorado River Habitat Conservation Plan." These funds will be matched one-to-one by non-federal funds. MWD strongly supports funding at the requested level.

National Fish and Wildlife Foundation

The National Fish and Wildlife Foundation (Foundation) facilitates implementation of fish and wildlife mitigation and enhancement programs associated with Reclamation's projects through cost-sharing partnerships with local, state, tribal, and/or nongovernmental organizations. The Foundation is able to leverage federal dollars on at least a 1:1 matching basis.

The Foundation's support for programs like the Lower Colorado River Multi-Species Conservation Program is extremely important to the development of comprehensive solutions to these complex endangered species issues. An effort of this nature can only succeed through the development of innovative voluntary public-private partnerships.

The President's budget requests $1.5 million for fiscal year 1998, which anticipates a two dollar nonfederal match for each federal dollar. MWD strongly supports the President's requested level of funding.

Water Recycling and Groundwater Recovery

Projects funded under Title XVI of the Reclamation Projects Authorization and Adjustment Act of 1992 (Public Law 102–575) will greatly improve Southern California's water supply reliability and the environment through effective water recycling and recovery of degraded groundwater. Title XVI projects authorized by the Rec-

lamation Recycling and Water Conservation Act of 1996 (Public Law 104–266), but not included in the President's proposed fiscal year 1998 budget for Reclamation, are considered to be equally important. The Southern California Comprehensive Water Reclamation and Reuse Study is expected to identify new cost-effective opportunities for recycling water in the region. Implementation of such projects is difficult without combined federal, state and regional assistance. MWD expects to contribute about $15.2 million in fiscal year 1998 to recycled water and groundwater recovery projects in the region, and the State of California is making low-interest loans. This leaves the bulk of the costs for these projects to be paid by local agencies. MWD urges your full support for the $32.149 million in the President's fiscal year 1998 budget for water recycling and groundwater recovery projects, as well as future funding for all authorized Southern California projects.

Water Conservation

Stretching available water supplies to fit competing needs continues to be a major concern in Southern California. MWD is supportive of Reclamation's past demonstrated commitment to water conservation and responsible water resources management. This philosophical commitment to water conservation has clearly been reflected in past Reclamation budgets. In fiscal years 1994 and 1995, MWD, on behalf of its 27 Member Agencies and the numerous subagencies and water districts they serve, qualified for matching incentive grants of $3.65 million to encourage water conservation through residential, commercial/industrial, and landscape projects. This Reclamation funding has been used to support water conservation programs that include technologically-innovative applications, and that facilitate jobs creation and community support as additional tangible benefits.

In Reclamation's fiscal year 1996 budget, $9 million was requested to initiate the "Water Conservation Challenge Partnerships" program. Cost-share funding made available through this program would have provided financial assistance throughout the West for innovative urban and agricultural water conservation initiatives, that include cooperative partnerships among water users and other interested parties. Though not funded in fiscal year 1996 Energy and Water Appropriations, this program remains of great interest to MWD. As a result, MWD urges you and your Subcommittee to consider initiating funding for the "Water Conservation Challenge Partnerships" program in Reclamation's fiscal year 1998 budget.

ARMY CORPS OF ENGINEERS

The Army Corps of Engineers' (Corps) comprehensive civil works program has the capability to contribute to the social, economic, and environmental well-being of California. MWD is primarily interested in the Corps' environmental restoration studies and projects that address the needs of the Bay-Delta Estuary.

The President's proposed fiscal year 1998 budget includes numerous new and continuing programs in the Corps' South Pacific Division, which includes California. Several ecosystem restoration studies and projects specifically address significant habitat issues at various locations in the Bay-Delta watershed. These ecosystem restoration and flood prevention programs, and the Corps' participation in CALFED Bay-Delta efforts, represent an important opportunity in the process of developing a solution to the water resources and environmental problems facing the Bay-Delta Estuary. Corps programs that can contribute to the long-term Bay-Delta solution include wetland restoration projects such as those within the Yolo Bypass near Sacramento and Davis, watershed management studies in the Sacramento and San Joaquin River watersheds, habitat conservation and mitigation elements of flood damage prevention projects, and ecosystem restoration programs.

MWD urges Congress to support these Corps programs as the fiscal year 1998 federal appropriations process moves forward.

Thank you for your consideration of our testimony. We believe our comments emphasize the importance of continued funding for Reclamation and Corps' water resources management and ecosystem restoration programs that are critical for water supply reliability in Southern California.

PREPARED STATEMENT OF THE CITY OF SACRAMENTO, CA

Mr Chairman, the City of Sacramento requests that the following statement be submitted as part of the formal record of the Subcommittee on Energy and Water Development's review of the U.S. Corps of Engineers' (COE), fiscal year 1998 appropriations request.

The City of Sacramento has been engaged in an effort to initiate the largest infrastructure improvement project in its history. This involves a multi-phase project to

mitigate environmental and public health threats posed by the City's combined sewer system. The first phase of this $132 million project will address storage, pumping and treatment capacity of the existing system. The City is seeking the Subcommittee's support for this cost-shared project by requesting $3 million in federal assistance. This request is being made pursuant to the authority provided by Section 506, Watershed Management, Restoration, and Development, of the Water Resources Development Act of 1996 (WRDA, Public Law 104–303). The California Water Commission has endorsed this request.

When Congress passed WRDA, it included an authorization to protect and restore the Sacramento River Watershed. This action was taken to ensure that COE expertise and experience could be utilized to ensure that watersheds such as the Sacramento River's would benefit from the decades of COE involvement. The legislative history on this provision explicitly states that the Secretary is authorized to provide technical, planning and design assistance to non-Federal interests. This assistance is to target restoration and development projects. The legislative history specifically qualifies this to include management and restoration of water quality which may include measures to prevent water quality degradation, control and remediation of toxic sediments, restoration of degraded streams, rivers, wetlands, and other water bodies as a means to control and protect urban watersheds. The Sacramento River Watershed is ideally situated to qualify for participation in this federal program based on the criteria of Section 506.

Currently, the City's need for infrastructure improvements are necessary because major storm events overwhelm the hundred year old system which combines stormwater flows with sanitary sewer flows. When this happens, the discharge of untreated wastewater into City streets and the Sacramento River occurs. The situation is similar to other older communities that have received federal assistance to support programs to correct the discharge threats.

The City system receives both stormwater and sanitary wastewater flows. It contains over 306 miles of pipe ranging in diameter from six inches to nine feet servicing more than 7,000 acres of homes and commercial and industrial businesses within the Sacramento River Watershed. During dry weather conditions, it has up to 60 million gallons of waste flows. In times of wet weather conditions, this flow can be up to 630 million gallons per day. This imposes a burden that the City cannot meet under current operations.

In 1990, the City had recognized that its combined system was in need of repairs and expansion to address the problems identified by the California Regional Water Quality Control Board. Beginning at this time, the City began to study possible alternatives to address this watershed threat ranging from a complete separation of the combined system to deep tunnels that would eliminate the overflow situations. After extensive study, the City determined that the best approach was a long range plan for increased pumping and treatment capacity coupled with below ground storage facilities. The cost-effective approach to implement the long-range plan involved a $132 million first phase. This first phase includes the rehabilitation of the existing infrastructure and expansion of facilities to accommodate storm-related surge events. A part of the first phase, for which the City is seeking $3 million, would involve upgrading a reservoir facility with disinfection capability to reduce pathogens that would otherwise result in the degradation of the Sacramento River Watershed.

This cost-effective response is important because it will serve as a model to other watershed initiatives that seek to avoid obstacles to economic growth while protecting natural resources, improve and stabilize neighborhood revitalization efforts, and promote a higher quality of life for the City's residents and the surrounding communities that are within the watershed. In addition to implementing a response that will complement overall efforts to improve the overall water quality of the Bay-Delta, the project will, importantly, contribute to the community's efforts to prevent flood damage from 100-year storm events. As recent storms have demonstrated, the occurrence of this kind of event is more frequent than once thought. The costs to the federal, state and local governments in the form of disaster assistance and natural resources restoration efforts is monumental. The implementation of this program will provide a critical element to address this situation and help to minimize the level of federal disaster assistance in the future.

Once the project is implemented, it will begin the process of achieving the City's goals which can be summarized as follows:

—provide control over the risk of wastewater flooding City streets;

—reduce the potential for untreated wastewater to be discharged to the Sacramento River Watershed when surge events occur; and

—rehabilitate facilities and pipelines in a cost-effective manner that can serve as a model for other communities with similar circumstances.

The issues are important to Sacramento's economy, its environment and the health and safety of its citizens. It is also important to the overall effort to develop programs that will complement efforts to restore the San Francisco Bay-Delta and improve an important watershed that is critical to the natural resources and economy of the State. We, therefore, strongly request that the Subcommittee support cost-shared assistance for the City of Sacramento.

PREPARED STATEMENT OF THE EAST BAY MUNICIPAL UTILITY DISTRICT

Mr. Chairman, on behalf of the East Bay Municipal Utility District (EBMUD), I request that this statement be included as part of the Subcommittee on Energy and Water Development's fiscal year 1998 appropriations hearing record on the U.S. Corps of Engineers budget.

EBMUD is requesting that the Subcommittee approve an appropriation of $5 million to permit the U.S. Corps of Engineers to participate in a 50 percent cost-shared cleanup of the abandoned Penn Mine site in Calaveras County, California. This is supported by the State of California, the California Water Commission, and other stakeholders who consider this project an important step in the effort to correct environmental threats created over several decades for which no responsible party exists. The request is made pursuant to Section 206 of the Water Resources Development Act of 1996, which authorizes the Corps of Engineers to provide up to a 65 percent cost share to conduct aquatic ecosystem restoration projects.

This project will serve as a national model to respond to other similar sites that are scattered throughout the country and which are concentrated throughout the West. Polluted runoff from abandoned hardrock mines poses serious ecological threats to water quality, aquatic habitat, and other environmental resources. The history of the Penn Mine site vividly illustrates the importance of developing a model that will allow a cost-effective solution to be implemented at the numerous abandoned mine sites.

Under Section 206, federal funding is authorized only for those projects that will improve the quality of the environment, are in the public interest, and are cost effective. As the following discussion outlines, the requested project assistance meets these criteria. In addition, EBMUD and the State of California have taken the necessary steps to provide binding agreements to meet the obligations to provide the non-federal share of the project's construction costs as well as site rehabilitation and runoff monitoring costs associated with the project.

EBMUD is a public agency responsible for providing water supply and wastewater treatment services to more than 1.2 million people of the East Bay in California, including residents of Oakland and Berkeley, stretching south to Castro Valley and north to Crockett. EBMUD's principal source of water is supplied by the Mokelumne River, which is located in Calaveras County, California. As part of its watershed buffer zone to protect this water supply, EBMUD property includes an area that is contiguous to an abandoned hard rock mine known as Penn Mine. This abandoned copper and zinc mine sits along the upper reaches of EBMUD's Camanche Reservoir.

The mine was opened in 1861, and its periods of major activity occurred between 1899 and 1919 at the direction of the federal government. It was also operated during World War II to support the nation's demand for strategic metals. When the mine ceased operations after World War II, it was left in a state of disrepair and abandoned as uneconomic. Based on known records, beginning in the 1930's heavy metals, such as copper and zinc, were discharged from the mine site into the river, killing all aquatic life for 40 miles downstream. Despite the end of active mining in the late 1940's, environmental damage continued because of more than 250,000 cubic yards of mine waste consisting of unprocessed ore and mill tailings, covering 15 acres.

Although EBMUD was never involved in the mining activities, nor has it benefitted in any way from the mining activities, EBMUD's Good Samaritan efforts have created an untenable and inequitable situation whereby EBMUD and the State of California are being asked to pay for the site's cleanup. Specifically, with the history of the site and federal involvement, as well as the importance of having a proven cleanup plan that could be used elsewhere, it is only reasonable that a cost sharing arrangement be made available to ensure that EBMUD is not asked to shoulder the entire cleanup burden for something for which it had no responsibility.

Responding to the State of California's request, EBMUD began a cooperative program in 1978 to minimize the adverse effects of the mine site. Several reconstructed channels and holding ponds were created on the Penn Mine site. EBMUD, acting as a Good Samaritan, constructed Mine Run Dam Reservoir on its property that was

experiencing acid mine drainage runoff which was then entering the Mokelumne River. Mine Run Dam Reservoir effectively served as a final defensive line to ensure that mine drainage would be controlled and treated to avoid uncontrolled fish kills and other ecosystem degradation. These actions contained about 90 percent of the drainage and, most importantly, prevented acidic runoff from entering the river between 1987 and 1992. There were no reported fish kills with the operation of the EBMUD facility.

In 1993, EBMUD took several steps to meet water quality concerns of federal regulators, including developing a plan to divert and treat potential overflows from the site. In addition, EBMUD installed a batch treatment system to neutralize the toxic mine drainage and implemented a pumping operation to ensure that mine drainage would not overflow and react with mine wastes, thereby creating serious environmental threats. As a result of these actions, more than 15 million gallons of polluted runoff have been treated, resulting in greater than 98 percent removal of metals from water released from the site. Based on monitoring data, this temporary action has reduced Penn Mine metals loading to background levels.

In 1995, the California State Water Resources Control Board, in connection with U.S. EPA, issued a draft permit to control final discharges and regulate activities at the site. This permit, which is pending while a cleanup plan is finalized, would impose specific cleanup requirements on EBMUD.

EBMUD, in cooperation with federal, state, environmental and other stakeholders, has diligently worked to develop a plan of action to remediate the site and return it to its original landscape condition. After much study and review, a preferred alternative cleanup plan was accepted as the most protective and cost effective solution. The U.S. EPA, the Committee to Save the Mokelumne River, the California Sportfishing Protection Alliance, the State Water Resources Control Board, the Central Valley Regional Water Quality Control Board, and EBMUD signed an agreement to accept the preferred alternative cleanup plan. The Environmental Impact Report identifying the final cleanup plan was certified by the State of California and EBMUD in February 1997.

Because the site was created to support national objectives, and in some instances activities were directly related to federal contracts, it is only reasonable that federal assistance be provided to support cleanup plan implementation. It is important to reiterate that despite the fact that EBMUD never created the situation or benefitted from the mining activities, it has expended a considerable amount of time and resources. The next step, actual cleanup, will support ongoing efforts to develop a model that will demonstrate successful abandoned mine cleanups can be undertaken through consensus-based, cooperative processes in a cost-effective and environmentally sensitive manner.

We therefore strongly request that the Subcommittee provide $5 million for the U.S. Army Corps of Engineers fiscal year 1998 budget that will support a 50 percent cost-shared cleanup program at the abandoned Penn Mine that will serve as a model for future cleanup efforts at abandoned mine sites throughout the country.

PREPARED STATEMENT OF CITY OF INGLEWOOD, CA

Chairman Domenici and Members of the Subcommittee, Section 116(d) of the Water Resources Development Act of 1990 (PL 101–640) and the Water Resources Development Act of 1996 (PL 104–303) authorize studies by the Army Corps of Engineers relating to the seismic reliability and restoration of southern California's public works infrastructure to insure full serve levels in the event of a significant seismic event. The intent is to take a proactive approach to earthquake preparedness of southern California's infrastructure which in the end will be more cost effective and desirable than the post earthquake costs.

The City of Inglewood requests $100,000 in fiscal year 1998 appropriations for the Water Infrastructure Seismic Reliability/Restoration study. This study consists of a research and assessment of seismic conditions affecting the City's water system infrastructure and local water supplies. The study also includes scoping the primary elements of a subsequent study. Ultimately, this important work will result in a conceptual plan for restoring the seismic reliability of the City's infrastructure, insuring adequate water supply and availability, and insuring adequate back power supply during and after a major seismic event.

The key components of the Inglewood Water Infrastructure Seismic Reliability/Restoration Study are:

—The identification of the design base earthquake

—Data collection of water infrastructure elements including local groundwater conditions, governmental regulations and planned programs affecting District water supplies,
—Identification of existing emergency preparedness programs
—Ascertaining the nature of the regional power grid serving the study area and the availability of portable and standby power
—Defining system deficiencies
—Researching the City's' Water Master Plan and Capital Improvement Program
—Scoping for the development of a Water Infrastructure Seismic Reliability/Restoration conceptual plan

Mr. Chairman and Members of the Subcommittee, natural disasters cost the economy and local, regional, state and federal government billions of dollars in damage, emergency response, and reconstruction of public infrastructure as well as represent a significant threat to public health and safety. Damage resulting from the 1994 Northridge earthquake, measuring 6.7 on the Richter Scale, did more than $20 billion in damage. The federal government paid billions of dollars of the emergency response and restoration costs.

An earthquake of magnitude 8.3 predicted for the San Andreas fault, or magnitude 7.5 predicted for the Newport-Inglewood fault upon which the City of Inglewood sits could cost thousands of lives and upwards of $70 billion in property damage. A disaster of this type would be significantly exacerbated if water systems did not survive the quake, or were not restored quickly afterwards.

The Water Infrastructure Seismic Reliability/Restoration Study proposed by the City of Inglewood represents the initiation of a program to insure the seismic reliability of our water systems that will save lives, reduce property damage, and avoid the significant costs to all levels of government for earthquake response and recovery. The City of Inglewood asks that the Subcommittee give this request serious consideration.

PREPARED STATEMENT OF JOHN MCTAGGART, MAYOR, CITY OF RANCHO PALOS VERDES, CA

As your distinguished Subcommittee writes the fiscal year 1998 Energy and Water Resources Appropriations bill, I would like to bring a very important environmental restoration project to your attention.

The Corps of Engineers and the City of Rancho Palos Verdes have been working on a cost-shared feasibility study to investigate the Federal improvements to restore pristine environmental areas along the Pacific coastline since 1995. The President's fiscal year 1998 Budget Request contains $79,000 to continue the feasibility study, however the final phase of the study will have to be extended over two fiscal years at that funding level. Extending the study will incur added overhead costs to the Federal government and to the City of Rancho Palos Verdes.

The Corps of Engineers has indicated that the study can be completed in one year. For that reason, and because finishing the study in one year will save the Federal government and the City of Rancho Palos Verdes money, I would like to take this opportunity to request that your distinguished Subcommittee add $121,000 to the President's request of $79,000 for a total Federal contribution to the study of $200,000.

The City is prepared to commit their cost-share portion of matching funds to complete the study next year.

The area along the Rancho Palos Verdes coastline that is being studied has been severely degraded as a result of landslide movement of material and coastal erosion causing sediment and continuous turbidity that has buried sensitive marine habitat. The study involves investigations to define landslide and erosion relationships, impacts on the environment, and potential restoration benefits.

Thank you for the opportunity to submit this request.

PREPARED STATEMENT OF CATHY NOVAK, MAYOR, CITY OF MORRO BAY, CA

As Mayor of the City of Morro Bay, on California's central coast, I respectfully request your consideration of two very important public works projects as your distinguished Subcommittee writes the fiscal year 1998 Energy and Water Resources Appropriations bill.

Morro Bay Harbor is the only safe harbor of refuge between Santa Barbara and Monterey, California and supports approximately 250 home ported fishing vessels and related marine dependent businesses.

During World War II, at the US Navy's request while operating an emergency naval base, the Army Corps of Engineers designed and constructed a new harbor entrance with two rock breakwaters. Since the initial construction, the Federal Government has maintained the harbor entrance, breakwaters and navigation channel. In fiscal year 1995, the Corps completed the Morro Bay Harbor Entrance Improvement Project to enhance commerce, fishing and navigation safety.

This year, only three years after the Corps completed a major enhancement project at Morro Bay Harbor, the President's Budget Request failed to include funding to maintain the Harbor. Due to the fact that the Harbor has very little recreational facilities to generate revenues, there is no local sponsor to assist with dredging costs should the Federal government cease or reduce maintenance dredging support.

Businesses that depend on the Harbor generate $53,500,000 a year and employ over 700 people. I respectfully request that your Subcommittee include $3.2 million to perform the maintenance dredging essential to those businesses.

In addition to O&M dredging, the "south" breakwater is in need of repair. Exposure to the open ocean and its brute force over the years has caused the rocks to dislodge and fall into the water. The breakwater is an essential component of the harbor entrance and has not received repair in over 30 years. Currently, $2 million is needed to make breakwater repairs for a total O&M need of $5.2 million for the harbor.

Morro Bay is a National Estuary and is part of the National Estuary Program administered by the Environmental Protection Agency (EPA). Curtailed tidal circulation, sedimentation and shoaling threaten not only the harbor but many sensitive environmental habitat areas in our bay.

The Morro Bay National Estuary Program is in need of funding to perform an analysis of our Estuary's present and future conditions, define problems and identify potential solutions. I understand the current Administration policy is to restrict reconnaissance studies $100,000, however, $400,000 is needed to perform this vital analysis.

With the continuing loss of wetlands in California and across the nation, we should pride ourselves on the fact that we have a chance to be proactive and preserve an area with a relatively small amount of money.

I am grateful for the opportunity to present these requests to your Subcommittee on behalf of the citizens of the City of Morro Bay.

PREPARED STATEMENT OF JOHN BRIDLEY, WATERFRONT DIRECTOR, CITY OF SANTA BARBARA, CA

As your distinguished Subcommittee writes the fiscal year 1998 Energy and Water Resources Appropriations bill, I would like to bring a very important Corps of Engineers project to your attention.

About 400,000 cubic yards of sand piles up every winter at Santa Barbara Harbor, and in years of severe storms, the accumulated sand can close the channel bringing local fishing and other businesses in the harbor to a standstill.

There is an important Federal interest in maintaining dredging at the Harbor. It provides slips and moorings for over 1,000 commercial, emergency and recreational boats. It is also an important part of Coast Guard operations on California's central coast.

The President's fiscal year 1998 Budget Request includes $1,492,000 for operations and maintenance for Santa Barbara Harbor. I respectfully request that the House of Representatives, through your Subcommittee, maintain that level of funding.

Thank you for the opportunity to submit this statement.

PREPARED STATEMENT OF THE HON. KARAN MACKEY, MEMBER, COUNTY BOARD OF SUPERVISORS, LAKE COUNTY, CA

Mr. Chairman, Members of the Subcommittee, my name is Karan Mackey. I am a member of the Lake County Board of Supervisors, and I appreciate this opportunity to present testimony before the Subcommittee on behalf of Lake County, California.

Lake County supports full funding of the President's budget request for Northern California Streams—Middle Creek Study (CWC No. 108). This continuing study by the Corps of Engineers is important to the restoration and protection of Clear Lake. Middle Creek flows into Clear Lake which drains into Cache Creek, tributary to the

Sacramento River. Clear Lake is the largest natural lake entirely within the borders of California, and possibly the oldest lake in North America.

The Middle Creek Flood Control Project was constructed by the Corps of Engineers in the early 1960s to provide flood protection to the community of Upper Lake and the surrounding agricultural lands. The project is owned by the California Reclamation Board and maintained by the Lake County Flood Control and Water Conservation District. Channelization and the loss of natural floodplain and wetlands have caused substantial quantities of nutrient-rich sediment to be transported into Clear Lake resulting in degraded water quality in the lake and the growth of nuisance blue-green algae. In the past, approximately 85 percent of the historic emergent wetlands around Clear Lake have been lost or severely degraded. Prior to channelization of Middle Creek, flows spread out over a wide floodplain and marsh. Middle Creek Marsh was a significant wetland system that provided natural biologic and habitat values, marsh land which filtered and trapped sediments, and natural flood attenuation. The current creek study by the Corps of Engineers is evaluating alternatives for restoring Middle Creek Marsh. Restoration would contribute to the goals of Lake County to reduce the flood risk of subsiding levees adjacent to the historic marsh, to improve water quality in Clear Lake, and to enhance the Clear Lake Basin ecosystem for the next generations.

The Clear Lake basin watershed is our County's and region's most important natural resource and economic asset. The sustainability of our future is tied largely to the water quality and ecosystem health of Clear Lake, and we trust that you will agree with the critical importance of restoring and protecting this vital resource with the requested funding. Thank you for this opportunity to testify.

PREPARED STATEMENT OF MARC HOLMES, DIRECTOR, PARTNERSHIP FOR THE SAN PABLO BAYLANDS

Mr. Chairman, Members of the Subcommittee, my name is Marc Holmes. I am the Director of the Partnership for the San Pablo Baylands. The Partnership for the San Pablo Baylands works to preserve, enhance and restore wildlife habitats and agriculture in this rural region in northern San Francisco Bay.

The Partnership believes it is critical to preserve agriculture in the region not only because it provides significant extensive economic benefits, but because it enhances habitat values and preserves the area's open space and scenic beauty.

To help meet our program mission and goals, the Partnership is seeking the assistance of the Committee on two funding requests for fiscal year 1998.

First, the Partnership is seeking $300,000 in fiscal year 1998 from the Corps of Engineers under General Investigations to enlist the technical assistance of the Corps to help the Partnership develop a watershed restoration/protection project in the San Pablo Bay watershed. Specifically, the Corp's assistance is needed to examine opportunities for wetlands and riparian restoration activities, and the need to stabilize and/or modify the existing levee system for the benefit of wildlife habitat and continued agricultural uses.

Last year the Partnership sought from Congress specific authority for the Corps to participate in this project. That authority was granted to the Corps in Section 503 of the Water Resources Development Act of 1996. Now we are seeking a modest appropriation to allow the Corps to become a partner in this important project.

Your favorable consideration of this appropriation would be appreciated.

Our second request is for $300,000 for the Partnership for the San Pablo Baylands for the Bureau of Reclamation under General Investigation (Mid-Pacific Region) to prepare a study of water reclamation and reuse opportunities in Sonoma County. The San Pablo Baylands area, like so many areas in the State, is water short. While recycled water may provide a new source of supply, there are a number of implementation issues that must be addressed to determine the practicality of increasing development and use of recycled water. These include the proximity of the supply to the potential users, the cost of delivered recycled water, water quality, and the flexibility and reliability of the supply.

The funds requested in fiscal year 1998 are needed to enable the Bureau of Reclamation to assist the Partnership and its partner, the Sonoma County Water Agency, to investigate these technical issues that must be addressed before the use of recycled water can be expanded in the region.

Again, the Partnership would appreciate the Committee's favorable consideration of these requests, and I appreciate the opportunity to submit this testimony on behalf of the Partnership for the San Pablo Baylands.

PREPARED STATEMENT OF RICHARD FULSTONE, CHAIRMAN, WALKER RIVER BASIN WATER USERS ASSOCIATION

Mr. Chairman, Members of the Committee, my name is Richard Fulstone. I am the chairman of the Walker River Basin Water Users Association, a group comprised of virtually all of the farmers and ranchers in the Walker River Basin, from both California and Nevada. The Walker River Basin Water Users Association's membership includes approximately 600 water right holders, as well as public agencies such as Mono County, California, and the Mason and Smith Valley Soil Conservation Districts.

On behalf of the Walker River Basin Water Users Association, I would like to request your assistance in securing funding for two projects of great importance to our area that fall within the jurisdiction of the Appropriations Subcommittee on Energy and Water Development.

First, I request that you seek $600,000 for the Walker River Basin, Nevada study being conducted by the U.S. Army Corps of Engineers. The Committee's past support for this important study is greatly appreciated. The $600,000 we are seeking represents a $300,000 increase above the amount included in the President's budget request for fiscal year 1998. These additional funds are needed to expand the reconnaissance study to enable the Corps to develop additional information on the hydrologic and hydraulic conditions in the basin. This information is key to the completion of a meaningful reconnaissance study and is needed before the study can move into the feasibility phase.

As you know, the Walker River Basin experienced serious flooding in January of this year due to higher than normal snowfall followed by unseasonably warm rainy weather. Flooding occurred in the town of Yerington causing temporary closure to area schools and businesses. Over 300 people were evacuated and damages were sustained to agricultural resources and urban and rural structures. Additionally, Walker Lake is becoming increasingly saline. The Corps of Engineers' study is important because it is taking a basin-wide approach to developing solutions to these and other water resource problems that exist along Walker River and in Walker Lake. It is also helping those of us who live and work here in the Walker River Basin to fill some of the key informational gaps about the basin that currently exist.

Second, I request that you seek $300,000 for Walker River Basin, Nevada for the Bureau of Reclamation, under the Construction Program, to support a water conservation demonstration program in the basin. The program is being managed by the Walker River Basin Water Users Association and the Walker River Irrigation District, and is promoting a voluntary approach to water conservation. Federal support is needed to identify the universe of the most effective conservation practices applicable to the Walker River Basin and to better quantify the contribution that conservation can make to solving the water resource problems in Walker Lake and the basin as a whole. The demonstration program will be coordinated with the State of Nevada, the Mason and Smith Valley Conservation Districts, and the United States Department of Agriculture's Natural Resource Conservation Service. This is an important initiative and your support at this early stage of its development would be greatly appreciated.

Thank you for this opportunity to testify. We would greatly appreciate the Committee's continued assistance as we seek to address the many important water resource challenges in the Walker River Basin.

PREPARED STATEMENT OF LARRY T. COMBS, COUNTY ADMINISTRATIVE OFFICER, COUNTY OF SUTTER, CA

We appreciate the committee's ongoing interest in flood control issues in California. The floods of January 1997 underscored once again the critical need to ensure adequate flood protection for many of our communities.

As you know, the fiscal year 1998 budget included $7,300,000 for Marysville/Yuba City Levee Reconstruction (phase 2, contract #3). In light of the recent winter flooding, the California Water Commission is recommending an additional $2,000,000 in fiscal year 1998 in order to expedite construction at more project sites so that critical levee areas can be repaired and improved prior to the 1998 high water season. We strongly support the budget request and the CWC's recommendation to add $2,000,000 in fiscal year 1998 to expedite additional construction.

At the same time, during January's high river flow, when Feather River (on the Yuba County side) and Sutter Bypass (in Sutter County) levees failed, flooding thousands of acres of land in Sutter County, several non-project levee sites showed extreme distress. In particular, five Feather River levee sites experienced extensive seepage, a series of boils, or sloughing at the toe of the levee. These sites include

the levee between the 10th Street Bridge and Lynn Way in Yuba City, and the levees at Burns Drive, Shanghai Bend, Star Bend and Laurel Avenue. Extensive emergency flood fighting was conducted during the high river period at these sites. The assessment of expert engineers hired by one of our local levee districts is that these sites will not likely withstand another high water season, even with flood fighting efforts. The Army Corps of Engineers' representatives have also acknowledged that these sites are highly problematic and need immediate attention.

With these factors in mind, we are currently in the process of working with the Corps of Engineers to repair these damaged levees through the Corps' emergency levee repair programs (Public Law 84–99). We hope each of the five additional levee sites just mentioned will be reconstructed with emergency The Honorable Pete V. Domenici March 28, 1997 Page 2 funds. However, we are not sure that all of these sites will meet the criteria for expedited reconstruction under the emergency repair program.

With this in mind, we are requesting that an additional $2,000,000 be added to the Marysville/Yuba City Levee Reconstruction budget request and CWC recommendation for a total of $11,300,000 in fiscal year 1998. Further, we are asking that this additional funding be accompanied by report language indicating the need to repair the five additional sites (or those not covered by the Corps' emergency reconstruction program) before the 1998 high water season.

We deeply appreciate the committee's past support of Sutter County's and Yuba City's levee reconstruction program and look forward to your continued support during consideration of the fiscal year 1998 Energy and Water Development Appropriations bill.

PREPARED STATEMENT OF ROBERT E. EICHBLATT, CITY ENGINEER, CITY OF HUNTINGTON BEACH, CA

Dear Mr. Domenici: We are writing to request $300,000 and the enclosed language be included in the fiscal year 1998 Energy and Water Development Appropriations Bill for the Corps of Engineers to initiate a cost-shared Feasibility Study for Federal assistance in a project to protect the Huntington cliffs coastline, in Huntington Beach, California.

The Corps of Engineers completed a Reconnaissance Study in 1995 on the Federal interest in improvements to reduce the potential for coastal erosion and storm damage to City facilities and Pacific Coast Highway. This study indicated that there is potential for substantial erosion and storm damage to public properties and uses of the bluff area, and that plans to reduce damage potential appear to be justified. However, the Corps did not recommend proceeding to the Feasibility Study phase because the most cost effective plan identified at that time was relocation of public facilities, which they claimed is a local responsibility. They also claimed that most of the benefits that would result from the shore protection improvements were associated with reducing the loss of public access and use of the bluff for recreation, which they claimed is a low priority for the administration.

Since completion of the Corps of Engineers Reconnaissance Report, the cliffs have experienced further significant erosion during coastal storms. This erosion created eight new embayments, resulting in the undermining of pedestrian, and bike trails, and damaging other public facilities. This has required the City to close public access to these popular coastal areas, which were being used by about a million people per year. We are concerned that additional storms will continue to damage these facilities, as well as adjacent parking areas, utilities, and perhaps in the not so distant future, threaten Pacific Coast Highway. The significant erosion that occurred during recent events also demonstrates that relocation of the facilities, which was considered in the Corps of Engineers study, is no longer a reasonable alternative. Accordingly, the City would like the Corps to proceed with the Feasibility Study Phase.

The City of Huntington Beach understands that the Feasibility Study Phase requires a non-federal sponsor to provide 50 percent of the cost of the study, and that one-half of the non-federal share of the cost can be in kind services performed by the City.

The City would be willing and able to provide the non-federal share, subject to our negotiating the study program with the Corps of Engineers, including costs and schedule.

If we can provide you with any additional information, please let us know. Thank you for your attention to this matter. We look forward to hearing from you.

PREPARED STATEMENT OF THOMAS W. WILSON, SUPERVISOR, FIFTH DISTRICT, ORANGE COUNTY HALL OF ADMINISTRATION, SANTA ANA, CA

NEWPORT BAY, CALIFORNIA, FEASIBILITY STUDY AND AQUATIC ECOSYSTEM RESTORATION PROJECT

Mr. Chairman: We support the $270,000 included in the President's budget request for the Newport Bay feasibility study in Orange County, CA. Additionally, we request that the Committee add $5 million to dredge the sediment basin in Upper Newport Bay.

Section 206 of the Water Resources Development Act of 1996 authorizes the Corps to participate in aquatic ecosystem restoration projects. Dredging the Upper Bay basin will restore critical marine habitat which has been impacted by sediment from the San Diego Creek watershed.

The State of California, Orange County, the cities of Irvine, Tustin, Newport Beach, and the Irvine Company participated in funding a Clean Water Act Section 208 program for the Upper Newport Bay. This program was successfully implemented in 1985, restoring 752 acres of marine and shoreline wildlife habitat which is now managed by the California Department of Fish and Game. Additionally, more than $100 million has been spent upstream to control sediment.

The existing sediment basin in the Upper Bay must be cleaned out and deepened to include a new 61-acre deep water marine habitat zone. The resulting improved sediment storage capacity will reduce future clean out frequency and lower the long-term cost of maintenance. Approximately 650,000 cubic yard of sediment will be moved.

We appreciate your past support for the Newport Bay study, and look forward to your added support of $5 million for aquatic ecosystem restoration in the Upper Newport Bay.

PREPARED STATEMENT OF DICK LYON, MAYOR, CITY OF OCEANSIDE, CA

The City of Oceanside and the Oceanside Harbor District request your support of $1,100,000 as an addition to the fiscal year 1998 budget for the Oceanside Harbor Maintenance and Operation Dredging Program. The funds for this project are not included in the Administration budget.

In 1960, Congress authorized full federal funding for maintenance of the Oceanside Harbor entrance (House Document 456, 86th Congress, 2nd Session, Public law 85–500.) in recognition of the fact that the Harbor entrance was constructed as an emergency wartime measure in 1942. To this day, the Oceanside Harbor entrance continues to serve the vital military installation of Camp Pendleton Harbor. In 1992, the Harbor District partnered with the federal government in a local cost share agreement to modify the harbor entrance and the authorized channel depth to reduce storm damage, provide surge protection to the harbor's infrastructure and provide significant reduction of navigational hazards that have produced 11 deaths, 49 serious injuries, 134 boating accidents and $1,500,000 of damage to vessels in the harbor entrance.

The harbor expansion project included an expanded dredge area within the federal navigation channel and an increase in the dredge frequency from once a year to twice each year.

It is imperative that the federal government uphold the long-standing legislative commitment that it made. It was because of this commitment that the Harbor District agreed to fund the local cost share ($1,600,000) of the harbor expansion project.

The history of federal legislative commitment combined with local government commitment of resources is significant. The Harbor District has no plans to reduce its commitment to the harbor and it is of the utmost priority that the federal government maintain its obligations and commitments.

Oceanside Harbor would experience severe negative impacts should the dredging project not be funded. Such action would prevent access to the Pacific Ocean to the United States Navy and Marine Corps as joint users of the entrance channel, as well as the U.S. Coast Guard Cutter Point Hobart, which is also based in Oceanside. The economic impact upon the local fishing fleet, the commercial sportfishing fleet and the 1,000 recreational vessels berthed here, as well as the businesses supported by the harbor, would be critically impacted.

The maintenance program is essential for the safe navigation into Oceanside Harbor and the U.S. Marine Corps Base Camp Pendleton Harbor. The program also provides the associated commerce and recreational benefits to our community.

Thank you for the opportunity to provide this testimony and for your consideration of the request.

PREPARED STATEMENT OF DICK LYON, MAYOR, CITY OF OCEANSIDE, CA

The City of Oceanside requests the Subcommittee's support for $5,400,000 as recommended in the President's fiscal year 1998 budget for the final phase of construction of the San Luis Rey River Flood Control Project in Oceanside, California. This project provides 5.4 miles of double levee, stone protection with a soft bottom channel, 1,330 feet of parapet walls, six interior drainage ponds, a five-mile bicycle trail, and habitat to mitigate for impacts to the endangered least Bell's vireo. Over 90 percent of construction on this project has been completed. The remaining portion of the project is the closure of a small segment of levee, construction of the lower pond, installation of relief wells and additional environmental measures. With the proposed funding, construction of the project can be completed by December, 1997.

The City of Oceanside has appreciated the strong support that the Subcommittee has offered this project over the years. Completion of the San Luis Rey River Flood Control Project will provide flood protection to over 100 businesses in the Oceanside Industrial Park and Oceanside Municipal Airport area. This flood protection will not only provide a tremendous economic benefit to the citizens of Oceanside, but will also protect life and property against devastating floods.

Thank you for your continued support for this important project.

LOCAL HIGH QUALITY WATER FOR THE CITY OF OCEANSIDE

MISSION BASIN DESALTING FACILITY

The City of Oceanside owns and operates the 2 million gallon per day Mission Basin groundwater desalting facility, located near Fireside Drive in Oceanside.

Under current operations, approximately 1.9 million gallons per day (mgd) of demineralized groundwater supply is produced from treating brackish groundwaters in a reverse osmosis treatment facility.

Because of the successful operation of the existing plant over the last three years, the City proposes to expand the production capacity of the groundwater desalting program.

This local water supply provides both a daily potable water supply and an emergency water supply.

Without the City's desalting facility, in the event of a short or long term imported water supply emergency, Oceanside would only have a few hours to supply its citizens fire protection and essential water needs.

Local water supply

In early 1994 the City of Oceanside commenced producing local water from the Mission Basin Aquifer.

Established by 100 year old water rights, this large, dependable water supply holds at least 29,982,800,000 gallons or 92,000 acre feet of water.

The first expansion of the facility is in the design phase and is expected to provide up to 6.3 million gallons per day (mgd) or 22 percent of the City's daily average demand.

The additional water supply will be available by late 1998.

Oceanside will continue to develop this excellent resource in the future.

It is anticipated that at least 50 percent of Oceanside's future water supply can be derived from this source.

Water quality produced by the facility will be much better than the water quality that is available from imported sources.

The water quality of the City's imported source is approximately 600 to 700 parts per million of total dissolved solids (TDS) whereby the water quality of the local supply will be between 400 to 500 TDS.

This will enhance the City's ability to reclaim its wastewater which will be used for a sea water barrier on the downstream side of the Mission Basin Aquifer, and will also be utilized for maintaining an environmentally safe water level in the aquifer.

Oceanside's local water supply has received support from many agencies including the state of California, which loaned the City five million dollars to build the original facility over two years ago.

The Metropolitan Water District of Southern California and the San Diego County Water Authority have assisted by paying the difference between the cost to produce the local water and the cost to buy imported water since the startup of the plant.

Neighboring local agencies such as Carlsbad, Vista Irrigation, and the San Diego County Water Authority along with Federal, State and Local government representatives worked closely with Oceanside when developing the original project.

Oceanside recently signed an agreement with Marine Corp Base Camp Pendleton to provide Camp Pendleton up to 2 mgd of emergency water.

This local water supply saves the City $150,000 per year today and will save at least $500,000 per year when it is expanded to 6.3 mgd.

These savings will help keep Oceanside's rates very comparable to or lower than average rates when compared with surrounding communities.

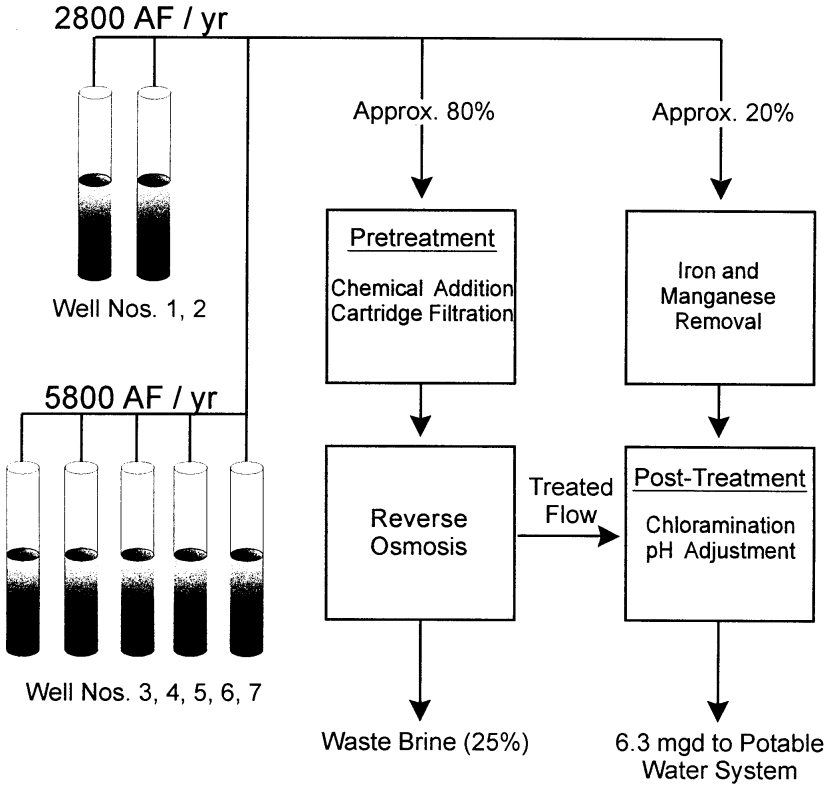
REQUEST FOR FUNDING

The cost to construct the Oceanside Desalting Facility first expansion is approximately 6 million dollars.

In future years the City expects to expand the facility up to over 20 million gallons per day. The estimated cost to do so will exceed 20 million dollars.

For the first phase expansion, the City requests that the Federal Government appropriate 1.5 million dollars to cover the 25 percent share of the 6 million dollars needed to construct the project. The request is to obtain this funding in fiscal year 1998.

PROCESS SCHEMATIC



PREPARED STATEMENT OF SANDRA Y. MARKER, MAYOR, TOWN OF CORTE MADERA, CA

The Town of Corte Madera, California requests that the Subcommittee support a budget allocation in fiscal year 1998 of $150,000 to complete the Feasibility Report

for the San Clemente Creek Tidal Storm Damage Reduction Study. The project name is Marin County Shoreline—San Clemente Creek, CA.

The Town of Corte Madera is located on San Francisco Bay just north of the Golden Gate Bridge. The Town has experienced repeated flooding in the last 50 years. The most recent devastating floods occurred in 1982 and 1983. Such flooding is becoming increasingly worse due to continuing subsidence, increasing sea level rise and storm water runoff. Serious damage on a regular basis is predicted in the next decade if a Federal storm damage and coastline protection project is not completed. Tidal flooding now occurs even in dry weather. Without a permanent solution, the losses to properties will be severe. Current damage estimates from a 100 year storm are $1.5 million. By the year 2035, damage estimates total at least $4.6 million for each 100 year storm event. Ultimately, hundreds of property owners will face the total loss of their homes. Public and commercial property will suffer heavy damage resulting in a substantial loss of the tax base. The apparent project benefit cost ratio is 2.5 to 1.

The Town of Corte Madera is committed to insuring public safety. To that end, the Town and the U.S. Army Corps of Engineers negotiated a Cost Sharing Agreement to conduct a Feasibility Study to define the federal interest and to develop a protection project plan.

The Town Council approved the Cost Sharing Agreement and paid its full share of all local costs and is prepared to pay its full share of Pre-Engineering and Design, and Construction costs when those project phases are reached.

The Subcommittee provided appropriations to initiate the Feasibility Study in 1993. The California Marine Affairs and Navigation Conference is supporting the $150,000 which is included in the President's fiscal year 1998 Budget to complete the Feasibility Study.

We respectfully request that you support a fiscal year 1998 appropriation of $150,000 to complete the Marin County Shoreline—San Clemente Creek CA Feasibility Study.

Thank you very much for your continuing support for this public safety project.

PREPARED STATEMENT OF CHUCK HAMMOND, MAYOR, CITY OF FAIRFIELD, CA

Mr. Chairman, Members of the Subcommitee, my name is Chuck Hammond. I am the Mayor of the City of Fairfield, California. The City of Fairfield is seeking the assistance of the Committee in funding two projects in the fiscal year 1998 energy and water appropriations bill.

First, I request the support of the Committee for the Northern California Streams, Fairfield Streams and Cordelia Marsh, California study. The budget request includes $250,000 for this important study. The study will investigate and seek to develop a comprehensive solution to the flooding, drainage problems, environmental degradation and other water resource problems found within the Fairfield Streams and Cordelia Marsh sub-basin. Flooding and erosion have been persistent problems in the area and the results of this study, we believe, will be key to the development of an effective and permanent solution to this pervasive problem.

Second, I request the Committee's support for one new, related initiative. Specifically, I request that the Committee provide $500,000, under the Corps of Engineers, Section 206 program, for the Fairfield Streams and Suisun Marsh Watershed Demonstration Project. The project seeks to build on the work of the aforementioned study and the work of the City of Fairfield to develop a solution to the problem of siltation in Suisun Marsh.

The Suisun Marsh is the largest tidal wetland in the State of California and is considered a natural resource of national importance. The marsh includes more than 2,500 acres of managed wetlands and uplands that support habitat for migratory waterfowl. It is a critical part of the Pacific Flyway. Yet, an estimated 200 acres of valuable wetlands in Suisun Marsh have been ruined by the inflow of silt from surrounding streams over the last two years.

The project will provide for the design and construction of sediment containment ponds upstream of Suisun Marsh. Specifically, one proposal calls for the construction of a sediment containment pond on Hennessey Creek. Hennessey Creek is a tributary to Green Valley Creek, which flows directly into the northern portion of Suisun Marsh. The City of Fairfield has been monitoring water quality in Hennessey Creek during rainfall events. On December 12, 1995, for example, the total suspended solids (TSS) in Hennessey Creek were measured at 12,344 milligrams per liter of water. On January 16, 1996, the TSS were 19,700 milligrams per liter of water. On March 4, 1996, the TSS were 15,620 milligrams per liter of water.

As a comparison, the California Regional Water Quality Control Board has stated that the TSS should not exceed 100 milligrams per liter.

Clearly, construction of a sediment pond on Hennessey Creek would significantly reduce one major source of sedimentation in Suisun Marsh. And, it is critical that we construct this and other such ponds as soon as possible. Continuing to lose 200 acres of valuable wetlands every few years is not acceptable. That is why we are seeking to accelerate the construction of some portion of the solution.

A demonstration project like the one I have described clearly qualifies for funding under the Section 206 authority. The project is environmentally beneficial, economically justified and in the public interest, the three criteria for funding under Section 206. Further, it is our expectation that the aforementioned Northern California Streams, Fairfield Streams and Cordelia Marsh, California study, the first phase of which will be concluded by the end of the current fiscal year, will include a recommendation that such a demonstration project be initiated using the Section 206 authority. For all of these reasons, we ask that the Committee provide $500,000 for this important project.

Again, I appreciate the opportunity to testify on behalf of the City of Fairfield, and I urge your support for these two priority projects for our region.

PREPARED STATEMENT OF KEITH ISRAEL, GENERAL MANAGER, MONTEREY REGIONAL WATER POLLUTION CONTROL AGENCY

Mr. Chairman, thank you for the opportunity today to provide this testimony for inclusion in the hearing record on the fiscal year 1998 Energy and Water Development appropriations bill. Monterey Regional Water Pollution Control Agency (MRWPCA), a joint-powers entity formed under the laws of the State of California, was created in 1971 to implement a plan that called for consolidation of the Monterey Peninsula and northern Salinas Valley wastewater flows through a regional treatment plant and an outfall to central Monterey Bay. The plan also required studies to determine the technical feasibility of using recycled water for irrigation of fresh vegetable food crops (artichokes, celery, broccoli, lettuce, and cauliflower) in the Castroville area. These studies were initiated in 1976 and included a five-year full-scale demonstration of using recycled wastewater for food crop irrigation. California and Monterey County health departments concluded in 1988 that the water was safe for food crops that would be consumed without cooking. Subsequently, the Salinas Valley Seawater Intrusion Committee voted to include recycled water in their plan to slow seawater intrusion in the Castroville area.

The project will ultimately provide 19,500 acre-feet of recycled water to land south and west of Castroville where abandonment of wells threatens agricultural production and the loss of a portion of rural America. It will also reduce discharge of secondary treated wastewater to the recently-created Monterey Bay National Marine Sanctuary. The California State Water Resources Control Board specifically indicated its strong support for the Salinas Valley Reclamation Project in a 1994 letter to the U.S. Bureau of Reclamation.

Before continuing, let me express my sincere appreciation for your continued support for the Small Reclamation Projects Loan Program, and specifically, the funding for the Salinas Valley Reclamation Project. During the past three years, this subcommittee provided $3.5 million for our project. I am pleased to report that the funds appropriated thus far are being well spent on our project which began construction in August 1995. We are on schedule and are looking forward to startup of the completed project by early September, 1997. Construction of our project is now over 75 percent complete.

As in the past, we have been in close consultation with the Bureau of Reclamation and the other Small Reclamation Projects Loan Program participants in an attempt to provide the Committee with a consensus budget request that has the support of the Administration and the Loan Program participants. Based on these discussions, the Administration has requested, with our support and endorsement, sufficient funding for the Salinas Valley Reclamation Project as part of the Bureau of Reclamation's Public Law 84–984 Small Reclamation Projects Loan Program for continuation of loan obligations. This appropriation amount, $1.3 million, when combined with other federal funding which is available from the U.S. Treasury pursuant to the Federal Credit Reform Act of 1990, will yield a total loan amount that we believe will meet the federal government's commitment for fiscal year 1998. The amount requested, when combined with the additional Treasury portion, is intended to fulfill the Bureau's third-year loan commitment for assistance to construct the project. As I indicated, the funding request is the result of a lengthy and complex financial agreement worked out with the other Loan Program participants and the

Bureau. The agreement represents the absolute minimum annual amount necessary to continue with the project. The MRWPCA worked under the premise of accommodating the Bureau of Reclamation's budgetary constraints and is expending consideration local funds to bridge the federal government's budgetary shortfall. Any additional cuts in federal funding will jeopardize the complex financing plan for the project.

The MRWPCA has received Federal Grant and Loan Funds in Federal fiscal year 1995, fiscal year 1996, and fiscal year 1997 through February 28, 1997, as follows:

	Fiscal year			
	1995	1996	1997	1998
SVRP: USBR	$900,000	$1,100,000	$1,500,000	[1] $1,300,000
SVRP: Treasury	570,000	880,000	1,561,000	.....
FEMA	.....	16,805	1,492	.....
EPA	.....	30,144	.....	.....

[1] Requested

Even though the additional private debt service will increase the project costs, the critical problem of seawater intrusion demands that the project be continued. The Bureau of Reclamation loan is a crucial link in project funding, and it is imperative that annual appropriations, even at the planned reduced rate over eight years, continue. The federal funds requested under the Public Law 84–984 program will be repaid by landowners in the Salinas Valley with assessments that are currently in place. Local funds totaling $18.6 million have already been spent getting to this point.

Mr. Chairman, we urge you and the members of the subcommittee to give your continued support to the Small Reclamation Projects Loan Program, and specifically, funding for the Salinas Valley Reclamation Project. Your support and continued assistance for this critical project is greatly appreciated.

PREPARED STATEMENT OF MICHAEL D. ARMSTRONG, GENERAL MANAGER, MONTEREY COUNTY WATER RESOURCES AGENCY

Mr. Chairman, thank you for the opportunity to provide testimony for inclusion in the hearing record of the fiscal year 1998 Energy and Water Development Appropriations bill. The people of the Salinas Valley in California's 17th Congressional District appreciate your willingness to accept our statements in support of the Castroville Seawater Intrusion Project. I would further like to express our deep appreciation for this subcommittee's efforts on past Energy and Water Development Appropriations bills. I am pleased to report that the project is approximately 85 percent complete and that project construction is on schedule to be completed in July 1997.

As with the past three years the Monterey County Water Resources Agency has worked diligently to present the committee with an fiscal year 1998 funding request that is supported by the Administration as well as all the other Small Reclamation Loan Program participants. Through close consultation with the Bureau of Reclamation and other Program participants, we have developed the funding plans that were included in the President's fiscal year 1998 budget for the Public Law 84–984 Small Reclamation Loan Program. I therefore respectively request that the Subcommittee provide the full Administration request for the project of $2.1 million.

This is the fourth year of an eight year fiscal strategy designed to meet the requirements of all the projects in the Program while recognizing the fiscal constraints facing all levels of government. Originally, the Program was to provide all appropriations ($16,500,000) over a three year period. During the past three years this subcommittee provided $4.564 million for our project. The current appropriation amount of $2.1 million, when combined with other federal funding which is available from the U.S. Treasury in the amount of $2.12 million pursuant to the Federal Credit Reform Act of 1990, should yield a total loan amount of $4.22 million for fiscal year 1998 that will allow the project to proceed on schedule.

The Monterey County Water Resources Agency is a local government entity formed under the Monterey County Water Resources Agency Act. It is an agency with limited jurisdiction involving matters related primarily to flood control and water resources conservation, management, and development. The Salinas Valley is a productive agricultural area that depends primarily on ground water as a water supply. The combination of the Valley's rich soils, mild climate, and high quality

ground water makes this valley unique among California's most fertile agricultural lands and has earned the Valley the distinction as the "Nation's Salad Bowl." As agricultural activity and urban development have increased in the past forty years, ground water levels have dropped allowing seawater to intrude the coastal ground water aquifers. Seawater intrusion is extensive adjacent to the coast near the town of Castroville. The Castroville Seawater Intrusion Project will provide 19,500 acre-feet of recycled water for agricultural irrigation to over 12,000 acres and help solve the seawater intrusion problem by greatly reducing groundwater pumping in the project area. The California State Water Resources Control Board specifically indicated its strong support for the Castroville Seawater Intrusion Project in a 1994 letter to the USBR. The Castroville Seawater Intrusion Project is an essential component in the MCWRA's plan to deal with basin-wide ground water overdraft and seawater intrusion.

The amount requested in fiscal year 1998, when combined with the additional Treasury portion, is intended to fulfill the Bureau's fourth year loan commitment for assistance to construct the project. As I stated, the funding request that we anticipate is the result of a lengthy and complex financial agreement worked out with the other Loan Program participants and the Bureau. The agreement recognized the tight federal budgetary constraints and represents the absolute minimal annual amount necessary to proceed with the project. The MCWRA has been extremely accommodating of the Bureau's budgetary constraints and has agreed to expend considerable local funds to bridge the federal government's budgetary shortfall. Any additional cuts in federal funding will jeopardize the complex financing plan for the project.

In August 1992, the original loan request was submitted to the Bureau. Subsequent approval was received from the Secretary of the Interior in May 1994. Through extensive discussion and negotiations between the MCWRA and the Bureau, a project financing plan was created. The Bureau made it quite clear that the original provisions in the loan application of full disbursement during the three years of construction could not be met due to federal budget shortfalls. As defined in the new repayment contract, the Bureau will disburse funds to the MCWRA over an eight-year period. This means that the MCWRA will receive these funds for five years after the project is operational. This also required that the MCWRA had to acquire "bridge financing" to meet the needs of the Castroville Seawater Intrusion Project construction costs. Even though the additional private debt service has increased the project costs, the critical problem of seawater intrusion demands that the project proceed. The Bureau loan is a crucial link in project funding, and it is imperative that the annual appropriations, even at the planned reduced rate over eight years, continue. Federal appropriations have been received in fiscal years 1995, 1996, and 1997 as shown in the table below and must continue in subsequent years in accordance with the negotiated agreement in order for the projects to be successful. The federal funds requested under the Public Law 84–984 program will be repaid by landowners in the Salinas Valley with assessments that are currently in place. The Monterey County Water Resources Agency has spent approximately $35.4 million of its own funds getting to this point.

FEDERAL APPROPRIATIONS [1]

[In millions]

	Received			Requested 1998	Total
	1995	1996	197		
CSIP	$1.064	$1.5	$2.0	$2.1	$6.664

[1] Does not include Treasury portion which totals $4.032 million through fiscal year 1997.

Mr. Chairman, we urge you and the members of the subcommittee to give your continued support to the Small Reclamation Program and urge the inclusion of funds for the Castroville Seawater Intrusion Project. Without your continued support, we will not be able to realize the benefit of the work completed over the past several years and the Salinas ground water basin will continue to deteriorate, creating a significant threat to the local and state economies as well as to the health and welfare of our citizens.

Again, thank you for your support and continued assistance.

LETTER FROM JOSEPH L. CAMPBELL, PRESIDENT, CONTRA COSTA WATER DISTRICT

MARCH 11, 1997.

Hon.PETE DOMENICI,
Chair, Senate Energy and Water Development Appropriations Subcommittee, United States Senate, Washington, D.C.

DEAR SENATOR DOMENICI: On behalf of the Contra Costa Water District this letter serves as testimony to the Energy and Water Development subcommittee regarding the Contra Costa Canal fish screen project for fiscal yar 1998. The Contra Costa Water District requests that you include an appropriation of $2.5 million in funding for the third year of work on the design and construction of the Contra Costa Canal intake fish screen project. The Secretary of Interior is required to build the screen by Section 3406(b) of Public Law 102–575, Central Valley Project Improvement Act (CVPIA). The project will screen the diversion for the Contra Costa Canal, the principal intake facility for the 400,000 people served by the District.

Because a 1998 deadline was established by the Fish and Wildlife Service for completion of this facility, it is imperative that sufficient funding be appropriated in the coming year to allow the project to move forward at maximum feasible speed

Congress recognized this need in the previous two budgets. In fiscal year 1996 $80,000 was appropriated to begin the project. For fiscal year 1997, Congress appropriated $500,000. This has enabled the development and design work to move forward rapidly for this important project, which will screen the largest M&I Intake in the Delta.

The State of California is working with the Contra Costa Water District to assure that the required state funding is available at an appropriate time to complete this facility. Voters in the state of California confirmed their willingness to support such projects last November when they passed Proposition 204 by a substantial margin. Prop. 204 provides funds for the necessary state match for CVPIA projects, including the Contra Costa Canal Fish Screen. Moreover, Prop. 204 gives priority to projects such as the Contra Costa Canal Fish Screen which have specific dates established for their completion

To assure that this important project is completed on or near the established schedule and that the water supplies for 400,000 people in Contra Costa County are not jeopardized the District requests your committee's support for the appropriation of sufficient funds to move this project forward in a rapid manner.

Sincerely,

JOSEPH L. CAMPBELL,
President, Board of Directors.

PREPARED STATEMENT OF AL DONNER, DIRECTOR, PUBLIC AFFAIRS, CONTRA COSTA WATER DISTRICT

The Contra Costa Water District appreciates the support provided in the past two fiscal years by the California Water Commission for the fish screen on the Contra Costa Canal intake on Rock Slough. The Contra Costa Canal is the largest Central Valley Project intake serving a municipal and industrial water supply in the Delta. The fish screen is required by the Central Valley Project Improvement Act (CVPIA). The project has a deadline for completion of October 1, 1998, established by federal agencies. Because the intake is central to the water supply for 400,000 people and the major industries in Contra Costa County, it is vital that the fish screen be completed as rapidly as possible to avoid jeopardizing the District's water supply. Matching funds are available from the state under Proposition 204, which gave it a priority.

For fiscal year 1998, the District requests the Commission's support for a federal appropriation of $2,500,000. This is the sum which the US Bureau of Reclamation design team anticipates will be needed to keep the project on schedule as it moves into construction during fiscal year 1998. Commission support for an appropriation at that level will be important to the District in convincing Congress to make an adequate appropriation to keep the project on schedule. With the Commission's assistance and support, the District believes that this project can be completed in the near future and thereby protect the water supply for the Contra Costa Water District and also provide the additional protection that the CVPIA envisioned for the vital Delta fishery.

The District very much appreciates your support and will continue to work the Commission.

PREPARED STATEMENT OF SANDRA Y. MARKER, MAYOR, TOWN OF CORTE MADERA, CA

The Town of Corte Madera, California requests that the Subcommittee support a budget allocation in fiscal year 1998 of $150,000 to complete the Feasibility Report for the San Clemente Creek Tidal Storm Damage Reduction Study. The project is listed under Marin County Shoreline—San Clemente Creek, CA.

The Town of Corte Madera is located on San Francisco Bay just north of the Golden Gate Bridge. The Town has experienced repeated flooding in the last 50 years, the most recent devastating floods occurred in 1982 and 1983. Such flooding is becoming increasingly worse due to continuing subsidence, increasing sea level rise and storm water runoff. Serious damage on a regular basis is predicted to occur in the next decade if preventive measures are not taken now. Tidal flooding now occurs even in dry weather. Without a permanent solution, the losses to properties will be severe. Current damage estimates from a 100 year storm are $1.5 million. By the year 2035, damage estimates total at least $4.6 million for each 100 year storm event. Ultimately, hundreds of property owners will face the total loss of their homes. Public and commercial property will suffer heavy damage resulting in a substantial loss of the tax base. The apparent project benefit cost ratio is 2.5 to 1.

The Town of Corte Madera is committed to maintaining the community's safety and quality of life. To that end, the Town and the U.S. Army Corps of Engineers negotiated a Cost Sharing Agreement to conduct a Feasibility Study to define the flooding problem and to develop a plan for Congressional action.

The Town Council approved the Cost Sharing Agreement and paid its full share of all local costs and is prepared to pay its full share of Pre-Engineering and Design, and Construction costs when those project phases are reached.

With the assistance of the Subcommittee in the past, the Town secured funding to initiate the Feasibility Phase in 1993. This year, the California Marine Affairs and Navigation Conference is supporting the $150,000 included in the President's fiscal year 1998 Budget to complete the Feasibility Report.

We respectfully request that you support a fiscal year 1998 budget allocation of $150,000 to complete the Marin County Shoreline—San Clemente Creek CA Feasibility Study.

Thank you very much for your continuing support for this important project.

PREPARED STATEMENT OF THE IRVINE CO., NEWPORT BEACH, CA

Mr. Chairman: We support the $270,000 included in the President's budget request for the Newport Bay feasibility study in Orange County, California. Additionally, we request that the Committee add $5 million to dredge the sediment basin in Upper Newport Bay.

Section 206 of the Water Resources Development Act of 1996 authorizes the Corps to participate in aquatic ecosystem restoration projects. Dredging the Upper Bay basin will restore critical marine habitat which has been impacted by sediment from the San Diego Creek watershed.

The State of California, Orange County, the cities of Irvine, Tustin, Newport Beach, and The Irvine Company participated in funding a Clean Water Act Section 208 program for the Upper Newport Bay. This program was successfully implemented in 1985, restoring 752 acres of marine and shoreline wildlife habitat which is now managed by the California Department of Fish and Game. Additionally, more than $100 million has been spent upstream to control sediment.

The existing sediment basin in the Upper Bay must be cleaned out and deepened to include a new 61-acre deep water marine habitat zone. The resulting improved sediment storage capacity will reduce future clean out frequency and lower the long-term cost of maintenance. Approximately 650,000 cubic yard of sediment will be moved.

We appreciate your past support for the Newport Bay study, and look forward to your added support of $5 million for aquatic ecosystem restoration in the Upper Newport Bay.

PREPARED STATEMENT OF THE SAN JOAQUIN AREA FLOOD CONTROL AGENCY

Mr. Chairman, the San Joaquin Area Flood Control Agency (SJAFCA) supports the Administration's budget request of $450,000 for the Stockton Metropolitan Area flood control study. This will initiate the feasibility study for improvements to the flood protection system in the Stockton, California area.

This study will identify the federal project to restore an adequate level of flood protection in Stockton. The local sponsor has already responded to the flood threat

by initiating construction of approximately $70 million in project improvements, including raising levees and constructing detention basins. The local sponsor was compelled to expedite project improvements because of pending floodplain map revisions which would have designated the entire metropolitan area as a floodplain. Because local government has taken the lead on project improvements, construction will be completed within three years of notification that the existing flood protection system was inadequate.

SJAFCA has secured provisions in the Water Resources Development Act of 1996 to allow a local sponsor to be reimbursed for the federal share of project costs and receive credit for the appropriate local share. The study in the Administration's budget request is an important and necessary step in this process. This project demonstrates the expediency and cost-effectiveness of allowing a local sponsor to take the lead in constructing flood control projects.

We appreciate the Committee's past support, and we look forward to your continued support as the feasibility study is initiated in fiscal year 1998.

PREPARED STATEMENT OF THE CITY OF HUNTINGTON BEACH, CA

Mr. Chairman and members of the Subcommittee, the City of Huntington Beach appreciates your past support for the Infrastructure Seismic Reliability/Restoration Study which was initiated last year. The City requests $800,000 to complete the study in fiscal year 1998.

The Water Resources Development Act of 1990 (Public Law 101–640) and amendments in 1996 (Public Law 104–303) authorize the Corps of Engineers to address the seismic reliability and restoration of Southern California's public works infrastructure to ensure full service levels in the event of a major seismic event. The Huntington Beach study includes an assessment of conditions and parameters affecting the city's water, sewer, and drainage systems, as well as the emergency response infrastructure related to each of these systems. Conducting this study now and constructing the necessary improvements will significantly improve public safety and reduce damage repair costs after a major earthquake.

Two faults run through the City of Huntington Beach, leaving the city vulnerable to significant earthquake damage. Application of generic principles to the unique nature of seismic activity in Southern California is not a cure. Obviously, this information is helpful, but real cost benefit will be derived only through an evaluation of Huntington Beach's needs and studying that mitigation which will guarantee the delivery of essential water related services to our citizens.

The second phase of the study to be conducted with fiscal year 1998 funds will focus on the following six elements:

—Seismic upgrading of water system facilities, including reservoirs, transmission and distribution pipelines, bridge crossings, pump stations, wells, control centers and imported supply facilities.
—Backup emergency water supplies, including regional water supply augmentation.
—Seismic reliability of sewer and drainage systems.
—Temporary and standby power requirements for all water, sewer, and drainage pumping systems and emergency response.
—Capital outlay requirements.
—Economic base study to ascertain the benefit versus cost of planned improvements on an avoided cost basis due to potential damage to public infrastructure.

Nature disasters cost the economy and local, regional, state, and federal governments billions of dollars in damage, emergency response, and reconstruction of public infrastructure. The 1994 Northridge earthquake in our region was the most costly natural disaster in U.S. history. A larger quake on the San Andreas fault or the Newport-Inglewood fault near Huntington Beach could cost thousands of lives and approximately $70 billion in property damage. This type of disaster would be significantly exacerbated if water systems did not survive the quake, or were not restored quickly afterwards.

The Huntington Beach study will result in more reliable water systems for hundreds of thousands of residents in Southern California. We urge the Subcommittee to provide funds for this critical work.

PREPARED STATEMENT OF THE CITY OF NEWPORT BEACH, CA

Mr. Chairman: We support the $270,000 included in the President's budget request for the Newport Bay Feasibility Study in Orange County, California. Addition-

ally, we request that the Committee add $5 million to dredge the sediment basin in Upper Newport Bay.

Section 206 of the Water Resources Development Act of 1996 authorizes the Corps to participate in aquatic ecosystem restoration projects. Dredging the Upper Bay basin will restore critical marine habitat which has been impacted by sediment from the San Diego Creek watershed.

The State of California, Orange County, the cities of Irvine, Tustin, Newport Beach, and The Irvine Company participated in funding a Clean Water Act Section 208 program for the Upper Newport Bay. This program was successfully implemented in 1985, restoring 752 acres of marine and shoreline wildlife habitat which is now managed by the California Department of Fish and Game. Additionally, more than $100 million has been spent upstream to control sediment.

The existing sediment basin in the Upper Bay must be cleaned out and deepened to include a new 61-acre deep water marine habitat zone. The resulting improved sediment storage capacity will reduce future clean out frequency and lower the long-term cost of maintenance. Approximately 650,000 cubic yard of sediment will be moved.

We appreciate your past support for the Newport Bay Study, and look forward to your added support of $5 million for aquatic ecosystem restoration in the Upper Newport Bay.

PREPARED STATEMENT OF KARAN MACKEY, MEMBER, COUNTY BOARD OF SUPERVISORS, LAKE COUNTY, CA

Mr. Chairman, Members of the Subcommittee, my name is Karan Mackey. I am a member of the Lake County Board of Supervisors, and I appreciate this opportunity to present testimony before the Subcommittee on behalf of Lake County, California.

Lake County has four requests for your consideration. First, we would like to support full funding of the President's budget request for the Northern California Streams-Middle Creek study (CWC No. 108). This is an important study looking at ways to reduce sediment flow into Clear Lake and, in general, restore the Middle Creek watershed. Second, we want to express Lake County's continuing support for the Northern California Streams-Dry Creek-Middletown study (CWC No. 106). This is an important flood damage prevention study that was initiated by the Corps at the County's request with support from Congress last year. Like the Middle Creek study, funding for this study is in the President's budget request.

In addition to these requests, the County is also seeking funding for two components of an important project that is not in the President's budget request. This project is focused on actions that can be taken immediately to improve the water quality of Clear Lake, and take advantage of new authority granted to the Corps of Engineers in the Water Resources Development Act of 1996. This is critically important to the County, and we urge your careful and favorable consideration.

First, Lake County seeks $1,000,000 in fiscal year 1998 for the Clear Lake Basin Watershed Restoration Project. The County seeks these funds in the Corps of Engineers' General Investigations account. We understand the Corps' new policy that limits funding for reconnaissance studies to $100,000; however, we are seeking funds not for a traditional reconnaissance study, but rather pursuant to Section 503 of the Water Resources Development Act of 1996, Watershed Management, Restoration and Development. Funds appropriated pursuant to Section 503 are available on a 50/50 cost-share basis for planning, design and technical assistance for non-federal projects in the Sacramento River watershed, among others, for purposes of water quality management and restoration, and protection and restoration of watersheds. The Clear Lake watershed is within the Sacramento River watershed and the project that we are undertaking is precisely that envisioned in the legislation.

Our project seeks to develop a coordinated system of Clear Lake basin-wide wastewater and ecosystem improvements. The objectives include wastewater management and restoration of ecosystems adjacent to the Lake to substantially improve water quality. Clear Lake pollutant loadings will be reduced by, among other things, stopping millions of gallons of untreated sewage from entering the Lake annually from overloaded wastewater facilities. This will improve the water quality for 36 public water systems that currently draw drinking water supplies from Clear Lake; eliminate the area's last potential effluent discharge to the Sacramento River Basin from the community of Clearlake Oaks; and, promote the restoration of natural wetlands, 85 percent of which have been lost in the Clear Lake basin. Planning, design, and technical assistance enabled by Section 503 funding will be used to advance solutions to the overloaded wastewater facilities, as well as assist in initiating

ecosystem restoration projects, such as sediment pending to further reduce nutrient flow into the Lake. Of the $1,000,000 requested, $300,000 will be devoted to planning wastewater improvements and ecosystem restoration projects; the remaining $700,000 will accomplish final design of those improvements and projects.

The second new request we have is for $1,000,000 for the same Clear Lake Basin Watershed Restoration Project, but under new authority granted to the Corps of Engineers by Section 206, Aquatic Ecosystem Restoration. Funds appropriated pursuant to Section 206 are available on a 65–35 cost-share basis (federal share 65 percent) for planning, design, technical assistance, and construction. Funds are needed under this authority because we have project components that can go to construction immediately to improve the water quality in Clear Lake, and significantly advance our solutions to the very serious problems that now exist in the watershed. Specifically, the $1,000,000 will be used to construct improvements to the Northwest Regional Wastewater System around Clear Lake, which will not only eliminate untreated wastewater from flowing into Clear Lake, but will also generate recycled water for habitat creation and agricultural irrigation.

The Clear Lake basin watershed is our County's and region's most important natural resource and economic asset. The sustainability of our future is tied largely to the water quality and ecosystem health of Clear Lake, and we trust that you will agree with the critical importance of restoring and protecting this vital resource with the requested funding. Thank you for this opportunity to testify.

Prepared Statement of Charles F. Kaiser, President, Twentynine Palms Water District, CA

The Twentynine Palms Water District is requesting $1.75 million from the Bureau of Reclamation to assist with design and construction of a water reclamation facility. This facility will provide a critical source of water for the Twentynine Palms area of San Bernardino County.

The District is the sole provider of water in this high desert area. Existing groundwater supplies are over drafted, and a new dependable source of water must be developed. The only feasible alternative is to construct a groundwater treatment facility for the Mesquite Springs aquifer. This aquifer is estimated to contain one million acre feet of water, providing a dependable supply of water for the next 200 years.

The Mesquite Springs aquifer contains high quality water except for high concentrations of fluoride. The planned treatment facility will absorb fluoride ions to activated aluminum surfaces. The plant's initial design capacity will be 3 million gallons per day (MGD) with the ability to expand to 5 MGD in the future. This proposed defluoridation process has never been implemented at this large volume.

Because the District is pioneering this process at such a relatively high volume, this treatment facility can be considered a research and development demonstration project under Section 1605 of PL 102–575. The Bureau of Reclamation is authorized to provide 50 percent cost-sharing for such demonstration projects. The District has already committed revenues for its share of project costs. The estimated total cost of the treatment facility is approximately $3.5 million. Therefore, we are requesting a federal appropriation of $1.75 million.

Without this treatment facility, the District will have no other alternative but to import water from the Colorado River. Treated Colorado River water is not only significantly more expensive, but it cannot be relied upon as a dependable source of water as California is required to reduce consumption of Colorado River water in the very near future.

We appreciate your consideration of this request. We respectfully ask that the Committee provide $1.75 million in the Bureau's budget for fiscal year 1998 for this important project.

Prepared Statement of the Los Angeles County Drainage Area Alliance

The Los Angeles County Drainage Area (LACDA) Alliance, a coalition of seven cities (Bellflower, Carson, Downey, Lakewood, Paramount, Pico Rivera, and South Gate) in the floodplain of the Los Angeles and Rio Hondo Rivers requests that the Committee provide $40 million to continue construction of the LACDA flood control project. The Administration's budget request is $11.7 million; however, the Corps of Engineers has capability to construct $40 million in flood control improvements.

The project is critical to protect one of the most urbanized areas of the country. A 100-year storm event could result in damages of $2.25 billion covering 82 square miles. Over 500,000 people live in the floodplain. Without restoration of the flood

protection system, residents will pay an estimated $131 million annually in flood insurance premiums. An economic impact study conducted by the University of Southern California concluded that failure to construct the needed improvements could result in the loss of approximately 120,000 jobs with a regional economic loss of more than $30 billion over a 10-year period.

The LACDA project has been revised to reduce costs, with a current estimated cost of $240 million. This project could be completed in five years. However, recurring delays leave residents vulnerable to the threat of flooding, and the economic impact may exceed project costs in as few as two years.

We appreciate the Committee's past support, and ask that your support continue with an appropriation of $40 million for construction in fiscal year 1998.

PREPARED STATEMENT OF WENDELL H. KIDO, PLANT MANAGER, SACRAMENTO REGIONAL WASTEWATER TREATMENT PLANT

The Sacramento Regional County Sanitation District (District) is requesting $500,000 for the Sacramento County Reclamation Reuse study. This study was initiated in fiscal year 1997.

Section 1604 of Public Law 102–575 authorized the Bureau of Reclamation to provide 50 percent of the cost of water reclamation feasibility studies. The District is prepared to provide the cost share to investigate the feasibility of reclaiming a greater share, if not all, of the effluent produced by the Sacramento Regional Wastewater Treatment Plant. This study is intended to identify specific users, their water demand and delivery requirements; plan for treatment and distribution facilities, identify financing alternatives, and consider legal and environmental compliance.

The District, in cooperation with the Sacramento City-County Office of Metropolitan Water Planning, has already identified a potential market demand for reclaimed water. This reclaimed water could replace fresh water supplies that would otherwise be used for non-potable uses, such as landscape and crop irrigation, industrial use, wetlands management, and groundwater recharge. Recycling wastewater would provide a source of water that would reduce consumption of groundwater, which has been over pumped in Sacramento County since the 1930s.

The District is designing a small facility to reclaim a portion of the wastewater treated at the regional treatment plant. However, additional analysis is needed to determine all potential uses for reclaimed water, identify feasible measures to deliver and store reclaimed water, and determine the benefits and impact of reclaimed water otherwise discharged into the Sacramento River. This study will focus on water reuse opportunities throughout the entire county.

The Sanitation District appreciated your past support. We look forward to your continued support by providing $500,000 to the Bureau of Reclamation to conduct the feasibility study.

PREPARED STATEMENT OF THE CITIES OF ARCADIA AND SIERRA MADRE, CA

The Cities of Arcadia and Sierra Madre, California appreciate your continuing support for the Water System Seismic Reliability Study and request that the Subcommittee appropriate $525,000 in fiscal year 1998.

The Water Resources Development Act of 1996 (Public Law 104–303) authorizes the Corps of Engineers to provide technical assistance for public infrastructure seismic reliability projects. Federal funds will be matched 25 percent by non-federal sources. These funds will be used to design improvements identified in the seismic reliability study which the Corps has conducted over the past two years.

Improvements recommended by the special study include high capacity water supply wells and a transmission main facility along with metering structures and associated control equipment. A loop transmission main is recommended to deliver emergency backup water supplies. Also provided for is the rehabilitation of the two area replenishment basins and the development of policies and programs for enhancing emergency response. Such emergency response includes standby and temporary power and the design of the seismic protection components needed to maximize the ability of these water systems to function properly following a major seismic event.

The study and technical assistance provided by the Corps of Engineers will significantly improve public safety and reduce damage costs in the event of an earthquake. Damage resulting from the 1994 Northridge earthquake, which measured 6.7 on the Richter Scale, totaled more than $20 billion. The federal government paid billions of dollars for emergency response and restoration cost. Large quakes pre-

dicted for our region could cost thousands of lives and as much as $70 billion in property damage. Lives can be saved and damages reduced if steps are taken to improve public infrastructure and prepare for emergency response.

CALIFORNIA NAVIGATION PROJECTS

PREPARED STATEMENT OF BRIAN E. FOSS, PORT DIRECTOR, SANTA CRUZ PORT

In 1986, the United States Congress and the Santa Cruz Port District signed a Memorandum of Agreement (joint-venture L.C.A.) on the acquisition of a sand bypass system for Santa Cruz Small Craft Harbor. This $2.7 million agreement, authorized under WRDA 1984, provided that, once in place, the system would be operated and maintained by the Port District.

The bypass project has been extraordinarily successful. The harbor, once the scene of long closures and countless accidents because of shoals and breaking surf, is now 100 percent open to navigation all year round. The federal government no longer has to appropriate yearly O&M funds as it did from 1964 to 1986. The savings over the past ten years is estimated at $9+ million. The savings over the life of the project (2014) is estimated to be well in excess of $28 million in 1986 dollars.

The Port District is quite satisfied with the operational project and will carry out its responsibilities through 2014. However, an inequity exists in the original cost-share formula, which the Port District asks Congress to give redress.

The original legislative act of 1958, H.D. 357, provided for a 64.9 percent federal share and a 35.1 percent local share of the Santa Cruz Harbor jetty and basin construction, as well as a sand bypass system to be built subsequently. It also provided for a yearly contribution by the federal government of $35,000 for operation of the bypass system.

The 1986 M.O.A. was formulated using the present value of the $35,000 yearly operating contribution through 2014. That amount was given to the Port District in a lump sum ($389,000). That amount is the subject of our request. It should have been adjusted for inflation over the period from 1958–2014.

The 1997 Congressional Energy and Water Appropriation Bill (O&M General) directed the Corps of Engineers to study this issue and report back to Congress. The Corps' San Francisco District is currently conducting that study with completion in Spring 1997.

The estimated value of the Port District's request is $1,071,000. This includes credit for operating funds already received ($389,000).

In exchange for correcting this financial inequity the Port District would agree to extend its operational responsibility to year 2024. The estimated O&M savings to the federal government over the period from 1986 to 2024 is estimated to exceed $38 million in 1986 dollars.

The Port District requests that $1,071,000 be appropriated contingent upon the findings of the Army Corps of Engineers' study.

PREPARED STATEMENT OF MIKE GIARI, EXECUTIVE DIRECTOR, PORT OF REDWOOD CITY, CA

On behalf of the Port of Redwood City, California, I would like to request consideration of a line-item appropriation in the amount of $100,000 to fund a reconnaissance study to determine the Federal interests, costs, benefits and environmental impacts of deepening Redwood City Harbor. This testimony addresses the justification for this study.

The San Francisco Bay Area maritime industry sustains 100,000 jobs and generates $5.4 billion every year. Over 1,000 of these jobs are linked to the continued viability of the Port of Redwood City. If the Port of Redwood City and other Bay Area ports are to continue their role in America's economy, Congress must continue to invest in improvement and maintenance of our nation's deep draft navigation system.

BACKGROUND

Location

The Port of Redwood City is located 18 nautical miles South of San Francisco on the West side of the San Francisco Bay. It provides deep draft access to the mid-Peninsula and Santa Clara Valley metropolitan area, and is the only deep draft port in South San Francisco Bay handling cargo to and from oceangoing ships and barges.

History

The California gold rush and resulting population boom in San Francisco gave birth to the lumbering industry in the Peninsula redwoods. Logs were shipped to San Francisco Bay points via rafts and lumber schooners, using Redwood Creek at high tide to reach what is now downtown Redwood City. The city was named for the redwood lumber industry which was the basis of the earliest commercial maritime activities. Later, following development of navigation improvements, the importation of marine shells for use by the cement manufacturing plant at the Port and the exportation of salt from local producers were the basis for significant increases in maritime commerce. Today, commodities moving through the Port include salt, petroleum products, cement, scrap metal, lumber, gypsum and bauxite.

In 1996, Port tonnage was over 840,000 metric tons. Tonnage growth at the Port is expected to continue. Demand by the construction industry in the South Bay Area for lumber, cement and construction aggregate will remain strong. Trade with Pacific Rim nations is growing rapidly, and the demand for port facilities and navigation channels over the next decade is a challenge to be met by all West Coast ports, including the Port of Redwood City.

DREDGING HISTORY

Due to the shallow nature of San Francisco Bay, maintenance dredging is necessary in order to ensure safe navigation of ocean-going ships. There is no reliable method of estimating siltation rates for a large estuary like San Francisco Bay. The Redwood City Navigation Channel is subject to tidal currents, wave action, rainfall runoff and even seismic activity, all of which can effect changes in the configuration of the Channel.

In 1965, Congress authorized and appropriated funds for the dredging of the Redwood City Navigation Channel to a depth of 30 feet. Thereafter, until 1990, maintenance dredging was conducted by the Corps of Engineers every five years. Due to the extreme difficulty in maintaining the Port's authorized depth on a 5-year maintenance dredging cycle, the Port undertook to gain more frequent dredging. In 1992 the Redwood City Navigation Channel was placed on a 3-year dredging cycle in order to keep up with increasing siltation. It was dredged in 1993 and most recently in 1996.

1996 Dredging Recap

By Summer 1995, the Port was faced with a near-emergency situation. Heavy siltation had reduced Channel depth to less than 25 feet—5 feet below its federally authorized depth. As a result, Port of Redwood City tenants were forced to "light load" ships (depart less than fully loaded), or wait until high tide, in order to navigate the shallow areas of the Channel. The problem continued to worsen throughout the Summer. In July, we approached the Corps and requested that the scheduled maintenance dredging begin prior to the October 1 release of funds. After many weeks of discussions, the Corps of Engineers agreed to begin the necessary hydrographic surveys in mid-September—two weeks before the funding was to be released. Additionally, we requested permission to receive Advanced Maintenance Dredging (AMD), which would allow the Corps to dredge several feet over the authorized depth in certain problematic areas to help avoid similar problems in the future. Despite the somewhat early start, the actual dredging did not get underway until February. And although the AMD was beneficial, in less than a year certain areas have already silted in, reducing channel depth in those areas to 28 feet.

In sum, despite the Corps' best efforts, Mother Nature continues to have the upper hand, reducing Channel depth and threatening the Port's commerce.

THE NEED FOR A DEEPER CHANNEL

In addition to the recurring siltation problem, the new, larger vessels which now call on the Port of Redwood City require more than 30 feet of draft. Currently when these vessels call on the Port, they are forced to "light load" and "top off" at another port with a deeper draft. This practice significantly adds to the cost of calling on the Port of Redwood City, and cannot continue indefinitely. If the Port of Redwood City cannot offer adequate draft for the vessels which serve the Port, the vessels will eventually take their business elsewhere.

CONGRESSIONAL AUTHORIZATION

In order for the Corps of Engineers to determine the Federal interests, costs, benefits and environmental impacts of deepening Redwood City Harbor, Congresswoman Anna Eshoo has asked the Chairman of the House Transportation & Infrastructure Committee to authorize a reconnaissance study. We understand that this

authorization will be signed by the Chairman within the next week or so. The study itself, authorized under Section 905(b) of the Water Resources Development Act of 1986, is expected to be completed within 6 months at a cost of no more than $100,000, as dictated by recently amended Corps administrative policy. This revised policy was approved by Congress in Section 203 of Conference Report 104–843.

CONCLUSION

In sum, the Port of Redwood City respectfully requests inclusion of $100,000 in the fiscal year 1998 Energy & Water Development Appropriations Bill to fund a reconnaissance study at Redwood City Harbor.

Your strongest consideration of this request is greatly appreciated.

PREPARED STATEMENT OF STAN WISNIEWSKI, DIRECTOR, COUNTY OF LOS ANGELES DEPARTMENT OF BEACHES AND HARBORS, MARINA DEL REY, CA

FISCAL YEAR 1998 FUNDING FOR MARINA DEL REY DREDGING AND NAVIGATION STUDY

Los Angeles County respectfully requests that the Congress of the United States include funds in fiscal year 1998 Energy and Water appropriations for the following projects, which are urgently required to preserve public safety in Marina del Rey.

Marina del Rey Entrance Channel Dredging—($1,700,000)

The U.S. Army Corps of Engineers is responsible for maintenance dredging of the Marina del Rey's entrances and main channel, pursuant to a perpetual right of way and easement agreement with the County. The last design-depth dredging of Marina del Rey occurred in 1981, with 217,000 cubic yards of material removed. Since then, 35,000 cubic yards were removed in 1987, 55,000 cubic yards were dredged in 1994, and 230,000 cubic yards were removed in 1996.

There are still over 500,000 cubic yards of sediment that need to be removed to return the entrances to a design depth of 20 feet. Shoaling in both entrances has left navigable channels that are only 300 feet wide (50 percent of the entrance width), with a minimal depth for boating safety, of 10 feet.

To avoid an emergency situation, which could be created by one severe storm, 200,000 cubic yards of clean sediments should be removed during fiscal year 1998. These sediments can be economically dredged and placed on nearby beaches for much needed sand renourishment. This project will provide time for continuing work on the long-term solution to the Marina's dredging problem.

The President's fiscal year 1998 budget does not include any funds to perform maintenance dredging at Marina del Rey. We are, therefore, requesting your support for an appropriation of $1.7 million to remove the 200,000 cubic yards of sediments, which could threaten the ability of the U.S. Coast Guard, the County Sheriffs Harbor Patrol, the County Lifeguards and the City and County Fire Departments to respond to emergencies. As these agencies are the critical core of the LAX Air-Sea Disaster Response Team, it is imperative that the Marina's entrances remain open and safely navigable.

Removing the clean sediments will provide a partial solution to the problem. It will not enable us to regain the design depth throughout the entrances and main channel, nor avoid future emergencies caused by shoaling, because 250,000 cubic yards of contaminated sediment will remain. To avoid the potential cost of upland disposal of the 250,000 cubic yards of contaminated sediments, which could be $25 million, the County is working with the City of Long Beach, the Corps, the Environmental Protection Agency, and others, to gain approval for use of the City of Long Beach's borrow pits for contaminated sediment disposal.

Marina del Rey and Ballona Creek Feasibility Study—($530,000)

Some of the sediments creating navigational hazards in Marina del Rey's entrances contain contaminants that make dredging and disposal difficult and costly. The U.S. Army Corps of Engineers completed a reconnaissance study in 1996, which established that there is a Federal interest in solving this problem. The feasibility phase of the study is about to begin, with the County agreeing to provide 50 percent of the necessary funding.

The study's scope has been finalized and approved. It will focus on an economical and environmentally safe disposal option for the contaminated sediments, as well as on actions that can be taken in the Ballona Creek watershed that will eliminate or reduce the flow of contaminated sediments into Marina del Rey's entrance. Dedicated staff from the County, the Corps, the City of Los Angeles, the Santa Monica Bay Restoration Project, Heal the Bay, and other environmental and regulatory agencies have worked to limit the scope, time, and cost of this study. Based on the

approved plant the study will require three years to complete, at a cost of $2.7 million. As the Los Angeles County Board of Supervisors has agreed to pay 50 percent of the study's costs, we are pleased that there are funds in the President's fiscal year 1998 budget for this study. We, therefore, ask your support for the requested appropriation, of $530,000, for the Federal share of the cost in fiscal year 1998.

PREPARED STATEMENT OF LELAND WONG, PRESIDENT, LOS ANGELES BOARD OF HARBOR COMMISSIONERS FOR THE PORT OF LOS ANGELES

Mr. Chairman and Members of the Subcommittee: I am Leland Wong, President of the City of Los Angeles Board of Harbor Commissioners which oversees the activities of the Port of Los Angeles. My testimony, for the City of Los Angeles and its Board of Harbor Commissioners, speaks in support of the continuation of the federal role in the implementation of the major navigation improvements underway at San Pedro Bay, California. Specifically, I am speaking of the Pier 400 Dredging and Landfill Project.

PIER 400 IMPLEMENTATION UNDER THE 2020 DEVELOPMENT PROGRAM

The Commissioners, management and staff of the Port of Los Angeles have been working since 1985 with the U.S. Army Corps of Engineers on the implementation of the 2020 Development Plan for San Pedro Bay. The 2020 Plan was authorized in Section 210(b) of the Water Resources Development Act (WRDA) of 1986 (Public Law 99–662), and further sanctioned by Section 104 of WRDA 1988 (Public Law 100–371) and Section 102(c) of WRDA 1989 (Public Law 101–640).

The 2020 Plan accurately predicted the phenomenal growth of trade through the San Pedro Bay ports of Los Angeles and Long Beach, and mapped out a development plan that could accommodate this growth well into the 21st century. Divided into phases, the implementation of the 2020 Plan is currently entering Stage II which we call the Pier 400 Dredging and Landfill Project, a federal deep-draft navigation project.

The contracts for Stage I construction were awarded by the Port of Los Angeles in 1994 and construction remains on schedule with completion anticipated in June 1997. Stage I includes advance constructing the dredging of new federal navigation channels that will abut existing land at Pier 300, and reclaiming 265 acres of new land at Pier 400.

STAGE II CONSTRUCTION

I am pleased to inform the subcommittee that on March 18 of this year, the Project Cooperation Agreement (PCA) between the City and the Port and the Corps of Engineers was executed in a ceremony in the office of Assistant Secretary for Civil Works, H. Martin Lancaster. Present, were Representatives Steve Horn and Jane Harman whose ongoing and active support for the Pier 400 Project have been invaluable. The execution of the PCA enabled the Corps' Los Angeles District, on the same day, to advertise the project for construction which is scheduled to begin in June of this year.

We are also pleased to inform you that the Port of Los Angeles has entered an agreement with the appropriate State of California and federal agencies to fund the purchase of land and restoration of the Bolsa Chica Wetlands. This agreement secures for the Port the necessary mitigation to construct the Stage II project.

Mr. Chairman, the Port of Los Angeles appreciates the appropriation of $10 million by Congress for fiscal year 1997. This money will enable the start of Stage II construction this summer. For fiscal year 1998, we request your subcommittee to appropriate $54 million which will allow the Corps' Los Angeles District to maintain schedules on construction of Stage II improvements in fiscal year 1998, thereby ensuring project completion no later than fiscal year 2000.

The Corps of Engineers has estimated an additional cost of $30 million should Stage II experience construction delays of even two years. The additional cost would provide no value to the project. Therefore, we feel it is imperative that adequate funds are allocated to the Pier 400 Project so that construction may remain on schedule and project costs to the Port of Los Angeles remain within current estimates. Just as importantly, our request is also based on a construction schedule that is directly linked to proposed agreements pledging the early use of Pier 400 facilities by new tenants in fiscal year 2000.

The Port of Los Angeles' funding request for Stage II construction is in keeping with the PCA, establishing the federal interest pursuant to WRDA 1986 and Corps policy. The federal share has been established as $116 million out of an estimated

project cost of $625 million. The PCA establishes $63.8 million as the federal share of Stage I. With Stage I nearing completion, the Port has now fully funded the federal share through debt financing. The PCA provides that the first $96 million of Stage II work will be paid for by the federal government so that the Port can receive credit toward Stage II for the funds we advanced the federal government in Stage I. The Port's requested $54 million appropriation for fiscal year 1997 is consistent with this provision of the PCA.

ECONOMIC IMPACT OF THE PIER 400 PROJECT

As the Port of Los Angeles has testified in previous years, cargo throughput for San Pedro Bay is expected to triple between 1990 and the year 2020. Actual growth rates thus far, from 1990 through 1996, have significantly exceeded the forecast. The ability of the Port to meet the demands of this phenomenal growth in trade is dependent on deep water channels (such as those to be constructed under the Pier 400 Project) that can accommodate the largest state-of-the-art deep-draft vessels in the new world fleet. These new vessels provide greater efficiency in cargo transportation and offer consumers lower costs imports and more competitive exports.

The deep-water channels under the Pier 400 Project translate into significant national economic benefits, including:

—Over $74 billion annually in trade that supports employment for over one million people across the United States;

—The generation of $84.8 billion in Port-related activities in industry sales; $24.3 billion in wages and salaries; and, $12 billion in tax revenues annually;

—The generation of $1.8 billion in U.S. Customs revenues in 1996 alone.

The return on the federal investment is real, and will greatly exceed the cost/benefit ratio as determined by the Corps in the project feasibility study. In addition, the federal investment will ensure that one of the nation's largest ports remains competitive into the 21st Century.

ONGOING MAINTENANCE OF FEDERAL CHANNELS AND BREAKWATER

Related to the efficient operation of the completed Pier 400 Project is the required ongoing maintenance of the existing federal navigation channels at the Port of Los Angeles. As such, the Port requests your subcommittee to include an appropriation of $200,000 to assist the Corps of Engineers in conducting a condition survey of the federal channels and breakwater in San Pedro Bay. This work is necessary to evaluate the future maintenance needs of the channels and any rehabilitation that may be required for the breakwater. Ongoing maintenance will ensure that the channels remain at depths in which fully loaded container and tanker ships can safely navigate, as well as guarantee the stability of the breakwater during severe weather.

VICKSBURG MODELS FUNDING

Further, the Port of Los Angeles respectfully requests the subcommittee to provide $165,000 in fiscal year 1998 for ongoing maintenance of the San Pedro Bay models at the Corps of Engineers' Waterways Experiment Station (WES) in Vicksburg, Mississippi. In addition, $340,000 is needed for continued wave data collection which is necessary to validate the numerical and physical models used for project design. During the state-of-the-art design effort for the Pier 300 channels and the Pier 400 land reclamation, eight separate, but related models, were developed and maintained by the scientists and engineers of WES and were likewise used by the engineers at the Port of Los Angeles and the Los Angeles District Corps. Maintenance of the Vicksburg hydraulic and physical models and their prototype data acquisition facilities remain an essential resource for the Corps' Los Angeles District and the Port.

SUMMARY

Mr. Chairman, the Port of Los Angeles respectfully urges your subcommittee to include in the Corps of Engineers' fiscal year 1998 budget appropriation:

—$54 million for Stage II of the Pier 400 Dredging and Landfill Project;

—$200,000 to conduct condition surveys of the federal channels and breakwater in San Pedro Bay;

—$165,000 for ongoing maintenance of the Vicksburg Models; and,

—$340,000 for continued wave data collection.

The Port of Los Angeles has long valued the understanding demonstrated by your subcommittee of the importance of the port industry to the economic vitality of the United States. This understanding has been evidenced by the appropriation of scarce federal dollars for harbor and navigation projects such as ours.

Thank you, Mr. Chairman, for the opportunity to submit this testimony in support of continued funding for the federal navigation activities at the Port of Los Angeles.

PREPARED STATEMENT OF THE CONTRA COSTA COUNTY BOARD OF SUPERVISORS, CONTRA COSTA COUNTY, CA

SAN FRANCISCO BAR CHANNEL—SOUTHAMPTON SHOAL CHANNEL

The San Francisco Bay Bar Channel is located approximately 3 miles west of the City of San Francisco. The Southampton Shoal Channel is located approximately 6 miles north of San Francisco between Angel Island and Richmond Harbor. They provide deep draft merchant, military, commercial fishing and other vessel access to ports within the region. The 1995 bar tonnage was approximately 73,643,000. The 1995 Southampton Shoal Channel tonnage was 20,839,000. Both foreign and domestic ships traverse the Bar Channel and Southampton Shoal channel. Changing deep draft vessel operations and designs requires examining deepening the 55-foot Bar Channel and 45-foot Southampton Shoal channel. Deepening the Bar and Southampton Shoal Channel will allow safer and more efficient navigation of oil tankers entering the bay to be loaded more fully, which will require fewer vessel trips to deliver the same amount of cargo. Deepening of the Southampton Shoal Channel and Extension will allow heavily laden vessels to proceed directly to off loading facilities, rather than lightering (off loading) onto smaller ships in south San Francisco Bay. The priority is for deepening of the Southampton Shoal Channel to occur first, as the greatest benefit occurs as a result of this deepening. Language incorporating Southampton Shoal Channel with the San Francisco Bar study area was introduced into the 1997 House Report by Congressman Fazio and subsequently approved with the concurrence of chairman Myers.

Funding Request

Funding of $600,000 is currently contained in the President's fiscal year 1998 budget. Contra Costa County, the Project's Local Sponsor, supports this budget allocation, and recommends it's inclusion in the final Budget.

Purpose of Fiscal Year 1998 Funding

The purpose of fiscal year 1998 funding would be to initiate the Feasibility Study. Feasibility activities include sediment testing, navigation simulation, cultural resources analysis, Study and Project Management, Environmental and Economic studies, Geotechnical analysis of the channel, Real Estate, Plan Formulation Activities, Surveying and Mapping, Design and Cost Estimates. In fiscal year 1997, a $100,000 allocation was made for a Reconnaissance Study that is currently underway.

Request for Name Change

At this time, the priority for deepening is the Southampton Shoal Channel and Extension. For this reason, the County respectfully requests that the study area and funding request be limited to the Southampton Shoal and extension, and that the project now entitled the San Francisco Bay Bar Channel Southampton be changed to Southampton Shoal Channel and Extension.

SAN FRANCISCO TO STOCKTON (BALDWIN) SHIP CHANNEL PHASE III

Background

As the primary navigation channel for most of the oil tanker traffic in San Francisco Bay, JFB provides a vital part of the economic infrastructure in the San Francisco Bay Area. The channel extends from the West Richmond channel through San Pablo Bay and Carquinez Strait and into Suisun Bay. At a current depth of −35 feet, the channel provides only minimum navigable depth for a world tanker fleet which boasts drafts up to 70 feet in its largest ships. With the San Francisco Bar Channel, the entrance to San Francisco Bay, at a depth of −55 feet, tanker traffic entering the Bay is already limited to a maximum of −50 feet because of underkeel clearance requirements. The tankers entering the Bay are anchored south of the Bay Bridge and partially off-loaded (lightered) into smaller ships until favorable tides or reduced draft allow them to proceed to the shallower channel and upstream berths. This in-bay transfer process is costly and is an increased environmental risk when compared to entering the Bay and proceeding directly to a berth for off loading as in the proposed project.

There are three alternatives being considered for reducing environmental risk and increasing economic benefit to the process of moving petroleum in the Bay. The first alternative is deepening the existing 35 foot channel to 45 feet from the central bay

up into Suisun Bay. The second alternative is the construction of a pipeline terminal near Point Molate north of the Richmond/San Rafael bridge and connecting to an existing common carrier utility pipeline that connects to the refineries. The third alternative is a combination of the first two involving construction of the pipeline terminal and dredging the deep draft channel to a depth of −40 feet.

Funding Request

Funding of $250,000 is requested to be added to the fiscal year 1998 Budget due to a recently accelerated schedule. Funding would be utilized to complete environmental review for the project, and for continuation of preconstruction engineering and design.

PREPARED STATEMENT OF E.D. ALLEN, CHIEF HARBOR ENGINEER, PORT OF LONG BEACH, CA

I am E. D. Allen, Chief Harbor Engineer for the Port of Long Beach, California. I have been authorized by the Board of Harbor Commissioners of the City of Long Beach to represent the Port of Long Beach in regard to appropriations for the Los Angeles and Long Beach Harbors Model Study; Planning, Engineering, and Design for our on-going 2020 Plan; Los Angeles River maintenance dredging; and Reconnaissance and Feasibility Studies for beach erosion.

HARBORS MODEL MAINTENANCE (CIVIL WORKS BUDGET CATEGORY—O&M)

The Water Resources Development Act of 1976, Section 123, authorized the Chief of Engineers to operate and maintain the Los Angeles-Long Beach Harbor Hydraulic Model at the U.S. Army Corps of Engineers Waterways Experiment Station in Vicksburg, Mississippi as part of the Los Angeles and Long Beach Harbors Model Study. This model. encompasses both port complexes in San Pedro Bay, which, as you are aware, are ports of national significance. The hydraulic model, along with several numeric models, provides state-of-the-art methodology that can be used on the San Pedro Bay ports and on many other harbor complexes. In addition, the Port, as the local agency, is assisting in the Corps' effort to provide continuous wave-gauge data by providing necessary support personnel and equipment for the maintenance of portions of the system located at the Port.

In fiscal year 1997, $162,000 was appropriated for maintenance of the physical model of San Pedro Bay. During this time, the Port also utilized the model to analyze necessary navigation-related modifications to the recently completed portion of our expansion plan, as well as our upcoming expansion within the Navy Basin. This effort is being funded by the Port and is currently on-going. It is necessary that the model remain ready for service such as this. Funding in fiscal year 1998, in the amount of $165,000, would continue annual maintenance on the model. Additionally, we are requesting $325,000 of continued funding for the wave gage (prototype) data acquisition and analysis program. This program began in 1987 to develop data for the design of the 2020 Plan port expansion and navigation improvements. This program has now evolved to construction monitoring and model verification which needs to continue in order to confirm expected levels of impacts of the expansion plans. Therefore, Congress is respectfully requested to appropriate $490,000 for fiscal year 1998 to perform this work.

2020 PLAN—CHANNEL DREDGING (CIVIL WORKS BUDGET CATEGORY—PED PLUS CONSTRUCTION)

The Port of Long Beach has developed a long-range master plan, referred to as the 2020 Plan, which demonstrates the need for new navigation channels and additional landfill development through the year 2020. In fiscal year 1996 $194,000 was appropriated to continue preconstruction engineering and design of the federal share of the project which will provide for channel deepening outside the federal breakwater.

Section 201(b) of the Water Resources Development Act of 1986 authorized construction of the 2020 Plan upon recommendations of a feasibility report and completion of a favorable Chief of Engineers Report. The Chief's Report was issued July 26, 1996 and the Office of Management of Budget recently approved the Report.

The Port of Long Beach has started the first phase of the 2020 Plan with the construction of its Pier J expansion project, which includes dredging the Long Beach Main Channel to at least a −76 foot depth. This project is known as the Port of Long Beach Deepening. Together with the approach channel deepening outside the federal breakwater, the dredging was evaluated for Federal interest in the feasibility study because it permits deeper draft crude petroleum vessels to call at the Port

of Long Beach. The recently completed studies indicate the Federal share of the channel deepening to be $15,510,000. We have proceeded with our work and now are requesting the Federal share to be appropriated.

Completion of the Preconstruction, Engineering, and Design (PED) is scheduled for fiscal year 1998 with an appropriation of $160,000. It is urged that the Committee approve an appropriation of $14,500,000 to fund through the construction phase of the Long Beach Deepening Project, which will make good on the Federal cost share. This will allow construction to begin in 1998 and allow the benefits from the project to begin.

LOS ANGELES RIVER MAINTENANCE DREDGING (CIVIL WORKS BUDGET CATEGORY—O&M)

The Port of Long Beach also concurs with and supports the recommendation of C–MANC and the City of Long Beach with respect to federal funding for remedial maintenance dredging to remove accumulated flood-deposited silt in the mouth of the Los Angeles River. During the storms of 1995, such flood-deposited silt closed the mouth of the Los Angeles River to navigation. This restricted regularly scheduled water route transportation between the cities of Long Beach and Avalon, creating an economic emergency. Reacting to this emergency, the U. S. Army Corps of Engineers cleared the channel enough to allow for minimal resumption of navigation.

However, substantial quantities of silt remain in the channel, much of which is just upstream of the recently reopened section. These silt deposits create the likelihood of future serious restrictions and safety hazards to commercial and recreational boating activity in, and adjacent to, the Long Beach Harbor District and the associated businesses in Long Beach. Such restrictions and hazards have resulted in accidents and litigation.

In addition, the Port supports the City in recommending that these silt deposits be removed on an annual basis as a scheduled work item. As previously demonstrated, the location of the silt can move dramatically within a few days. In the draft of "Project Plan for Los Angeles River Estuary Maintenance Dredging, Long Beach, CA, October 1994" (Draft Project Plan–1994), the Corps of Engineers estimated an average annual deposit of silt in the estuary of 485,000 cubic yards. The rate of such deposits is influenced by operational decisions at the Corps of Engineers' dams located at the headwaters of the river. It is imperative for our current operations, that a long range remedy be found for the Los Angeles River mouth, if navigational utility and effective flood control capability is to be maintained.

Although the Draft Project Plan–1994 cites a memorandum indicating sufficient capacity to effectively accommodate flood waters when released from Sepulveda and Hansen Dams, we are concerned as to how that capacity is maintained over time, given the annual level of silt deposition. The flood flow is also accompanied by a velocity and volume of the river, through the portions of the river historically dredged by the Crops, that has caused the loss of, or damage to, navigational buoys, marina mooring facilities, dredging equipment, and the waterway usage by various commercial and recreational vessels. The most recent deposits, despite the emergency channel clearance, have resulted in extensive shoaling that still hinders navigational utility in the area.

It is estimated by the Corps of Engineers, in Draft Project Plan–1994, that maintenance dredging of the channel to a minimum usable width, a project that does not clear all shoaling that hinders navigation, is $1,900,000. This is a level of dredging that allows for an annual accumulation of almost 175,000 cubic yards of silt deposits beyond what is being dredged and allows for the uncertainty of a rapidly developing shoal in any time of significant storms. An annual expenditure of $5,700,000 would be necessary to clear all annual silt deposits and prevent an accumulation of that material. Congress is requested, therefore, to appropriate $5,700,000 for the accomplishment of this critically needed work. This work is included in the line item known as Los Angeles Long Beach Harbors in the Civil Works Budget.

RECONNAISSANCE/FEASIBILITY STUDY—BEACH EROSION (CIVIL WORKS BUDGET CATEGORY—SURVEYS)

The Port of Long Beach also supports C–MANC and the City of Long Beach on their request for federal funding to complete a Corps of Engineers reconnaissance study on beach erosion. In southeastern Long Beach, east of the Port's land and channels, and directly opposite the federal breakwater, a beach and seawall protects approximately $200,000,000 worth of homes. Steady erosion had reduced the beach from an optimum of 175 feet to 30 feet prior to City's efforts in late 1994 to rebuild the beach. Winter storms continue to reduce the beach width.

The City has also experienced erosion in the west beach area. Although homes are not endangered, public improvements, including lifeguard stations, public restrooms, a bicycle and pedestrian trail, and a parking lot, are at risk. The cause of the new problem is unclear, indicating the need for a thorough study of the beach erosion problem inside the federal breakwater.

The primary method of protecting the homes has been annual rebuilding, with the building of sand berms during high tides or expected storms. In the past 16 years, the City has invested over $5,300,000 in capital improvement projects, annual beach rebuilding, and storm protection to control the beach erosion. Despite this effort, in 1989 and 1993, storm waves eroded the beach and breached the protective seawall, causing damage to homes. In fiscal year 1997, $275,000 was budgeted by the City to rebuild eroded beaches. The City is also defending itself against a lawsuit by one of the homeowners who is claiming that the City failed to halt erosion that narrowed the beaches in front of his home to less than the desired width adopted in the 1980 Local Coastal Plan.

In fiscal year 1997, $252,000 was appropriated to complete the reconnaissance study of the beach erosion problem within the City of Long Beach. It is now requested that Congress appropriate $500,000 in fiscal year 1998 to initiate the feasibility study.

This beach erosion problem is directly related to the focusing affect the federal breakwater has on our large commercial harbor complex and surrounding beaches.

Attached hereto is Resolution HD–1854, adopted by the Board of Harbor Commissioners of the City of Long Beach on March 10, 1997, which contains data relating to the background of the Los Angeles and Long Beach Harbors Model Study, the 2020 Plan implementation, the Los Angeles River dredging, the beach erosion problem in Long Beach, and other related navigation and economic matters. The resolution stresses the need for federal assistance in developing economic, technical and environmental background information essential to the design and permitting of Port facilities vital to regional and national interests. The Port of Long Beach is the largest container port in the United States and is the economic engine bringing $3.8 billion in customs receipts from both Los Angeles and Long Beach ports and jobs for 500,000 people. We are truly a port and harbor of national significance.

We kindly ask that Congress continue its support of these projects in fiscal year 1998 by appropriating the requested funds.

Thank you for permitting me the privilege of this presentation.

RESOLUTION NO. HD–1854

A Resolution of the Board of Harbor Commissioners of the City of Long Beach, California, requesting the Congress of the United States to appropriate funds to the United States Army Corps of Engineers in order to continue planning; engineering and design for the San Pedro Bay 2020 Plan; to continue the Los Angeles and Long Beach Harbors Model Study relating to improvements in San Pedro Bay; to conduct maintenance dredging at the mouth of the Los Angeles River; and to conduct reconnaissance and feasibility studies of beach erosion.

WHEREAS, the Ports of Long Beach and Los Angeles in San Pedro Bay, California, are two of a limited number of sites on the West Coast of the United States which possess the potential for deep water port facilities as recommended in the West Coast Deep Water Port Facility Study conducted by the United States Army Corps of Engineers; and

WHEREAS, the Ports of Long Beach and Los Angeles have a record of both physical and fiscal growth to the extent that together the two ports are presently handling over 164.4 million metric revenue tons of cargo annually (fiscal year 1996), and the international cargo handled is valued at over 157 billion dollars annually (calendar year 1995); and

WHEREAS, the growth and activity of the Ports of Long Beach and Los Angeles have a significant regional and national economic effect; and

WHEREAS, in excess of 3.8 billion dollars in federal revenues were collected as United States Customs duties on foreign imports passing through the Ports of Long Beach and Los Angeles during the fiscal year ending September 30, 1995; and

WHEREAS, both Ports are now, and are increasingly becoming, hard-pressed to provide facilities to meet the needs of the shipping industry, and to that end are conducting extensive studies, in conjunction with federal studies, to determine navigational, transportation, and environmental requirements necessary to provide economic and adequate surge-free berthing and cargo handling facilities; and

WHEREAS, all existing land in the Port of Long Beach which can be developed for shipping operations has been utilized or is in the process of being developed and,

in order to meet the needs of the following decade, the design, permitting and construction of new lands must continue; and

WHEREAS, continuation of the studies currently underway by the United States Army Corps of Engineers, consisting of the Los Angeles and Long Beach Harbors Model Study, including maintenance and operation of the San Pedro Bay Hydraulic Model at Vicksburg, Mississippi, as authorized by Section 123 of the Water Resources Development Act of 1976, is needed for use in the design and permitting processes for future landfills for port development; and

WHEREAS, the Port of Long Beach handled over 28 million metric tons of liquid bulk cargo (fiscal year 1996). Because of economies of scale, liquid bulk cargo brought in by deeper draft vessels will have lower transportation costs. However, the existing navigation channel depths leading to the Port limit the size of calling vessels; and

WHEREAS, One Million Five Hundred Thousand Dollars ($1,500,000) was appropriated in fiscal year 1995 for a feasibility study of channel deepening outside the federal breakwater. The feasibility study was completed in 1995 and draft plans and specifications were completed in December, 1996; and

WHEREAS, the Los Angeles River is the largest of numerous flood-control channels constructed and maintained jointly by the Los Angeles County Flood Control District and the United States Army Corps of Engineers, and silt deposit from heavy storm runoff in recent years accumulating in the mouth of the Los Angeles River in the City of Long Beach constitutes a restriction and hazard to both commercial and recreational boating; and

WHEREAS, the Board of Harbor Commissioners of the City of Long Beach, as a properly constituted and financially responsible local agency, by its Resolution No. HD–890, adopted August 3, 1965, expressed its intent to enter into such agreements as may be reasonably required to further federal projects for the development and improvement of Long Beach and Los Angeles Harbors; and

WHEREAS, at southeastern Long Beach in front of Alamitos Bay a beach and seawall protects Two Hundred Million Dollars ($200,000,000) worth of homes. The primary method of protecting the homes has been annual beach rebuilding and sand berms during storms. Steady erosion has reduced the beach from optimum width of 175 feet to 30 feet and continues to reduce beach width despite rebuilding efforts in 1994. In the past 14 years, the City has invested over Five Million Three Hundred Thousand Dollars ($5,300,000) in capital improvement projects, annual beach rebuilding and storm protection to stop erosion. Despite this effort, in 1989 and 1993, storm waves eroded the beach and breached the protective seawall causing damage to homes.

NOW, THEREFORE, the Board of Harbor Commissioners of the City of Long Beach resolves as follows:

Section 1. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army Corps of Engineers, to maintain the San Pedro Bay Hydraulic Model at the Waterways Experiment Station at Vicksburg, Mississippi, as part of the Los Angeles and Long Beach Harbors Model Study.

Sec. 2. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army Corps of Engineers, to continue the existing wave gauge (prototype) data acquisition and analysis program.

Sec. 3. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army Corps of Engineers, to complete the construction phase of dredging deeper navigation channels to the Port of Long Beach.

Sec. 4. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army Corps of Engineers, in conjunction with the Los Angeles County Flood Control District, to engage in the necessary maintenance dredging at the mouth of the Los Angeles River to remove silt deposits which have accumulated at that location.

Sec. 5. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army Corps of Engineers, to complete reconnaissance and feasibility studies to develop protective measures to prevent beach erosion within the City of Long Beach.

Sec. 6. That the Executive Director of the Long Beach Harbor Department be, and he is hereby, directed to send copies of this resolution to the United States Senators and to Members of the House of Representatives from California, with a letter re-

questing their assistance in presenting this resolution before the proper Congressional committees.

Sec. 7. That the Executive Director of the Long Beach Harbor Department be, and he is hereby, further directed to send copies of this resolution to the President of the United States; the Director, Office of Management and Budget; the Secretary of the Army; the Chief of Engineers, the Director, Directorate of Civil Works, the Division Engineer-South Pacific Division and the District Engineer-Los Angeles, all of the United States Army Corps of Engineers; and to such other interested persons as he may deem appropriate.

The Secretary of the Board shall certify to the passage of this resolution by the Board of Harbor Commissioners of the City of Long Beach, shall cause the same to be posted in three (3) conspicuous places in the City of Long Beach, and shall cause a certified copy of this resolution to be filed forthwith with the City Clerk of the City of Long Beach and it shall thereupon take effect.

I hereby certify that the foregoing resolution was adopted by the Board of Harbor Commissioners of the City of Long Beach at its meeting of March 10 , 1997, by the following vote:

Ayes: Commissioners—Kashiwabara, Hearrean and Hancock, Perez
Noes: Commissioners—None
Absent: Commissioners—Murchison
Not Voting: Commissioners—None

JOHN W. HAND,
Secretary.

PREPARED STATEMENT OF DAVID ALLEN, PRESIDENT, BOARD OF HARBOR COMMISSIONERS

The Army Corps of Engineers has identified and completed a study at a cost of $600,000 for a project to take place in the inner harbor at Crescent City, California. This project is vital to the commercial fishing industry and to support industries within the port. Crescent City is the county seat of Del Norte County. The area currently has a 11.6 unemployment rate and the county is rated last of all California counties in per capita income. Commercial fishing is the second largest source of employment in the county, and the project is vital to maintain a healthy industry.

The President's 1998 budget did not include funding for this project, however it did include funding for an ongoing Operations and Maintenance project in the outer basin of Crescent Bay. Ms. Maxine Jacoby of the USACE is the director for the new proposed project. She stated to me that if the new project could be funded and work done on it to coincide with the O and M project there would be an approximate savings of $250,000 dollars for the Corps, most of it in mobilization. The coincided projects would be a direct savings to taxpayers.

We respectfully ask that the new project be funded, and work on it to coincide with the O and M project scheduled for 1998. The O and M project also requested funds ($300,000) for a study to identify an offshore disposal site. This is needed for both projects to continue in the future. Thank you very much for your consideration.

PREPARED STATEMENT OF ALEXANDER KRYGSMAN, PORT DIRECTOR, PORT OF STOCKTON, CA

I am Alexander Krygsman, Director of the Port of Stockton in Stockton, California.

The San Francisco Bay to Stockton Ship Channels Project is an authorized project, presently under construction.

The Port of Stockton is primarily a bulk port that serves industry and agriculture in the San Joaquin Valley in California, and the bulk imports and exports of the Western States, including the coal areas of these States.

The Port of Stockton recognized as far back as 1952 that deeper channels would be needed for the movements of bulk cargoes and requested the Corps of Engineers to deepen the channel in 1952. Coal, grain, fertilizers and many other bulk materials require deeper channels to serve the larger bulk carriers.

The Nation needs ports that can handle larger, more economical and more fuel-efficient vessels close to the production areas, both agricultural and industrial, to conserve energy.

The Port of Stockton is such a port.

The dredging of the Stockton Channel portion of the project was completed in 1987. A copy of the Port of Stockton's most recent annual report is attached. Cargo

volume has increased since the dredging of the Stockton Channel was completed; and the project is certainly paying off.

Therefore, we have requested the Corps of Engineers for a potential new navigation study (reconnaissance study) to deepen the Channel further, to forty (40) feet or more, if economically feasible.

For the 1998 fiscal year, we are requesting three-hundred-thousand dollars ($300,000) for this study. Because this study has to be coordinated for proper timing with the continuing construction of the John F. Baldwin Channel, or the U.S. Navy's project to deepen the Channels to the Concord Weapons Station, and with the progress of these projects, now is the time to do this study.

This is not just a new study. This study, and the eventual construction, is closely tied to the deepening of the Channel through San Pablo Bay, and this project needs to be timed appropriately with that construction. Deferring three-hundred-thousand dollars ($300,000) now could cost millions in extra cost later.

We urge you to appropriate three-hundred-thousand dollars ($300,000) for the Stockton Deep Water Channel Reconnaissance Report. We also strongly urge that two-million-five-hundred-thousand dollars ($2,500,000) be appropriated to maintain the Channels so that the benefits may continue to accrue.

PREPARED STATEMENT OF RICHARD W. PARSONS, DREDGING PROGRAM MANAGER, VENTURA PORT DISTRICT

The Ventura Port District respectfully requests that the Congress:

—Include $7,000,000.00 in the fiscal year 1998 Energy and Water Development Appropriations Bill for the U. S. Army Corps of Engineer's maintenance dredging of the Ventura Harbor's federal entrance channel, and for the repair of the federal breakwater and jetties. The Corps of Engineers area of responsibility is illustrated in the attached photograph.

—Include $150,000.00 in the fiscal year 1998 Energy and Water Development Appropriations Bill to complete a reconnaissance study to determine the advisability of modifying the existing Federal navigation project at Ventura Harbor to include a sand by-pass system. This study was authorized by the House Committee on Transportation and Infrastructure on September 14, 1995, and was initiated during fiscal year 1997.

BACKGROUND

Ventura Harbor is located along the Southern California coastline in the City of San Buenaventura, approximately 60 miles northwest of the City of Los Angeles. The harbor opened in 1963. Annual dredging of the harbor entrance area is usually necessary in order to assure a navigationally adequate channel. In 1968, the 90th Congress made the harbor a Federal project and committed the U. S. Army Corps of Engineers to provide for the maintenance of the entrance structures and the dredging of the entrance channel and sand traps.

The harbor presently generates more than $40 million in gross receipts annually. That, of course, translates into thousands of both direct and indirect jobs. A significant portion of those jobs are associated with the commercial fishing industry (over 30 million pounds of fish products were landed in 1996), and with vessels serving the offshore oil industry. Additionally, the headquarters for the Channel Islands National Park is located within the harbor, and the only commercial vessels transporting the nearly 100,000 visitors per year to and from the Park islands offshore, operate out of the harbor. All of the operations of the harbor, particularly those related to commercial fishing, the support boats for the oil industry, and the visitor transport vessels for the Channel Islands National Park are highly dependent upon a navigationally adequate entrance to the harbor.

OPERATIONS & MAINTENANCE NEEDS

It is estimated that $7,000,000.00 will be required during fiscal year 1998 to address the following operations and maintenance needs at Ventura Harbor:

Dredging Needs.—$3,800,000.00 will be required during fiscal year 1998 to perform the routine maintenance dredging of the harbor's federal entrance channel and sand traps. This dredging work is absolutely essential to the continued operation of the harbor.

Breakwater Repairs.—$700,000.00 will be required during fiscal year 1998 to complete the armor stone repairs on the offshore breakwater. This structure suffered heavy damage in the 20 ft. seas of January 1995. While emergency repairs to the most heavily damaged areas of the structure were completed in March of that year,

the repair effort has not been completed. Thus, this critical structure remains in a vulnerable condition.

South Jetty Repairs.—$1,300,000.00 will be required during fiscal year 1998 to repair the deteriorated 35 year old concrete tribars that armor the South Jetty. The tribars are simply failing after years of pounding by the seas. New tribars employing the latest design techniques must be fabricated and placed to put the South Jetty in sound condition.

North Jetty Repairs.—$1,200,000.00 will be required during fiscal year 1998 to reverse the accelerating rate of deterioration being experienced on the 35 year old North Jetty. The deterioration was aggravated by the 1994 Northridge Earthquake which displaced large portions of the armor stone. In order to prevent any compromise of the structural function of this jetty, it is necessary that the repair efforts commence in fiscal year 1998.

STUDY NEEDS

It is estimated that $150,000.00 will be required during fiscal year 1998 in order to complete the reconnaissance study for a possible sand by-pass system at Ventura Harbor. Given the continuing need for maintenance dredging, it is appropriate to determine if there is a federal interest in a sand by-pass system or other measures which can accomplish the maintenance of the Harbor in a manner that is more efficient and cost effective than the current contract dredging approach.

PREPARED STATEMENT OF HON. ROSEMARY CORBIN, MAYOR, CITY OF RICHMOND, CA

Mr. Chairman and members of the Subcommittee, thank you for the opportunity for me, Rosemary Corbin, as Mayor of the City of Richmond, on behalf of myself and the other members of the City Council, to submit prepared remarks to you for the record in support of the fiscal year 1998 Energy and Water Appropriations Measure.

The City of Richmond is the local sponsor under the Project Cooperation Agreement ("PCA") executed just this month for construction of the 38 foot deep draft project for navigation, Richmond Harbor, California, authorized under the Water Resources Development Act of 1986 ("WRDA 1986") (Public Law 99–662).

The City Council recognizes and expresses their profound gratitude to our Senators, Barbara Boxer, a Member of this Committee, and Dianne Feinstein, a former Member of this Committee, for their longstanding support in difficult budgetary times in funding this navigation project of critical importance to the future development of the City and Port of Richmond.

The City of Richmond is especially pleased that fiscal year 1997 marks the commencement of construction of the navigation project. We have executed the PCA. We anticipate bid advertisement in April, contract award in May-June, and construction to begin shortly thereafter.

We successfully raised over 8 million dollars to be applied to the required local share of project construction cost through the establishment of the Richmond Harbor Navigation Improvement District-the first Navigation Benefit Assessment District in the United States. This has resulted in a separate partnership evidenced in supplemental agreements between the city and local private beneficiaries who are paying a substantial portion of the local contribution to project construction cost. In addition, the city and the private beneficiaries anticipate participating through the federal construction contract in dredging our public and private berths to project depth at our expense.

In addition to pioneering work in the public financing of our navigation project and the forging of a public-private partnership at the local level in project planning and financing, along the way we have overcome many other obstacles to project construction including:

—Project delay and the need for public consensus building resulting in the interim, and hopefully permanent, designation of an ocean disposal site for qualified dredged material;

—An EPA Superfund Remediation Project threatening to contaminate project dredged material, and compound disposal problems; and

—Approved use by the State Department of Toxic Substances Control Remediation Project Site as an approved uplands disposal site for beneficial use of dredged material unsuitable for unconfined aquatic disposal.

A large part of the credit-and a special debt of gratitude for much of this innovative work without which there would likely be no project commencing construction this year goes to our former Port Director, Michael R. Powers who was forced into premature retirement last year as a result of a tragic accident which he fortunately

survived. Additional credit goes to our able Port Engineer, and until recently Acting Port Director, Gene Serex, who fortunately for us was able to step in and assume responsibility for project coordination and supervision, as well as to the port staff and consultants who have labored long and hard to get is to this point.

The unique history of our project continues to the present time. We are also the first construction project we know of that is utilizing the new cost-sharing provisions for upland disposal sites for dredged material disposal enacted as part of the water resources development Act of 1996 ("WRDA 1996") (Public Law 104–695). We anticipate that the enactment of this provision will result in direct savings to the city and the other local beneficiaries of as much as one million dollars. This could well spell the difference between our being able to afford proceeding with construction of the project or not.

Unfortunately, estimated project construction cost continues to grow even as we approach bid advertisement. The revised cost estimates are based upon new dredging volume estimates rather than projected unit cost changes. So close to actual project construction I would not have anticipated this to occur, and I must say it gives us great apprehension until we see the actual bids and can finally determine our required local cash contribution during the period of project construction.

We are grateful to the Chairman and the Members of the Subcommittee in providing $4 million in fiscal year 1997 to complete pre-construction engineering and design and commence construction. The President's budget request contains $8.620 million in appropriations request in the construction general account to continue project construction.

We request the Subcommittee increase this amount to $12.6 milllion to complete construction in fiscal year 1998 permitting the San Francisco District to advertise as a single construction contract in order to ensure the lowest possible total project construction cost to the Federal Government and taxpayer, and to the city and its partners as local project sponsors.

The National Economic Development (NED) Plan for the project involves the construction of the project from the current 35 to 38 feet MLLW. The plan contemplates ocean disposal of the bulk of the 1.7 million cubic yards of project dredged material at an EPA designated ocean disposal site, and consistent with the Long Term Management Strategy (LTMS) for dredged material management for the San Francisco Bay area. The balance of approximately two hundred thousand yards of project and berth material unsuitable for unconfined aquatic disposal will be treated and encapsulated for beneficial reuse at a port provided site dedicated to maritime use.

In summary, as the Non-Federal sponsor and principle project proponent, we reaffirm our support and are prepared to move forward in partnership with the Corps to execute the proposed project scheduled for completion of construction in fiscal year 1998 with your assistance. we have made concrete progress in fulfillment of our project financial responsibilities through the creation of a navigation benefit assessment district. We have executed a final PCA to set the stage for commencement of project construction in July-August of this year. We have identified and acquired, and will shortly let the necessary contract for site improvements of the upland disposal site for dredged material disposal from project construction under new applicable Federal cost-sharing legislation.

We ask the Subcommittee's help to assure the availability of the estimated $12,620,000 in Federal funds necessary to complete project construction in the fiscal year 1998 energy and water appropriations measure before the committee following contract award and commencement of project construction in fiscal year 1997.

We are prepared to supplement our prepared remarks for the record in response to any questions from the Chair, Subcommittee Members, or staff may wish us to answer. Thank you.

COLORADO RIVER BASIN WATER RESOURCE DEVELOPMENT PROJECTS

LETTER FROM GOV. ROY ROMER, STATE OF COLORADO

STATE OF COLORADO,
Denver, CO, April 9, 1997.

Hon. PETER DOMENICI,
Chairman, Senate Appropriations Subcommittee on Energy and Water Development, Washington, DC.

DEAR CHAIRMAN DOMENICI: I am writing to request your support for an appropriation of $7.162 million for fiscal year 1998 to allow the U.S. Bureau of Reclamation (Reclamation) to continue its activities associated with the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Re-

covery Program). This amount has been requested by the Administration under a Reclamation item labeled "Upper Colorado Region—Endangered Species Recovery Implementation Program."

The objective of this Recovery Program, now in its ninth year of operation, has been to cooperatively recover four endangered fish species while water development moves forward in compliance with the Endangered Species Act. The Recovery Program is mutually supported by the states of Colorado, Utah and Wyoming, environmental organizations, electric power customers, water development interests, Reclamation, the U.S. Fish and Wildlife Service and the Western Area Power Administration.

Much has been accomplished with the money Congress has appropriated:

—In fiscal year 1994, the Recovery Program initiated specific studies and actions in preparation for the construction activities necessary to recover the endangered fish including the construction of the Redlands Fish Passage to allow the endangered fish to return to historical habitats;

—Instream flow protection efforts are underway on the Colorado River (mainstem), Gunnison River, and Yampa River (including enlargement of the existing Elkhead Reservoir), and existing projects are being reoperated or modified. Using the $1 million appropriated in fiscal year 1988, for example, Reclamation began to secure water for the endangered fish. Through fiscal year 1996, $655,400 from the previous appropriation has been spent, $322,500 will be used in fiscal year 1997, and in fiscal year 1998, the Recovery Program will spend the remaining $22,100 to acquire water and water rights for the endangered fish;

—Historic habitats projects are restored through the acquisition and restoration of flooded bottomlands and wetlands in Utah and Colorado.

Facilities are being developed for propagation and genetics management. The fiscal year 1998 funds I am requesting will enable these vital activities to continue.

I would very much appreciate your support of this important multi-state, multi-agency program, and I look forward to working with you in the future. Thank you for your consideration.

Sincerely,

ROY ROMER,
Governor.

PREPARED STATEMENT OF RANDY HORIUCHI, COMMISSIONER, SALT LAKE COUNTY, UT

On behalf of the Salt Lake County Commission I appreciate the opportunity to submit testimony to the House Energy and Water Development Appropriation Subcommittee regarding the Upper Jordan River Flood Control Project at Mill Creek, and the Upper Jordan River Restoration Project.

First, I would like to discuss the Upper Jordan River Flood Control Project at Mill Creek. Salt Lake County has been working with the Army Corps of Engineers on the project for over fifteen years, which will provide flood protection for over 10,000 people along Mill Creek in central Salt Lake County.

Continual flooding in the Upper Jordan River basin first led to a series of public meetings in 1977 to determine how this flooding could be mitigated. The focus of attention was on the Jordan River, Big and Little Cottonwood Creeks, and Mill Creek. The Corps began an Interim Investigation of the Upper Jordan River in fiscal year 1977, which included the entire Jordan River Basin of north-central Utah. The Jordan River Basin is located in the most highly developed and densely populated area in Utah, and includes the metropolitan areas of Salt Lake City and Provo-Orem. The area was selected for an interim investigation because of rapid urbanization and an increasing frequency of flooding and damages. The principal stream in the basin is the Jordan River, which flows about 40 miles through the Salt Lake Valley to its terminus in the Great Salt Lake. The Jordan River intercepts major tributaries in the Salt Lake Valley, including Little Cottonwood Creek, Big Cottonwood Creek, and Mill Creek, which originates in the Wasatch Mountains southeast of Salt Lake City. These creeks originate at high elevations in the Wasatch Front, where our world famous ski resorts are located, and flow westerly to the valley floor and their confluences with the Jordan River. The streams flow through narrow, deep canyons in the mountainous region before intercepting with the Jordan River, all of which has contributed to a long history of flooding. While flooding is most commonly associated with snowmelt runoff, flooding has also occurred from summer thunderstorms and general rainstorms.

Salt Lake County experienced severe cloudburst flooding in September 1982 and snowmelt flooding in 1983 and 1984. All three events were at or near 100-year flood

events. In 1983 and 1984, Salt Lake County was included in the President's emergency disaster declaration area. Following this flooding, Salt Lake County received voter approval for a $33.5 million Bond Issue to pay for major flood control improvements in the area. This coupled with FEMA emergency funds and our regular Flood control mill levy provided over $70 million to restore and improve flood control facilities. One of the major elements of the flood control system not completed by Salt lake County was the overflow diversion from Mill Creek to the Hillview Detention Basin. Since this project met the Corps' requirements, we requested that they take the lead on this project and we have proceeded to this point.

The Mill Creek flood control project has three major features: the diversion structure located just above Highland Drive on Mill Creek, the diversion conduit, and the Hillview Detention Basin located on mostly County owned property at 4100 South between 900 and 1100 East Streets. The diversion structure is a concrete structure approximately 200 feet by 41 feet in size. The diversion structure will divert excess flows to the Hillview Detention Basin via a 96-inch diameter conduit, which will provide protection from a 100-year flooding event. The Detention Basin stores the peak of the storm and releases the storage at a low rate of 30 cubic feet per second. The basin is designed for the combined 100-year peak flow volume from Mill Creek.

The Mill Creek Flood Control Project is a critical element to the overall flood control system for Mill Creek. We have designed and built our channel capacity downstream of the diversion, based on the Federal Diversion project being in place. Residents of Salt Lake County will not have full protection from a 100-year flooding event without completion of the Mill Creek Project.

The 1996 Water Resources Development Act (WRDA) included a provision which increased the cost ceiling for the Upper Jordan River Flood Control Project at Mill Creek to $12.87 million. Known as a Section 902 project modification, the increased authorization level was needed to allow the project to go to construction. The project was originally authorized in the 1990 WRDA at a total cost of $7.9 million, with a Federal cost of $5.2 million and a non-Federal cost of $2.7 million. In addition, the Fiscal 1997 Energy and Water Appropriation Act included $500,000 to begin construction of the Upper Jordan River Flood Control Project.

The President's Budget Proposal included $700,000 to continue construction of the project. These efforts include completion of plans and specifications on flood control features of the project, award or continuation of the mitigation and esthetic contract, completion of real estate acquisition for construction contract, and crediting of the mitigation lands. Therefore, I respectfully request that the Subcommittee support provide $700,00 for the Upper Jordan Flood Control Project at Mill Creek in the fiscal year 1998 Energy and Water Appropriation Bill.

Upper Jordan River Restoration Project

I would like to request the Subcommittee's support for providing $500,000 in the fiscal year 1998 Energy and Water Appropriation Bill for a Feasibility Study on the Upper Jordan River Restoration Project through the Section 206 Aquatic Ecosystem Restoration Program.

Section 206 is a new standing authorization program that was included in the 1996 Water Resources Development Act (WRDA) that passed Congress last year. The Corps of Engineers now has the authority to carry out ecosystem restoration and protection projects when it is determined that the project will improve the quality of the environment, is in the public interest, and is justified based on monetary and non-monetary benefits. The non-Federal share of costs is 35 percent for construction, which can include land, easements, rights-of-way, and necessary relocations, and 100 percent for operation and maintenance costs. No more than $5 million in Federal funds may be allotted to a project. The President's Budget Proposal included $2 million for the 206 Program.

There is increasing concern at both the State and local level in Utah regarding floodplain problems and wetlands deterioration along the Jordan River, as well as stormwater and nonpoint source pollution along the river. The Salt Lake County Commission believes that effective watershed management can help alleviate these problems. Channel protection and restoration using environmentally benign measures will not only provide flood control protection, but will also contribute to the restoration of water quality, control of sedimentation, and restoration of wetlands to their natural state.

The Salt Lake County Commission has undertaken an aggressive program to protect the Jordan River, which is the principal drainage area in the Salt Lake Valley. The Commission believes that traditional flood control measures can be complemented by nonstructural measures that can help control flooding, excessive erosion, and sedimentation. To accomplish this goal, Salt Lake County instituted the Jordan River Sub-Basin Watershed Management Council in June 1993, which was

established to promote and enhance intergovernmental coordination and planning efforts along all stream corridors in the Salt Lake Valley drainage area. The Council is comprised of state, local and federal representatives that serve an advisory role to the County Commissioners. This approach is the forerunner of state and federal movements toward the concept of total watershed management.

As part of this watershed management program, Salt Lake County manages the Jordan River Wetland Acquisition Program, in which $7 million authorized under the Central Utah Project Completion Act was provided to create open space reserves for up to 1000 acres of high quality wetlands which are threatened by development along the Jordan River. This funding will help protect the watershed and contribute to flood protection.

Restoring the watershed through channel restoration is the next crucial step in flood control protection, and the Section 206 Aquatic Ecosystem Restoration Program will help accomplish this goal. The Salt Lake County Commission initially requested funding to restore the Upper Jordan River through the Section 1135 Environmental Restoration program as part of the 1996 WRDA. As you know, Section 1135 is a standing authorization program that allows the Corps to environmentally restore or enhance an ecosystem that has been degraded by a Corps water resources project. This request was based on the fact that the Corps had dredged approximately one mile of the Upper Jordan River. As a result, Section 107(6) of the 1996 WRDA authorized the Corps to conduct a study along the Upper Jordan River for channel restoration and environmental improvement, directing that the project be carried out under the Section 1135 Program, if appropriate. In addition, the Fiscal 1997 Energy and Water Appropriation Act included $100,00 for a Reconnaissance Study of environmental restoration opportunities along the Upper Jordan River, that included examining water quality, wetland habitat, and flood control as a means of restoring the watershed of the Jordan River Basin.

The Corps has informed Salt Lake County that environmental restoration of the Upper Jordan River under the 1135 Program is not cost effective, since the Corps only dredged approximately one mile of the Jordan River. The expanded 1135 Program allows the Corps to undertake restoration of environmental quality beyond the project area to include the area affected by the construction or operation of a Corps water project. However, even under this expanded program, the Corps does not believe it would be cost effective to undertake restoration of the Upper Jordan River through the 1135 Program.

As a result, we are requesting the Subcommittee's assistance in obtaining $500,000 for a Feasibility Study under the Section 206 Aquatic Ecosystem Restoration Program. Once the Feasibility Study is completed, which typically takes twelve to eighteen months, the Upper Jordan River Restoration Project would be ready to proceed to construction. Since the 206 Program is a standing authorization, the project could then proceed to construction without an authorization from Congress.

The President's Fiscal 1998 Budget Proposal sent to Congress includes $150,000 for a Reconnaissance Study along the Upper Jordan River for environmental restoration. It is our understanding that a Reconnaissance Study is funded through the General Investigations Account, and that funding for a Feasibility Study under the 206 Program would need to come from the Construction Account.

Extensive studies of the dredging, diking and channelization of the Jordan River have already been conducted, which include recommendations on how natural controls such as revegetation and stream stabilization could control flooding. Our most recent estimates identify 16 miles of the Jordan River that have been dredged, diked, narrowed and channelized from 2100 South to the Utah County line. The historical floods in 1982 resulted in further aggravation of both bed and bank erosion. Stabilizing the river beds would involve vegetative controls, as well as some structural components that will help regrade the river to achieve a more natural meandering flow. Extensive planning of environmental protection and restoration of the Jordan River over the last ten years should prove helpful to the Corps in the planning and construction of this project.

Environmental restoration and protection of the Jordan River in the Salt Lake Valley will provide numerous benefits to the Federal government as well as Salt Lake County residents. Besides providing flood control protection by returning the river to a more natural meandering corridor, it will improve water quality, control of toxic sediments, and improve fish and wildlife habitat. Protecting the urban watershed through benign management techniques will reduce flood control costs to the Federal government in the future.

Environmental protection and restoration of the Jordan River has wide support from all of the municipalities in Salt Lake County, as well as the State Department of Environmental Quality. I am hopeful that the Energy and Water Appropriation

Subcommittee will provide funding for the Corps to conduct a Feasibility Study under the 206 Program for the Upper Jordan River Restoration project.

Thank you again for the opportunity to submit testimony before the Subcommittee on Energy and Water Development.

PREPARED STATEMENT OF MAX HOGAN, MAYOR, CITY OF WEST JORDON, UT

I appreciate the opportunity to submit testimony regarding West Jordan's Water Reuse Project. West Jordan is seeking $500,000 in the fiscal year 1998 Energy and Water Appropriation Bill, which will provide funding for the design and engineering portion of the project, and also allow the project to begin construction.

Thanks to the efforts of our congressional delegation, the City of West Jordan received an authorization for our water reuse project in H.R. 3660, the Reclamation Recycling and Water Conservation Act of 1996. The total cost of the water reuse project is now projected at $6.6 million. H.R. 3660 authorized a 25 percent federal share for the project, or $1.65 million.

The City of West Jordan believes federal support for the reuse of recycled wastewater is critical for arid states such as Utah, who must find alternative water sources in a rapidly developing region. West Jordan is currently developing a water reuse project, and the federal share authorized will make the project feasible by reducing the cost of the water, thereby making it more competitive with other water rates in the Salt Lake Valley.

West Jordan's Water Reuse Project

West Jordan City, located in Salt Lake County, Utah, is experiencing rapid growth which has led to an increasing demand for water. Water use in West Jordan City more than doubled from 6,611 acre-feet in 1984 to 13,263 acre-feet in 1994. That's over a 100 percent increase in just ten years. This rapid growth has continued. Wells owned by West Jordan City currently supply about 40 percent of the City's total water demand, and water purchased from the Salt Lake County Water Conservancy District (SLCWD) supplies the balance of the City's water demand. To meet this significant increase in water demand, West Jordan City has little other alternative than to purchase more water from SLCWCD Unfortunately, this is not a long range alternative since SLCWCD is projected to reach their committed peak flow capacity within the next two to three years. Without an alternative water source, West Jordan City, which currently purchases sixty percent of their water supplies from SLCWCD, will face a severe water shortage supply. Water conservation programs have already begun, but water conservation alone is insufficient to handle the burgeoning water demands of the Salt Lake Valley.

To meet these anticipated water demands, West Jordan City believes that reclaimed water must be used as a water source for non-potable use. Reclaimed water is defined as properly treated municipal wastewater, and water reuse is defined as putting the reclaimed water to a beneficial use. Replacing potable water with reclaimed water for non-potable purposes will make additional water available for potable use. Reclaimed water is being used in a number of areas for agricultural and landscape irrigation, industrial use, groundwater recharge, and recreational and environmental enhancement, but has seen only very limited use in Utah.

The Utah State Legislature passed legislation in 1995 allowing municipalities to reuse water discharged from wastewater treatment plants if the water originated under the water rights held by that municipality. Wastewater generated by West Jordan is currently treated at the South Valley Water Reclamation Facility (SVWRF), a regional wastewater treatment facility. West Jordan City could reuse their share of the effluent from SVWRF, once properly treated, to irrigate parks, golf courses, cemeteries, schools, and other open areas.

The City will need to contract with the regional waste treatment facility for the purpose of reusing the effluent. The General Manager of the South Valley Water Reclamation Facility, John Callis, has indicated that SVWRF strongly supports water reuse and will cooperate with West Jordan's water reuse project.

Project Description

West Jordan's water reuse project would consist of the construction of the facilities to treat and distribute reclaimed water for the irrigation of public and, possibly, private properties. Based on the "West Jordan City Water Reuse Feasibility Study", conducted in 1995, with updated costs to 1998 dollars, the project is estimated to cost $6.6 million. The overall system would include piping, a main pump station, a booster pump station, a storage reservoir, and polishing filters. Reclaimed water could be pumped to the high end of the system throughout the day and night. During periods of irrigation, the overall demand would be met from both the reservoir

and the pump stations. The main pipeline would connect the SVWRF to the storage reservoir located near Old Bingham Highway at Elevation 4720. The main pipeline would be located primarily in the railroad right-of-way and consist of 24 inch diameter PVC pipe. Lateral pipelines ranging from 6 inch diameter to 18 inch diameter would connect the main pipeline to the irrigated areas.

Pumping requirements would be met by a main pumping station at or near the SVWRF and a booster pump located at approximately the mid-point of the water distribution system. The main pump station would be located near the outlet of the polishing filter. The overall system layout is shown in Appendix C. Results of the feasibility study show that 1 to 2 days of storage volume would be required to efficiently use the reclaimed water. Storage would be necessary because most irrigation would occur in a 7 to 8 hour period during the night, while effluent discharge from the SVWRF would have a tendency to be higher during morning and evening hours. Storage requirements for 1 to 2 days of operation during the period of peak demand would be 4.5 to 8.9 million gallons. A concrete lined, open reservoir with a total storage capacity of about 6 million gallons was recommended in the feasibility study.

The filtration system is critical to the West Jordan Water Reuse Project, since the State Wastewater Reuse Rules require that the wastewater intended for Type 1 water reuse pass through a filtration system. Final effluent filtration is currently not in place at the SVWRF, so the filters would need to be constructed before Type 1 water reuse could be implemented. Disinfection would be required following filtration.

Cost Comparison

The cost per acre-foot of reclaimed water is estimated to be $280 or more. This is within the range of the costs of Salt Lake County Water Conservancy District's potable water, which costs on a weighted average to West Jordan City approximately $240 per acre-foot. However, West Jordan City has purchased water from SLCWCD at upwards of $340 per acre-foot. The cost per acre-foot of reclaimed water could be reduced by selling more reclaimed water at off-peak hours to industrial users or to other reuse alternatives. Grants or subsidized financing could significantly reduce West Jordan's cost for a water reuse project.

West Jordan capacity for groundwater sources is limited, and cannot depend on the SLCWCD, which wholesales water to over half of the geographic area of the Salt Lake Valley, to provide additional water since peak capacity will be reached within three years. The SLCWCD will have to expand their capacity of aqueduct and treatment facilities by the year 2005 to meet increasing water demands in the Salt Lake Valley. West Jordan's water reuse project will reduce our dependency on potable water from the Conservancy District, and therefore reduce the need for expansion of their facilities. Over half of SLCWCD's capacity is devoted to outdoor irrigation. West Jordan's water reuse project, which is intended to be used to irrigate parks, golf courses, and other public entities, will reduce the peak loading on the SLCWCD system. For this reason, David Ovard, the General Manager of the SLCWCD, strongly supports our project.

Summary

West Jordan's water reuse project for irrigation of parks, cemeteries, and golf courses is feasible and has the support of the South Valley Water Reclamation Facility as well as the Salt Lake County Water Conservancy District. However, the estimated per acre-foot cost of the reclaimed water would likely be higher than water purchased from the Salt Lake County Water Conservancy District or supplied by West Jordan's wells. As a result, alternative methods of financing must be found in order to make the project cost-effective.

Water reuse would become more economically feasible if options are utilized that lower the construction costs for the reuse system or increase the annual water sales without increasing the peak demand. While West Jordan is pursuing low cost loans with the state and federal government, grants are also needed to make the water reuse project cost-effective. For this reason, West Jordan would greatly appreciate the Subcommittee's support for providing $500,000 to begin the West Jordan Water Reuse Project in the fiscal year 1998 Energy and Water Appropriation Bill. West Jordan would be prepared to provide a local match of $1.5 million. The appropriation request of $500,000 would provide funding for design and engineering, as well as begin construction on the project. This critical grant will make our project cost-effective, while at the same time mitigating the need for the water wholesaler in the Salt Lake Valley to make costly upgrades.

Thank you again for the opportunity to submit testimony before the Energy and Water Development Subcommittee regarding the West Jordan Water Reuse Project.

I hope that the Subcommittee will see fit to provide $500,000 for West Jordan's project in the fiscal year 1998 Energy and Water Appropriation Bill.

PREPARED STATEMENT OF COUNCILMEMBER DAVID RAIL, CITY OF PROVO, UT

I would like to request the Subcommittee's support for providing $350,000 in the fiscal year 1998 Energy and Water Appropriation Bill for a Feasibility Study for the Flood Damage Reduction Project in Provo, Utah.

From 1982 through 1984 Provo City was impacted by severe flooding which caused significant damage to the community. A state of emergency was declared in Utah County as well as Salt Lake County. The Army Corps of Engineers was called in at that time to construct dikes and levees. The Army Corps spent approximately $2 million to upgrade an existing dike adjacent to the Provo airport, and a new dike was constructed along the south side of Provo River from the Utah Lake State Park linking it with the airport dike. An additional dike was built along the north shore of Provo Bay to protect residential areas in the southwest section of the City. Congress specifically directed the Army Corps in 1983 to construct these flood control projects in Provo. However, Provo still spent $5 million in repairing damaged property and constructing emergency flood control projects, many of which were temporary in nature. Since Provo's annual budget at that time was only $15 million, providing $5 million was an enormous share for the City to finance. Most of the emergency flood control projects were related to runoff from Rock and Slate Canyons, which are part of federal lands owned by the U.S. Forest Service.

As a result of this flooding disaster, Provo prepared a master plan which identified $30 million in flood control projects to be constructed, consisting of channels and pipes along with detention basins, inlet boxes, and related facilities. In an attempt to finance these improvements Provo created a Service District in 1992 that generates $500,000 a year for these capital improvements projects. However, at this rate of revenue generation it will take more than 50 years to fund the flood projects identified in the master plan. Provo critically needs another source of funding to finance this flood control project.

The flood control projects identified in the City's Master Plan are the next logical step in flood control for Provo, beyond the Utah Lake and Provo River Diking Project completed in cooperation with the Corps of Engineers in 1983 and 1984. Major elements of the capital improvement program are flood control projects required to handle snowmelt runoff from the canyons on federal lands immediately east of the City. Runoff from these canyons does not occur frequently, but when flooding does occur it can cause high flow quantities requiring large and expensive capital improvements. The flood control projects associated with canyon runoff have an estimated cost of $9 million. It is this portion of the flood control project for which the City of Provo is seeking involvement from the Army Corps of Engineers. The remaining $21 million in flood control improvements are considered local flooding problems in which the Corps has traditionally not had an interest. The City of Provo will finance the local flood control projects through the special taxing district established in 1992. As you can see, Provo is taking a proactive stance in preventing future flooding events from damaging our community. However, funding the entire project is beyond the local community's capabilities.

The Corps has indicated that flooding caused by snowmelt from the mountains was clearly a flood control issue that should have Corps involvement, as opposed to a local drainage problem which would not fall under the Corps' jurisdiction. Major flooding events do not occur frequently in Provo, but when these events occur they can be massive in scope. A community the size of Provo, which has a population of approximately 90,000, cannot be expected to fund $30 million in flood control improvements entirely on our own. Provo has taken steps to largely finance flood control improvements in the City, but help is needed from the federal government for portions of the flooding that are not local in nature * * * especially since the major flooding events occur from lands owned by the federal government.

The President's Budget Proposal included $350,000 for a Feasibility Study to continue the Provo Flood Damage Reduction Project. I respectfully request that the Subcommittee provide funding for this project in the Fiscal 1998 Energy and Water Appropriation Bill.

Thank you again for the opportunity to submit testimony before Subcommittee on Energy and Water Development.

PREPARED STATEMENT OF CATHIE BROWN, MAYOR, CITY OF LIVERMORE, CA

On behalf of the City of Livermore, I appreciate the opportunity to submit testimony before the Energy and Water Development Subcommittee regarding the Greenville Road Improvement Project located near the Lawrence Livermore National Laboratories in Livermore, California.

The City of Livermore began discussions with the Lawrence Livermore National Laboratory several years ago to define the Federal responsibility for improving Greenville Road, which is a major route to the laboratory. The improvements consist of widening Greenville Road from a two-lane to a four-lane roadway, and straightening a railroad overcrossing. Approximately 95 percent of the traffic on Greenville Road originates from the DOE facilities, which have approximately 11,000 employees.

Both Congress and the Lawrence Livermore National Laboratory have provided support in the past for the DOE's role in improving transportation facilities in Livermore. In 1991, thanks to combined efforts by the Laboratory and the City, two grants totaling $2.2 million were allocated for widening and improvement of Vasco Road, which is another main entrance to the DOE facility. In addition, the Fiscal Year 1992 Defense Authorization Act and the Energy and Water Appropriation Act provided $1.8 million towards transportation improvements, which was used to conduct design and engineering for the Greenville Road Improvement Project.

Before Congress would provide additional support for the project, they directed the DOE to develop a policy regarding their responsibility for transportation improvements. This policy was issued in September 1994 and outlines the process for DOE approval of a specific request for transportation improvements. The local DOE official responsible for a DOE site must determine that a request from a local taxing entity conforms to the policy, and then submits the request to the appropriate Assistant Secretary in Washington. A decision could then be rendered on whether or not DOE will seek funding for implementing the transportation work.

Section 3165 of the Fiscal 1997 National Defense Authorization Act directed DOE to include in the fiscal year 1998 Budget a request for funds to pay the federal portion of the cost of transportation improvements under the Greenville Road Improvement Project at Livermore, California. The DOE was directed to work with the City of Livermore to determine the cost of the transportation improvements.

As a result, officials from the DOE Oakland Office and the City of Livermore worked together last fall to determine the federal costs for the transportation project. The total cost for improving Greenville Road is $99.5 million, and it was mutually agreed that the federal responsibility for the Greenville Road Improvement Project should be $12.6 million, which includes widening Greenville Road near the laboratories and improving a railroad overcrossing. This amount included previous federal funding provided by the Laboratory, which totaled $4 million. Therefore, the remaining amount of $6.8 million was determined to be the balance of the DOE's responsibility.

The President's Budget Proposal included $6.8 million for the Greenville Road Improvement Project, and the City of Livermore is now requesting the Subcommittee's support for providing half of the funding for the project, or $3.4 million, in the fiscal year 1998 Energy and Water Appropriation Bill. It was determined that only half of the funds for the project could be spent in one fiscal year. The City of Livermore is working concurrently with the National Security Committee to ensure that this project is authorized in the fiscal year 1998 Defense Authorization Bill.

Last November, the Livermore City Council approved a resolution stating that the City will consider the funding from the DOE of $6.8 million as payment in full for DOE's portion of all future City road improvements in and around the vicinity of the Lawrence Livermore National Laboratory and Sandia National Laboratory.

I appreciate the opportunity to submit testimony regarding the Greenville Road Improvement Project, and hope that the Subcommittee will support funding the project at a level of $3.4 million in the fiscal year 1998 Energy and Water Appropriation Bill.

PREPARED STATEMENT OF GERALD R. ZIMMERMAN, EXECUTIVE DIRECTOR, COLORADO RIVER BOARD OF CALIFORNIA, GLENDALE, CA

COLORADO RIVER BASIN SALINITY CONTROL

Your support and leadership are needed in securing adequate fiscal year 1998 funding for the Department of the Interior with respect to the federal/state Colorado River Basin Salinity Control Program. This program is carried out through the Bureau of Reclamation pursuant to the Colorado River Basin Salinity Control Act and

the Clean Water Act. California's Colorado River water users are presently suffering economic damages estimated at about $800 million per year due to the river's salinity, and those damages are expected to increase significantly by the turn of the century without salinity control.

The Colorado River Board of California, the state agency charged with protecting California's interests and rights in the water and power resources of the Colorado River System, supports the 1998 federal funding of $16,800,000 proposed by the Colorado River Basin Salinity Control Forum for the Department of the Interior's Colorado River Basin salinity control activities.

The seven Colorado River Basin states, which cost-share with the federal government up to 30 percent of the construction costs of Interior's salinity control measures, have carefully evaluated the federal funding needs of the program and have concluded that an adequate budget is needed for the plan of implementation to maintain the river salinity standards adopted by the seven Colorado River Basin states and approved by the Environmental Protection Agency, pursuant to the two federal authorizing Acts.

In addition, the Colorado River Basin Salinity Control Forum and the Colorado River Board of California recognize that the federal government has made significant commitments to the Republic of Mexico and to the seven Colorado River Basin states with regard to the delivery of quality water to Mexico. In order for those commitments to be honored, it is essential that in fiscal year 1998 and in future fiscal years, the Congress provide funds to the Bureau of Reclamation for the operation and maintenance of the Yuma Desalting Plant.

The Colorado River is, and will continue to be, a major and vital water resource for California. Preservation of its quality through an effective salinity control program will avoid the additional economic damages to river users in California that are expected by the turn of the century without such salinity control.

The Board greatly appreciates your support of the federal/state Colorado River Basin Salinity Control Program and again asks for your assistance and leadership in securing adequate funding for this program.

PREPARED STATEMENT OF THE COLORADO RIVER BASIN SALINITY CONTROL FORUM

Bureau of Reclamation—Fiscal Year 1998 Appropriation

Colorado River Basin Salinity Control Forum's Recommendation:	
Originally Authorized Program	$4,300,000
Program Authorized in 1995	12,250,000
General Investigation Funds	250,000
Total	16,800,000

This testimony is in support of funding for the Colorado River Basin salinity control program. Congress has designated the Department of Interior, Bureau of Reclamation, to be the lead agency for salinity control on the Colorado River. This role and the authorized program was refined and confirmed by the Congress when Public Law 104–20 was enacted into law. A total of $16,800,000 is requested this year to implement the needed and authorized program. Failure to appropriate these funds will result in significant economic damage and threaten the compliance with adopted water quality standards.

Overview

The Colorado River Basin salinity control program was authorized by Congress in 1974. The Title I portion of the Colorado River Basin Salinity Control Act responded to commitments that the United States had made via a treaty with Mexico with respect to the quality of water being delivered to Mexico below Imperial Dam. Title II of the Act established a program to respond to salinity control needs of Colorado River water users in the United States and to comply with the mandates of the then newly legislated Clean Water Act. Initially, the Secretary of the Interior and the Bureau of Reclamation were given the lead Federal role by the Congress. Important modifications to the program were made by the Congress as legislation creating Public Law 104–20 was passed. This testimony is in support of funding for the Title II program.

After a decade of investigative effort, the Basin states concluded that the Salinity Control Act needed to be amended. Congress revised the Act in 1984. That revision, while keeping the Secretary of the Interior as lead coordinator for Colorado River Basin salinity control efforts, also gave new salinity control responsibilities to the Department of Agriculture, and to a sister agency of the Bureau of Reclamation—

the Bureau of Land Management. Congress has charged the Administration with implementing the most cost-effective (dollars per ton of salt removed) program practicable. The Basin states are strongly supportive of that concept, as the Basin states now cost share 30 percent of federal expenditures for the salinity control program, while in addition proceeding to implement their own salinity control efforts in the Colorado River system.

Since the congressional mandates of nearly two decades ago, much has been learned about the impact of salts in the Colorado River system. The Bureau of Reclamation has recently completed studies on the economic impact of these salts. Reclamation recognizes that the damages to United States' water users alone may soon be approaching $1 billion per year.

The Colorado River Basin Salinity Control Forum (Forum) has become the seven-state coordinating body for interfacing with federal agencies and Congress to support the implementation of a program necessary to control the salinity of the river system. Forum members are appointed by the governors of the seven Colorado River Basin states. In close cooperation with the Environmental Protection Agency (EPA) and under requirements of the Clean Water Act, every three years the Forum prepares a formal report analyzing the salinity of the Colorado River, anticipated future salinity, and the program necessary to keep the salinities at or below the levels measured in the river system in 1972.

In setting water quality standards for the Colorado River system, the salinity levels measured at Imperial, Parker, and Hoover Dams in 1972 have been identified as the numeric criteria. The plan necessary for controlling salinity has been captioned the "plan of implementation." Most recently, the Forum completed its 1996 Review of water quality standards, and the Colorado River Basin states have submitted this report to EPA. It was learned from the 1996 Review that the salinity program must be accelerated when compared with the 1993 analysis if the water quality standards are to be honored. The funds requested herein are in keeping with this finding. If adequate funds are not appropriated, state and federal agencies involved are in agreement that the numeric criteria will be exceeded and damage from the high salt levels in the water will be widespread and very significant.

Justification

The $16,800,000 requested by the Forum on behalf of the seven Colorado River Basin states is the level of funding necessary to proceed with the Bureau of Reclamation's portion of the plan of implementation. This funding level is appropriate if salinity in the Colorado River is to be controlled so as not to exceed the established numeric criteria and threaten the associated water quality standards. Currently, there are two authorizations provided by Congress which require appropriation. The first is for the original long established program authorized by Congress in 1974. The spending ceiling for this program will soon be reached and then funds for this portion of the program will be terminated. The second authorization, often termed the basin-wide program, was authorized by Congress in 1995. It gives to Reclamation new latitude and flexibility in seeking the most cost-effective salinity control opportunities.

Details Concerning the Requested Appropriation

On-going contracts with water users in the Grand Valley of Colorado, authorized under the original Salinity Control Act, require funds for the forthcoming fiscal year and many of the activities associated with the long-established program will be drawing to a close. The Bureau of Reclamation has completed the Paradox Valley unit which involves the collection of brines in the Paradox Valley of Colorado and the injection of those brines into deep aquifers through an injection well. The continued operation of the project and other completed projects will be funded through Operation and Maintenance funds. In addition to the dollars identified above, the Salinity Control Forum urges the Congress to appropriate necessary funds to continue to maintain and operate salinity control facilities as they are completed and placed into long-term operation. New programs and new efforts will be contracted for in the forthcoming year as the Bureau of Reclamation implements their basin-wide program authorized by the Congress in 1995. Funds will be used on a variety of projects and the process for selecting those projects is set forth in a report to the Congress that was required by the 1995 act.

In addition, the Forum supports necessary funding to allow for continued general investigation of the salinity control program. It is important that the Bureau of Reclamation have planning staff in place, properly funded, so that the progress of the program can be analyzed, coordination between various federal and state agencies can be accomplished, and the identification of the future of the program can be properly planned.

PREPARED STATEMENT OF R. MAX PETERSON, EXECUTIVE VICE PRESIDENT, INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES

The International Association of Fish and Wildlife Agencies was founded in 1902 as a quasi-governmental organization of public agencies charged with the protection and management of North America's fish and wildlife resources. The Association's governmental members include the fish and wildlife agencies of the states, provinces, and federal governments of the U.S., Canada, and Mexico. All 50 states are members. The Association has been a key organization in promoting sound resource management and strengthening federal, state, and private cooperation in protecting and managing fish and wildlife and their habitats in the public interest.

Bureau of Reclamation (BOR)

The Association recognizes with appreciation the continued BOR shift away from project construction and toward non-structural water resources management objectives. The enhanced water conservation, reclamation and partnership themes of the fiscal year 1997 budget request certainly makes sense in the climate of the times. The Association notes with particular appreciation the number of projects specifically designed to enhance and restore fish and wildlife resources associated with BOR holdings.

Water Conservation and Reuse.—BOR has requested funding for new water management and conservation activities. This request for added funding for these activities, funds made available largely through reductions in other more traditional activities, is supported by the Association. Among the types of work proposed are improvements in Colorado River operations, including new approaches to water salinity control; irrigation management improvements; and water reclamation and reuse projects in California.

Central Valley Project.—It is most appropriate, and strongly supported by the Association that the BOR has requested use of $39.13 million from the Central Valley Project Restoration Fund for much needed and overdue actions to benefit environmental conditions associated with the Central Valley Project. The habitat restoration and improvement, screening construction, and acquisition of water for refuge resources, and the continued work on the water temperature control capabilities at Shasta Dam will help restore fish and wildlife resources that have been adversely impacted by this project.

Columbia/Snake River Salmon Recovery Project.—The Association strongly supports BOR's request for $13 million, including $8.2 million for water purchases, to address the increasingly serious situation associated with the endangered salmonid populations of these watersheds. While it is truly unfortunate that steps to remedy fish passage problems in these rivers necessitated a jeopardy biological opinion, it is recognized with appreciation that the fiscal year 1997 BOR budget includes funding for water to provide flows to enhance downstream migration of young fish. Adequate and safe conveyance capability for young fish is absolutely essential to restoring salmon populations.

Colorado River Endangered Species Recovery.—Responding to species poised virtually on the brink of extinction, the BOR has requested an increase in funding for critical work in the Colorado River Basin. The Association supports the request for $7.16 million for water acquisition, habitat improvements and construction of rearing facilities for these endangered resources.

Wetlands Development.—The Association supports the increased funding request for the Wetlands Development line item at $6.3 million for this important effort.

Tennessee Valley Authority (TVA)

The TVA budget request for fiscal year 1998 from appropriations is $106 million, representing no change from the funding provided in 1997. The request consists of $81.5 million for water and land management, $6.6 million for Chickamauga Lock and Dam, $7.9 million for the Land Between the Lakes Recreation Area, $4.0 million for Economic Development and $6.0 million for the Environmental Research Center at Muscle Shoals, AL.

The President's budget recommends $81.5 million to support TVA's Water and Land Management category, an increase of approximately $8 million over the fiscal year 1996 budget. The Association supports this expansion.

The Association commends TVA for their tailwater fishing improvements below Douglas and Pickwick Dams and for numerous aeration projects. This work significantly enhances affected fisheries and is appreciated by fishermen throughout the TVA region.

The Association recommends that TVA actively support and participate in the States' Clean Stream Initiative with the Office of Surface Mining (OSM) to complete projects in the TVA service area. These state-Federal-private cooperative projects

are engaged in restoring fish, aquatic life, recreational and economic opportunity in watersheds damaged by acid mine drainage from past coal mining activities.

The Association recognizes the importance of boating, fishing, camping, hunting, wildlife observation, and other conservation-oriented activities at Land Between the Lakes (LBL) and supports funding of $7.9 million for these activities.

We are encouraged that TVA has undertaken a serious review of public lands along TVA reservoirs and rivers to insure these properties are not utilized in such a manner as to exclude reasonable public use. Further, we support current and future planning efforts that insure conservation and protection of riparian habitat.

The Association notes that discussions are underway which may result in TVA no longer seeking federal funding for programs. TVA has utilized appropriated dollars to improve the environmental quality of life in the Tennessee Valley. We urge careful study of the impacts of funding reductions should they be proposed in upcoming years.

U.S. Army Corps of Engineers

The fiscal year 1998 budget proposal for Civil Works Appropriations of the U.S. Army Corps of Engineers is $3.88 billion, up from $3.78 billion in fiscal year 1997. The budget proposal reflects continued commitment to proper management of our natural resources, through dedication of $637 million to environmental programs. This represents a significant increase from the $520 million funding level of 1997. The Association applauds the fact that many of our recommendations for recent fiscal years have been incorporated by the Corps in their succeeding year's budget request.

As an example of an earlier recommendation, we had encouraged the Corps to expedite design and grant administration associated with Section 1135 projects as provided for within the Water Resources Development Act of 1986. We are pleased the Corps has taken steps to expedite the approval process for those projects through delegation to Division Commanders. We note the fiscal year 1998 budget contains a request for $21.2 million which represents an increase from the past year. As of December 31, 1996 twelve (12) projects were completed, twenty-seven (27) were under construction or design and fifty-two (52) were in the study phase. The Association has previously expressed a concern that some projects remain in the feasibility phase too long. We believe the Corps is addressing this problem, and grants will be administered more efficiently through Congressional approval of funding in the amount of $21.2 million for Section 1135 projects in fiscal year 1998. We support this funding level.

Our Association particularly appreciates the leadership of Congress in providing funding for mitigation projects. We are especially pleased that the Corps is requesting, and the Association supports, $127 million for Columbia River Fish Mitigation in Washington, $3.4 million to complete mitigation of losses associated with the Tennessee-Tombigbee Waterway in Alabama, $3.9 million for Missouri River fish and wildlife mitigation in Iowa, and 363,000 to mitigate fish and wildlife issues in the Yazoo Basin in Mississippi. The Association also strongly encourages Congress to appropriate necessary funding within the Corps budget to facilitate the mitigation feature of the West Tennessee Tributaries Project, which is needed to satisfy legal constraints to enable initiation of river restoration work within this significant watershed.We recommend that the Congress explore the need for generic legislative direction to the Corps to ensure that the older projects include the authority for fish, wildlife, water quality, and sustained minimum flow mitigation and enhancement, and if legislation is necessary, to act on that need. Further, the Association recommends that mitigation funding for ongoing projects be listed as a separate line item within the Civil Works Appropriations. This action would separate the funds from routine operations and maintenance and better facilitate the separate states' ability to identify the funds and seek legislative support for their interest.

The Association is also generally supportive of the funding requested for some of the large river restoration projects. The Association supports the fiscal year 1998 request of $3.0 million to establish meanders and wildlife habitat on the Kissimee River and $75 million to restore water flows through the Everglades and other areas in Florida. The Association also supports the budget requests of $14 million associated with the environmental management efforts with other agencies in the Upper Mississippi River System. It is in the best interest of the country to restore the habitat and hydrologic components of these rivers that have been significantly altered under previous projects.

With regard to the Corps' regulatory authority under the Clean Water Act of 1972, we strongly support the request of $112 million for implementation of a streamlined program to process, review, issue permits and provide an appeals procedure for the permitting of activities in waters of the United States, including wet-

lands associated permits and jurisdictional determinations as well as sand and gravel dredging activities. The Association believes a strong partnership program with state agencies affords the best opportunity for balanced conservation of aquatic resources.

The Corps request of $20 million to develop zebra mussel control methods and strategies, evaluate ecological factors affecting control, and coordinate technology transfer is strongly supported. The Corps is the only Federal Agency directed to conduct research and development for the control of zebra mussels and their effects on public facilities. These mussels are having significant adverse effects on native shellfish and natural habitats.

We support activities designed to enhance our environment. The utilization of dredge material to restore habitat in Chesapeake Bay in an excellent example. We support the fiscal year 1998 request of $30.6 million for this project. We also support the $2 million request for Aquatic Ecosystem Restoration as authorized by the Water Resources Development Act of 1986.

The Association recommends that the Corps continue in partnership with State Fish and Wildlife Agencies to initiate applicable restoration, mitigation and conservation projects. For example, we request the Corps continue to participate in the North American Waterfowl Management Plan through wetlands conservation, wetlands identification, and wetlands acquisition. In this regard, we support the $120,000 fiscal year 1997 request to continue cooperation with Federal and state agencies, and non-Federal interests in support of the North American Waterfowl Management Plan and for coordination of activities conducted under the Coastal America initiatives.

The Association recommends that the Corps continue to work closely with the State fish and wildlife agencies to identify priority restoration, mitigation and remediation projects needing the Corps' attention. The State fish and wildlife agencies are generally aware of where Corps projects could most effectively enhance the status of fish and wildlife resources through improvements to habitat. In particular, we encourage the Corps to participate in funding projects to meet the objectives of the North American Waterfowl Management Plan. Further, we recommend that the Corps become a partner in the Appalachian Clean Stream Initiative to restore streams damaged by acid mine drainage.

Federal Energy Regulatory Commission (FERC)

The Association recommends Congressional appropriation of $5 million to allow FERC to reimburse state fish and wildlife agencies for studies and reviews associated with hydropower relicensing activities. Section 1701 of the Federal Power Act was amended in 1992 specifically to authorize reimbursement to states for this work. FERC has never sought appropriated funds for this purpose. If appropriated funds cannot be provided, FERC should be instructed to require reimbursement for this work by the licensee. Otherwise, projects will be proposed for relicensing without adequate studies of appropriate fish and wildlife licensing requirements. This invites conflict and possibly more stringent requirements, including water releases, than would be needed if more adequate studies were made.

PREPARED STATEMENT OF HON. JIM GERINGER, GOVERNOR, STATE OF WYOMING

This testimony supports the appropriation in fiscal year 1998 of $12,210,000 for the Bureau of Reclamation for Colorado River Basin Salinity Control Programs:

Originally Authorized Program (Public Law 93–320 as amended by Public Law 98–569)	$4,300,000
Program Authorized in 1995 (Public Law 104–20)	7,600,000
General Investigation Funds for Colorado River Basin Salinity Control Programs	310,000
Total	12,210,000

This testimony is submitted in support of a fiscal year 1998 appropriation of $12,210,000 for the Bureau of Reclamation's Colorado River Salinity Control Programs. You recently received testimony from the Colorado River Basin Salinity Control Forum (Forum) submitted by the Forum's Executive Director, Jack Barnett, on behalf of the Forum's seven member states. The State of Wyoming concurs in the fiscal year 1998 funding requests and justification statements set forth in the Forum's testimony.

The State of Wyoming is one of the seven member states represented on the Forum and the Colorado River Basin Salinity Control Advisory Council (Council). The Council was created by Section 204 of the 1974 Colorado River Basin Salinity

Control Act, Public Law 93–320, and like the Forum, is composed of gubernatorial representatives of the seven Colorado River Basin states. Both the Council and Forum serve important liaison roles among the seven states, the Secretaries of the Interior and Agriculture and the Administrator of the Environmental Protection Agency (EPA). The Council is directed by statute to advise these federal officials on the progress of the federal/state cost-shared, basin-wide salinity control programs, and annually recommends to the Federal agencies what level of funding it believes is required to allow the Program to meet its objective of assuring continuing compliance with the basin-wide water quality standards.

The Council met last October and developed funding recommendations for fiscal years 1998 and 1999 based on the progress the Programs are making in managing and reducing the salt loading into the Colorado River System. Based on analyses made by the Bureau of Reclamation and the Forum, the Council believes that a minimum of $15,000,000 needs to be expended by the Bureau of Reclamation each year for its salinity control activities, including operation and maintenance of facilities and features already constructed. We are pleased to note that the amount of funding included in the President's budget for this important, basin-wide water quality improvement and maintenance program is in excess of that amount when each of the recommended funding amounts for construction, general investigation and operation and maintenance are identified and summed in the recommended budget submittal. Wyoming respectfully requests your Subcommittee's approval of the funding amounts recommended by the President for the Colorado River Basin salinity control program budget items.

If the necessary levels of funding are not provided for the Colorado River Basin Salinity Control Programs, there is an increased probability that the numeric criteria set in the water quality standards for the Colorado River may be exceeded. Delaying or deferring adequate funding for the Program at this time will create the need for a much more expensive salinity control effort in the future to assure that the Colorado River Basin states are able to meet the water quality standards for the Colorado River. "Catch-up" funding in future fiscal years will require the expenditure of greater sums of money, increase the likelihood that the numeric criteria for Colorado River water quality are exceeded, and create undue burdens and difficulties for one of the most successful Federal/State cooperative nonpoint source pollution control programs in the United States.

I wish to thank you for the opportunity to submit this testimony, and would request, in addition to your consideration of its contents, that you make it a part of the formal hearing record concerning fiscal year 1998 appropriations for the Bureau of Reclamation.

PREPARED STATEMENT OF DAVID SKIDMORE

Thank you, Mr. Chairman and members of the Committee, for the opportunity to provide testimony to the Energy and Water Development Subcommittee regarding the status of the In Situ Technology Research Project at the Santa Cruz field test site near Casa Grande, Arizona. The project operates under a cost sharing cooperative agreement between the Bureau of Reclamation and the Santa Cruz Joint Venture (SCJV).

My name is David Skidmore. I am the project manager, employed by the SCJV. As the non-Federal partner in the project, the SCJV is the prime contractor, reporting to the Bureau of Reclamation.

In September of 1988, the SCJV signed a cooperative agreement with the U.S. Bureau of Mines to conduct a research project at the Santa Cruz site. This agreement specified that the Bureau would fund 75 percent of the estimated $22,000,000 project, with the remaining 25 percent to be funded by the SCJV.

The In Situ project was transferred to the Bureau of Reclamation from the Bureau of Mines through a Memorandum of Understanding, effective February 2, 1996 to carry the program "* * * through a logical completion point." This committee appropriated $444,000 for the project for fiscal year 1997, and we would like to express our great appreciation for your consideration and support for the program. The $444,000 was provided as an addition to previously appropriated and obligated funds which were transferred with the project.

In keeping with the original and continuing contract, the SCJV will contribute approximately $470,000 in matching funds for project operations in fiscal year 1997.

In directing that the project be transferred, the Congress also provided funds to be used "* * * for the completion and/or transfer of certain ongoing projects * * *" to cover personnel and overhead costs. This transfer included the In Situ contract.

A portion of these "in-house" monies are being dedicated to research coordination and oversight activities.

Mr. Chairman, In Situ mining is a method of extracting metal from an ore body "in place"—without excavation. Unlike conventional mining practices, there is no open pit or underground excavation of the ore-bearing rock. The chemical process being used to extract the copper from the Santa Cruz ore body has been generally used in heap leaching of previously excavated copper oxide ore. But the technology has never been used to extract copper from ore that is still in place deep in the ground, as it was deposited naturally through the millennia.

The purpose of this experimental program is to test the technology at depth to see if it is technically possible, environmentally safe and economically feasible.

It has taken a lot of time and work, and a great deal of cooperation between the partners, to get to this point. We first conducted site characterization studies to provide the technical data necessary to prepare detailed engineering designs and environmental permit applications. A "five-spot" well pattern was constructed through the proposed in situ mining test zone to provide the means to conduct hydrologic testing. Four monitor wells were also constructed through the aquifer that overlies the copper deposit.

Utilizing a salt tracer test, we were able to conduct hydrologic characterization studies, laboratory leaching and attenuation tests and micro-scale geologic characterization studies. The salt tracer tests were very encouraging and demonstrated that the injected fluids could be contained and not migrate to the overlying aquifer.

All of the field and laboratory preparation was necessary to develop an application for the Aquifer Protection Permit (APP), required by the Arizona Department of Environmental Quality. At the same time, the Bureau of Mines conducted an Environmental Assessment as required by the National Environmental Policy Act (NEPA). This process included two public hearings in Casa Grande, Arizona, which were well publicized and attended. The draft EA was made public in September of 1994, and was well received. No negative comments were expressed, or received in writing by the Bureau. On December 1, 1994, the Bureau issued a Finding of No Significant Impact (FONSI).

We have since received the Aquifer Protection Permit from the ADEQ as well as an Air Quality Permit from Pinal County, Arizona.

The permitting process was lengthy and complex. However, the APP is the first such permit ever issued for an In Situ leaching process for an unmined deposit. A large number of unknowns were explored and resolved, greatly clarifying and defining the process. Future permit applications will be far less complex for other mining operations.

With the receipt of the permits and the FONSI, we proceeded to the construction of the surface facilities were completed in December. We then conducted and completed our commissioning and "shakedown" tests.

I am very pleased to say, Mr. Chairman, that we are now well into Phase Four of the program: field test operation and data collection. We have begun to extract metal from the solution through solvent extraction/electrowinning (SX/EW) in concentrations sufficient to "plate" pure copper. However, this accomplishment has not been without surprises and technical problems that we have had to confront without the advantage of previous experience. For example, attempting to increase copper loading through the management solution flow paths has resulted in a need to modify well construction. Additionally, the operation of the lift system with full strength solutions has required a series of changes by the manufacturer just to survive the aggressive solutions and keep the pumps operating.

We anticipate that the test will take two years to accumulate enough data as to determine technical and economic feasibility, and confirm environmental protection. This is truly the "payoff" phase of the project. Although it is the final two or three percent of the program in terms of funding, it will provide ninety percent of the useful information that was originally anticipated. To get a handle on the economics of In Situ mining, we must first master the technical aspects of controlling and directing solutions to target concentrations within the ore body.

And although the original objectives of the program were limited to the development of mining technologies, we have discovered very promising applications for underground stabilization and removal of chemical and biological contamination. This could include the placement of physical barriers at a wide variety of depths.

As a result of these discoveries, the project is very compatible with the Bureau of Reclamation's mission to reduce human impacts on surface and ground water resources and improve water quality through the application of new engineering technologies. And, in keeping with the statement of the managers in the fiscal year 1997 Conference report, we are cooperating with the Bureau in an examination of our research data to facilitate the application of the technology to other Bureau programs.

We will continue to conduct the field test through fiscal year 1998 to achieve conclusive evidence of technology efficiency and sufficient manipulation and control of the mining solutions to demonstrate economic feasibility for commercial applications, and transfer to the industry at large.

We estimate the total requirement for the field test in fiscal year 1998 to be $1,400,000 and respectfully ask that Committee add that sum to the Bureau of Reclamation's appropriation for that purpose.

It is also our understanding that the continuing oversight and supervisory requirements of Bureau personnel will require approximately $300,000 in addition to the remaining funds transferred with the contract.

I think it is important to point out that this lengthy and intensive process could not have been successful without a very successful partnership between the federal agencies and the private sector. If conducted only by the private sector, this information would remain proprietary and would not be available to the general public or contribute to the overall advance of mining and groundwater technology. The project will be a model for effective cost-sharing partnerships in research and experimental programs.

Again, I would like to thank you, Mr. Chairman, and members of the committee, for allowing me this opportunity to present testimony for the record.

DEPARTMENT OF ENERGY RESEARCH AND DEVELOPMENT PROGRAMS

PREPARED STATEMENT OF DR. DONALD L. KLASS, PRESIDENT, BIOMASS ENERGY RESEARCH ASSOCIATION

This testimony pertains to DOE's appropriation request for Biopower/Biofuels Energy Systems.

The Biomass Energy Research Association (BERA) was founded in 1982 and is a non-profit association headquartered in Washington, D.C. Our objectives are to promote education and research on biomass energy and waste-to-energy systems that can be economically utilized by the public, and to serve as a source of information on policies and programs.

I would like to thank the Subcommittee on behalf of BERA's members for the opportunity to present our position on the federal funding of biomass research. Continued federal support of this program is essential to provide the stimulus to develop renewable, environmentally clean, alternative energy resources that can displace and help conserve our valuable fossil fuels, address many of the environmental issues that confront our Nation, and help alleviate the economic problems created because of our dependence on imported oil.

I had the opportunity to examine the details of DOE's request for biomass funding in fiscal year 1998 before this testimony was prepared, and would like to comment on the concerns that BERA's Board of Directors have before our recommendations are presented. DOE's emphasis on scale-up projects, which are relatively costly and consume a disproportionately large portion of the DOE appropriation for biomass, has adversely impacted the research program component. Even with a minimum of 50 percent industry cost-sharing for the scale-up projects, DOE has been compelled to terminate research in several thermochemical and microbial conversion areas. We feel that a balanced research program should be sustained and protected. We have therefore continued to recommend both a diversified portfolio of research and an appropriate amount of funding for scale-up without diminishing either the research or scale-up programs. The BERA Board is also concerned that biomass gasification research for hydrogen production in progress under the Interior Appropriations Bill duplicates some of the research already completed or in progress under the Energy and Water Bill.

DOE's request for biomass funding in fiscal year 1998 includes a substantial amount of detail that has generally not been presented in the past. The R&D plan has basically been updated as we have recommended for the past few years, so BERA is not recommending that it be done again in fiscal year 1998. A significant amount of information is elaborated in DOE's fiscal year 1998 request as to specific projects and expenditures. Our recommendations are presented in the same manner and order as the DOE request, but we have added several research areas that are either new or that BERA's Board recommends be restored to sustain a balanced research program.

Specifically, BERA recommends that $88 million be appropriated for biofuels research and development, and industry cost-shared scale-up in fiscal year 1998. The highlights are:

—A total of $53 million for research and $35 million for industry cost-shared scale-up projects, not including the industry cost-shared amount of at least $35 million.
—$16 million for research and $25 million for industry cost-shared scale-up projects by the Office of Utility Technologies. The scale-up projects include the Hawaii and Vermont gasification and the integrated biomass production-conversion projects.
—$35 million for research and $10 million for industry cost-shared scale-up projects by the Office of Transportation Technologies, including $8 million for technology transfer managed by DOE's Regional Biomass Program. The scale-up projects include the NREL ethanol process development unit in Colorado, the BCI International Corporation ethanol plant in Louisiana, the Gridley ethanol project in California, and selected feedstock production projects on plots of at least 1,000 acres in size.
—$2 million for research by the Office of Industrial Technologies.

ALLOCATION OF APPROPRIATION RECOMMENDED BY BERA

Regarding specific DOE budget categories, BERA recommends that the appropriation for fiscal year 1998 be allocated as shown in the accompanying table. The allocations are listed in the same order as DOE's request for fiscal year 1998, except that certain research areas have been added that DOE eliminated or that are new research areas. Note that the recommended budget for each scale-up project includes only DOE funds. It does not include industry cost-shared funds, which are required to be a minimum of 50 percent of the total budget for each scale-up project.

OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY

Office/Program Area	Recommended Budget	
	For Research	For Scale-Up
Utility Technologies:		
Thermochemical Conversion:	.....	.....
Advanced Combustion	$2,000,000	.....
Cofiring with Coal	2,000,000	.....
Advanced Gasification	2,000,000	.....
Advanced Pyrolysis	2,000,000	.....
Fuel Cell Systems	2,000,000	.....
Emission Control Systems	1,000,000	.....
Wastewater Treatment	500,000	.....
Ash Disposal and New Uses	500,000	.....
Hot-Gas Clean-Up	500,000	.....
Advanced Materials	500,000	.....
Microbial Conversion: Advanced Digestion	2,000,000	.....
Systems Development:		
Hawaii and Vermont Gasifiers	.....	$7,000,000
Integrated Biomass Production-Conversion Projects	.....	18,000,000
Cogeneration: Advanced Combined Cycles	1,000,000	.....
Municipal Solid Waste	(1)	.....
Feedstock Production	(2)	.....
Regional Biomass Program	(3)	.....
Subtotal	16,000,000	25,000,000
Transportation Technologies:		
Regional Biomass Program	8,000,000	.....
Microbial Ethanol:	.....	.....
Lignocellulosics Hydrolysis	5,000,000	.....
Lignocellulosics Fermentation	5,000,000	.....
Academic Consortium Projects	1,000,000	.....
NREL Ethanol Plant	.....	4,000,000
BCI International/U. Florida	.....	4,000,000
Gridley, California/NREL	.....	.....
Biodiesel Production	1,000,000	.....

OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY—Continued

Office/Program Area	Recommended Budget	
	For Research	For Scale-Up
Feedstock Production	6,000,000	2,000,000
Thermochemical Conversion:		
Ethanol Production	2,000,000	.....
Mixed Alcohol Production	3,000,000	.....
Oxygenates from Biomass	2,000,000	.....
Reforming Alcohols for Autos	2,000,000	.....
Subtotal	35,000,000	10,000,000
Industrial Technologies:		
Municipal Solid Waste	1,000,000	.....
Chemicals	1,000,000	.....
Subtotal	2,000,000	.....
Capital Equipment	.....	.....
Total	53,000,000	35,000,000
Grand Total	88,000,000	

[1] Included in Industrial Technologies.
[2] Included in Transportation Technologies.

BERA RECOMMENDS A BALANCED PROGRAM OF RESEARCH AND SCALE-UP

BERA's recommendations comprise a balanced program of research and scale-up on feedstock production, conversion research, and technology transfer to the private sector. Advanced power generation technologies, alternative liquid transportation fuels, innovative municipal solid waste disposal-energy recovery systems having superior environmental benefits and minimal emissions, and novel biomass-to-chemicals processes are emphasized.

In addition, BERA strongly urges that at least 50 percent of the federal funds for biomass research, excluding the funds for the scale-up projects, be used to sustain a national science and technology base in biomass via subcontractors outside DOE's national laboratories. While it is desirable for the national laboratories to manage and coordinate DOE-sponsored research activities, support for independent U.S. scientists and engineers in biomass industries, academe, and research institutes that are unable to fund research will encourage commercialization of emerging technologies and serious consideration of innovative approaches. It will also help expand the professional development and expertise of a broad and diverse group of researchers committed to the advancement of biomass energy technology and alternative fuels.

The following represents BERA's specific recommendations for the research and industry cost-shared scale-up program areas and the funding we urge you to include for fiscal year 1998.

OFFICE OF UTILITY TECHNOLOGIES

Thermochemical Conversion

Currently, there are about 8,000 MW of on-line electric power capacity fueled by biomass. Most of this capacity is fueled by the heat and steam raised from conventional waste biomass combustion. Municipal solid waste, and forest and wood products residues are the primary fuels. Development of advanced combustion methods for these fuels and other biomass could have significant economic and environmental benefits that can lead to further growth in biomass power generation. One of the high priority research areas for this research is the cofiring of biomass and coal, which offers several opportunities for reducing undesirable emissions and pollutants at low cost. However, much of the laboratory and small-scale experimental research necessary to perfect these processes has been terminated by DOE. Previous research on the thermochemical gasification of biomass has resulted in the development of a few advanced process designs and reactor configurations that maximize product yields and provide optimum product distributions, but again, most of the

research has been terminated. Advanced pyrolysis processes that are practical sources of energy and fuel have essentially not been developed at all in the United States because the research was terminated, while significant advances have been made elsewhere and in some cases, commercialized worldwide, including in the United States. Research (not scale-up) should be initiated again by DOE for each of these 4 areas—combustion, cofiring, gasification, and pyrolysis—with the goal of developing the next generation of thermochemical biomass conversion processes for power generation. Integration of biomass gasifiers with fuel cells should also be researched as potential, high-efficiency power generation systems. Fuel cell systems that can tolerate the sulfur levels found in certain biomass-derived fuel gases without sacrificing system affordability as well as the testing of integrated gasification-fuel cell systems should be included in this research.

In addition to the restoration of this important research, priority should also be given to the development of innovative enabling technologies consisting of advanced emission control systems, advanced wastewater treatment methods, improved ash disposal methods and new uses, effective, low-cost, hot-gas clean-up methods, and advanced materials that eliminate corrosion and erosion problems for thermochemical reactors and combustion turbines for biomass feedstocks. The status of each of these technologies is far from what is needed, yet they are essential for practical, low-cost thermochemical conversion of biomass.

BERA recommends that a total of $13.0 million, allocated as shown in the table on page 2 of this testimony, be appropriated for this research.

Microbial Conversion

Microbial gasification is unique in that the process produces methane directly as a primary product from the full range of biomass including virgin biomass and many waste biomass types. Methane is the major fuel component in natural gas. Research is needed to develop advanced systems that permit higher feedstock concentrations and smaller reactor volumes, and therefore lower capital costs. This research is expected to lead to practical methods for alleviating numerous environmental problems caused during waste disposal and the economic production of methane from low-cost biomass. And in the case of municipal wastewaters, municipal solid waste, and wastes in landfills, low-cost, waste stabilization-methane production systems are expected to evolve from continued research. BERA recommends that $2.0 million be provided to restore this research to DOE's program.

Systems Development

The projects to scale-up medium-Btu gas production and power generation in Hawaii and Vermont were continued in fiscal year 1997. DOE's funding request for fiscal year 1998 indicates the Hawaiian plant will be scaled further through a cost-shared venture with a private sector partner, and that construction of the Vermont plant will be completed in fiscal year 1998. These projects should be continued. The 4 integrated biomass production-conversion projects chosen by DOE for scale-up from the feasibility studies should also be continued. BERA recommends that $7.0 million be appropriated for the gasification projects as DOE requested, and that $18.0 million be provided to enable initiation of Phase II of the integrated biomass production-conversion projects selected by DOE for New York, Iowa, and Minnesota (2 projects).

Cogeneration

The development and testing of direct biomass combustion turbines and small, biomass-fueled power systems should be continued, particularly to assist in the design of advanced combined cycle systems that can supply cogenerated power and energy at high efficiencies. An alternative that should also be included in this research is the integration of advanced thermochemical conversion processes with power generation in steam-injected gas turbines (STIGS). BERA recommends that $1.0 million be provided for this research.

OFFICE OF TRANSPORTATION TECHNOLOGIES

Regional Biomass Program

Although the Regional Program is carried out with a broad spectrum of industry in transportation fuel, electric power, and other sectors, it is managed by DOE's Office of Transportation Technologies. The Regional Biomass Program established by Congress in 1983 is implemented through five separate regions located in the Southeast, Northwest, West, Great Lakes, and Northeast. These programs have been important in establishing individual state biomass programs, and in stimulating technology transfer and the development and commercialization of the biomass energy industry in the private sector. The Regional Biomass Program activities have cre-

ated awareness and a positive image for biomass energy while providing significant environmental enhancement and creating new jobs, especially in rural areas. Regional Program activities are typically highly leveraged with industry adding 2 to 4 times the investment of federal dollars. One example is the development and installation of low-cost, anaerobic lagoons for treatment of livestock waste and generation of methane. This technology is usable in hundreds of applications and offers combined energy recovery and waste treatment, while capturing and using methane that would otherwise contribute to global climate change. The five Regional Programs should be maintained to stimulate and assist in the development of the biomass industry and they should also take the lead role in transferring laboratory results to the private sector. BERA urges that $8.0 million be provided to continue and expand the work of the Regional Programs.

Microbial Ethanol

Application of the rapidly advancing field of biotechnology to the conversion of low-cost lignocellulosics to liquid fuels such as ethanol should be continued. The successful genetic engineering of bacteria that can ferment all the pentoses and hexoses in these feedstocks at the same time is expected to result in considerable reduction of the cost of ethanol. Future research should be concentrated on conversion of lignocellulosics by high-yield, acid-and enzyme-catalyzed hydrolysis processes to the free sugars, on integrating this technology with the fermentation process, and on the utilization of the lignin fractions as octane enhancers and chemicals. BERA recommends that the funding for this research consist of $5.0 million for hydrolysis research and $5.0 million for microbial ethanol research.

It is also recommended that funding of $1.0 million be provided for 50:50 cost-shared, long-term research projects with the Consortium for Plant Biotechnology Research, which is a group of universities having many faculty who are specialists in fermentation ethanol.

BERA also recommends that funds be provided for the following industry cost-shared projects: $4.0 million for operation of NREL's PDU for production of microbial ethanol from lignocellulosic feedstocks in Colorado by simultaneous saccharification-fermentation (SSF) process and $4.0 million for the microbial ethanol plant in Louisiana that will use lignocellulosic feedstocks and the University of Florida's genetically engineered bacterium that simultaneously ferments all the pentoses and hexoses. The microbial ethanol project in Gridley, California for the conversion of rice straw by SSF is expected to be continued with carry-over funds from fiscal year 1997. The NREL plant is being operated with a CRADA partner to obtain scale-up data. Successful operation of this plant will establish the technical feasibility of the SSF process.

Biodiesel Production

Considerable progress has been made by U.S. researchers to develop biodiesel fuels from natural triglycerides produced by biochemical processes that occur within growing biomass. This research should be continued with emphasis on the reduction of biodiesel costs and performance characteristics to satisfy the requirements of the EPA and engine manufacturers. BERA recommends that $1.0 million be directed to continue biochemical conversion research for transportation applications.

Feedstock Production

Land-based biomass grown and harvested specifically for liquid biofuels represents a long-term approach to energy plantations that can supply large amounts of fossil fuel substitutes. Considerable progress has been made on the efficient production of short-rotation woody crops, and on the growth of herbaceous species. In addition, research on tissue culture techniques and the application of genetic engineering methods to low-cost energy crop production have shown promise. This research should be continued to develop advanced biomass production methods to meet the anticipated feedstock demand in both the transportation and power production sectors. Conventional production methods are insufficient to supply sustainable biomass energy over the long term. BERA recommends that $6.0 million be directed to continue biomass production research.

BERA also recommends that industry cost-shared, scale-up projects chosen by DOE of at least 1,000 acres in size be started to initiate development of large-scale, commercial energy plantations in which dedicated energy crops are grown and harvested for use as biomass resources. These projects should be strategically located and should utilize the advanced biomass production methods developed from the research conducted to date. Successful completion of this work will help biomass energy attain its potential by providing the data and information needed to design, construct, and operate new biomass production systems that can supply low-cost

feedstock for both conversion to transportation fuels and electric power. BERA recommends that this scale-up effort be funded at $2.0 million.

Thermochemical Conversion

Thermochemical conversion research to produce clean-burning, storable, liquid transportation fuels at competitive costs is the prime target of this program component. Research has established the technical feasibility of several advanced liquefaction processes, and has improved our understanding of the mechanisms of conversion. Direct conversion of wood and herbaceous feedstocks via pyrolysis to liquid fuels and their upgrading by advanced catalytic processes to transportation fuels show promise. Continued research is expected to increase the overall liquid yields to the point where the gasoline costs are competitive with those of petroleum-based fuels. Research on the on-board reforming of storable alcohols shows considerable promise as a source of high-hydrogen auto fuels. This technology has the potential of supplying vehicular power at very high efficiencies via fuel cells or internal combustion engines. Research on the thermochemical conversion of low-grade biomass for the production of low-cost ethanol, mixed alcohols, and ethers via synthesis gas for use as auto fuels also shows promise. Preliminary work indicates the conversion of synthesis gas has the potential of producing ethanol, mixed alcohols, and ethers at costs that are much less than the corresponding costs of microbial products or derivatives. Each of these areas should be added to DOE's program. BERA recommends that funding be provided as follows: $2.0 million for thermochemical ethanol research, $3.0 million for thermochemical mixed alcohol research, $2.0 million for developing biomass-derived oxygenates by thermochemical processes, and $2.0 million for alcohol reforming research.

OFFICE OF INDUSTRIAL TECHNOLOGIES

Municipal Solid Wastes.—Research is still needed to develop improved methods to measure the emissions of solid waste disposal processes on-line, and to incorporate automatic feedback controls during disposal and energy recovery. There is also a major need for low-cost, solid waste disposal systems for small communities and building complexes.

Chemicals.—Waste biomass can be converted to a wide range of chemicals. Research should be continued to develop advanced processes that utilize thermochemical and biochemical conversion methods as well as advanced physical separation techniques.

BERA recommends that $2.0 million be appropriated to continue research on both improved municipal solid waste disposal and advanced processes for chemicals from biomass.

PREPARED STATEMENT OF DR. BERNARD LEE, PRESIDENT, INSTITUTE OF GAS TECHNOLOGY

The Institute of Gas Technology (IGT), located in Des Plaines, Illinois, is a not-for-profit research and educational institute. For over 50 years, we have performed technology-related research and development for the federal government, the natural gas industry and other private-sector clients. Our unique status allows us to play a significant role in the development of technologies that have wide-ranging application and benefit.

We submit this testimony in support of two areas that link IGT experience with the Energy & Water subcommittee's jurisdiction: the Department of Energy programs in biomass and hydrogen research.

Biomass programs:

For fiscal year 1998, DOE has requested a significant increase in the overall Biopower/Biofuels Energy Systems budget. IGT urges this subcommittee to support that full request. Increased use of renewable biomass energy represents a great opportunity for increased energy self-reliance for many parts of our country, in rural areas and targeted industrial sectors, as well as for many international applications. With technologies currently under development in the DOE program, those gains can be made economically and in an environmentally sound manner. Although the DOE fiscal year 1998 request represents an increase over current fiscal year 1997 spending, it reflects the significant, steady progress in biopower/biofuels technologies, and remains a relatively small federal commitment when compared to the energy and environmental contributions that biopower/biofuels technologies will provide.

In the biomass energy research area, IGT is currently actively involved in two major DOE cost-shared projects in the Biopower Energy Systems—Utilities—Systems Development area. Both these projects show strong promise for the successful, efficient conversion of renewable biomass to clean, cost-competitive electricity.

The first IGT-related project is the 100-ton-per-day Biomass Gasifier Facility (BGF) in Hawaii, converting bagasse, the biomass waste from a sugar refining operation, into a bio-fuel for electrical power generation. This project began in 1991, and is expected to complete its current testing phase with fiscal year 1997 funding.

With a year-round growing season, Hawaii can produce sufficient biomass to meet a substantial portion of its electrical generation fuel needs if a viable technology is available to convert biomass into an appropriate bio-fuel for a modern power plant. Biomass gasification is the most promising way to produce this bio-fuel. The bio-fuel can then be used for power generation via conventional gas turbines or fuel cells. For these reasons, Westinghouse Electric Corporation (WEC), the Pacific International Center for High Technology Research (PICHTR) and IGT entered into an agreement with DOE to design, construct, operate, and evaluate a BGF. The Hawaiian Commercial & Sugar Company (HC&S), the State of Hawaii, and the Hawaii Natural Energy Institute (HNEI) of the University of Hawaii are important participants in this program.

The initial phase of the project concentrated on engineering scale-up, process performance, and demonstration of biomass quality. This phase was successfully completed. The bio-fuel produced in this initial test met design specification required to move forward with the final verification phase.

The current Technology Verification Phase (TVP) is focused on long term testing necessary to demonstrate that an integrated biomass gasification system can be operated successfully. This is a must for the market to accept the technology for commercial application. Invaluable performance date, critical to the continued evolution of this technology, will be obtained and evaluated in depth. Discussions are currently under way with HC&S to adapt the BGF to utilize the product bio-fuel in a gas turbine to produce electricity. WEC has estimated that this integrated technology has the potential to improve the biomass power plant efficiency to 2 to 3 times above today's conventional technology.

Future plans for the DOE technology development program at the Hawaii BGF include the addition of facilities to enable production of bio-fuel for application with fuel cell technology for electricity production. The use of molten carbonate fuel cell technology will provide important applied research toward the production of clean, high efficiency, environmentally-benign energy production, with widespread application. Because molten carbonate fuel cells represent the optimum technology for converting hydrogen energy to electricity, this phase of the BGF development program will demonstrate the integration of biomass gasification and fuel cell technologies by operating an advanced generation 50-kilowatt test scale molten carbonate fuel cell, using hydrogen from the gasifier's output as fuel. In order to leverage maximum value from federal and cost-sharing investments, the current biomass gasifier in Hawaii would serve as the most cost-effective demonstration site.

IGT requests this subcommittee's support for the continued development of this project, which will have major implications for Hawaii's energy policy, as well as other nation-and world-wide applications. Total funding for the molten carbonate fuel cell phase of this project over the next two fiscal years is estimated at $10,000,000. Of that total, the State of Hawaii and the Hawaii BGF project's industrial partners will provide $4,000,000. The proposed federal share will be $3,000,000 in fiscal year 1998 and $3,000,000 in fiscal year 1999, and IGT urges this subcommittee to dedicate sufficient funds to DOE's Biopower Energy Systems—Utilities Systems Development program to support these Hawaii BGF developments.

The second major biomass gasification project in which IGT is involved is the Minnesota Agri-Power Project (MAPP), one of four competitively selected, cost-shared projects supported jointly by DOE and the U.S. Department of Agriculture through the Biomass Power for Rural Development Initiative.

The Minnesota project will be an efficient, utility-scale 75 megawatt power plant producing steam and electricity, through a combustion turbine, from the bio-fuel produced by gasifying the alfalfa stems from an alfalfa processing facility. The alfalfa processing facility will handle nearly 700,000 tons of locally-grown alfalfa per year, producing over 300,000 tons of animal feed from the alfalfa leaves. Through the MAPP project, the stems from the alfalfa plant, however, will now be converted into an additional economic stream for the operation, adding significant value to the local economy and serving as a model for similar renewable opportunity feedstocks or dedicated energy crop usage in many rural areas of the United States.

The DOE fiscal year 1998 request for the Biomass Power for Rural Development Initiative has increased by $10.767 million over the fiscal year 1997 appropriation

for this line item, reflecting the funding necessary to move all four current projects ahead on schedule. IGT urges the subcommittee's support for the full DOE request in this area.

Hydrogen programs:

IGT has a long history in hydrogen-related research and development, working in the full range of areas from cost-effective hydrogen production, to safe distribution and storage, to clean, efficient end uses. We have been pleased to see the recent increased hydrogen research funding supported by this subcommittee and by the Congress, and are pleased to see that the fiscal year 1998 request by DOE has now matched the fiscal year 1997 appropriated level.

IGT strongly supports the general balance and direction of the DOE program, but asks the Congress to once again allocate more money for fiscal year 1998 hydrogen research than the DOE has recommended. We urge this subcommittee to appropriate an additional $5 million above the DOE request.

One area of the current DOE hydrogen research funding is supporting what are known as Phase I activities, identifying technological, economic or market issues related to the increased, economical use of hydrogen to meet our nation's energy needs. Nine competitively selected, cost-shared projects are currently underway or under negotiation with DOE, conducting studies in near-term hydrogen opportunities, biomass gasification, and hydrogen filling stations.

IGT is part of a team that is currently negotiating one of those Phase I awards with DOE. The proposal seeks to take advantage of our combined experience in biomass gasification, hydrogen production and fuel cell development. The objective of this Phase I feasibility study is to develop a clear understanding of the technical, economic and market issues that need to be resolved to ensure success of an integrated biomass gasification and molten carbonate fuel cell system. Much of the information developed through this study will help enhance and leverage the early application of both the hydrogen to electric power research in the DOE Hydrogen program, and the biomass to electric power program currently underway in the DOE Biopower/Biofuels program. The Phase I study will be applicable to multiple biomass feedstocks and hydrogen-to-power technologies.

Phase II of the current DOE program will move on from the successful results of the Phase I studies to begin to find workable solutions to the problems or issues that have been identified. Because the implementation of Phase II solutions for any project will generally be more costly than the Phase I study, IGT's recommendation of an additional $5 million for fiscal year 1998 above the DOE request will allow DOE to advance more successful Phase I projects into Phase II developments, as well as sustain a strong basic and applied research program, continuing to build the DOE hydrogen research program in a steady manner that will allow DOE to take full advantage of its early successes in hydrogen research.

PREPARED STATEMENT OF ROBERT L. MCCRORY, PROFESSOR AND DIRECTOR, LABORATORY FOR LASER ENERGETICS, UNIVERSITY OF ROCHESTER

Summary and Requested Action

The Department of Energy's (DOE) Defense Programs' strategy relies on maintaining the technology infrastructure and core competencies to insure that the U. S. nuclear deterrent is credible while contributing to the U. S. research base. The National Inertial Confinement Fusion (ICF) program plays a central role in the stockpile stewardship technology program with the threefold laboratory mission: (1) To demonstrate the ignition of small masses of thermonuclear fuel, (2) To provide access to physics regimes of interest in nuclear weapon design and thereby generating nuclear-weapons-related physics data, and (3) To provide an above-ground simulation capability for nuclear weapons studies and effects. With cessation of underground nuclear tests and contraction of the nuclear weapons research and development effort, ICF is a vital component of the DOE's technology-based stockpile stewardship program. A potential long-term secondary benefit is that ICF could provide a source of environmentally acceptable and economically competitive civilian power.

The University of Rochester's Laboratory for Laser Energetics (LLE), a participant in ICF research since the 1970s, is the only ICF program that has been jointly supported by the Federal government, State government, industry, utilities, and a university. At relatively small comparative cost to the government, LLE makes fundamental contributions to the National program and transfers technology to the public and private sectors through the training of graduate students and interactions with industry and other Federal laboratories. The Laboratory serves as a National laser users' facility benefiting scientists throughout the country. The

OMEGA laser located there is now the highest power ultraviolet fusion laser in the world.

The Laboratory's prime mission is to validate the direct-drive option for ICF. There is a close collaboration among LLE, Lawrence Livermore National Laboratory (LLNL), and Los Alamos National Laboratory (LANL) to support the demonstration of ignition and gain in the laboratory, the objective set by the National Academy of Sciences' (NAS) review of the National program in 1990. During fiscal year 1997 LANL, LLNL, and LLE conducted joint experiments on Omega, both for direct and indirect drive.

Reviews of the Rochester program by the NAS and the Inertial Confinement Fusion Advisory Committee (ICFAC) recommended the OMEGA Upgrade and evaluated the potential of direct drive as high priority in the National program. The OMEGA Upgrade, completed on time and on budget ($61,000,000) in fiscal year 1996, exceeded all acceptance test criteria (45,000 Joules of ultraviolet light—50 percent above the 30,000 Joule design specification!). OMEGA, the newest Defense Programs' facility, established a new neutron yield record of 100 trillion neutrons. OMEGA is the only facility that can demonstrate the scientific potential of direct drive to provide a modest-to high-gain energy option for the Nation. ICFAC [1] emphasized the priority of conducting cryogenic experiments on OMEGA by fiscal year 1999. During construction of the National Ignition Facility (NIF), OMEGA will be the principal ICF facility in the National program for ICF-based stockpile stewardship experiments. The funding profile in the Cooperative Agreement proposal for the LLE program for operation of the new facility is shown in the table below.

	Fiscal Year—				
	1998	1999	2000	2001	2002
Operations	$24,030,000	$25,458,811	$26,477,163	$27,536,250	$28,637,69
Capital	2,080,000	2,249,200	2,249,728	2,339,717	2,433,306
Total	26,110,000	27,622,011	28,726,891	29,875,967	31,071,005

To provide the operations support for program deliverables and operation of OMEGA, and maintain the training programs at Rochester, a total authorization and appropriation of $26,110,000 ($24,030,000 for operations and $2,080,000 for capital equipment replacement and modernization) is requested for the University of Rochester for fiscal year 1998.

Background

Thermonuclear fusion is the process by which nuclei of low atomic weights, such as hydrogen, combine to form higher atomic weight nuclei such as helium. In this process some of the mass of the original nuclei is lost and transformed to energy in the form of high-energy particles. Energy from fusion reactions is the most basic form of energy in the universe; our sun and all other stars produce energy by thermonuclear fusion reactions occurring in their interior. Fusion is also the process that provides the vast destructive power of thermonuclear weapons.

To initiate fusion reactions, the fuel must be heated to tens of millions of degrees. In stellar bodies, containment is possible because of the large gravitational force. On earth, ICF involves the heating and compression of fusion fuel by the action of intense laser or particle beam drivers. There are two approaches to ICF, direct and indirect drive: indirect drive involves the conversion of beam energy to x-rays to compress a fuel capsule in an enclosure called a hohlraum; direct drive involves the direct irradiation of a spherical fuel capsule by energy from a laser and may be more efficient energetically than indirect drive. For either approach, if very extreme density and temperature conditions are produced, it is possible to produce many times more energy in these fusion reactions than the energy provided by the drivers.

Inertial Confinement Fusion Program Focus

The 1990 NAS review of the ICF program [2] identified the program priorities that were subsequently endorsed and are being pursued by the DOE. The NAS report states "The expeditious demonstration of ignition and gain should be the highest

[1] Inertial Confinement Fusion Advisory Committee Report to Assistant Secretary Reis (February 21, 1996).

[2] Review of the Department of Energy's Inertial Confinement Fusion Program Final Report (National Academy Press, Washington, DC, 1990).

priority of the inertial confinement fusion (ICF) program. Adequate funding toward this goal must be assured."

The NAS report identified the glass laser program as the best path to demonstrate ignition (initiation of a thermonuclear reaction that can be self-sustaining) and propagating thermonuclear burn. A recent independent review completed by the JASONS[3] stated "The inertial fusion program represents the closest approach we know of to a number of critical parameters in the weapon environment Naturally we expect continued progress in further evaluating ignition prospects from experiments on Nova and on OMEGA Upgrade, a direct-drive laser facility at the University of Rochester."

DOE has accepted the recommendations of the reviews, and substantial progress has been made. Outstanding results from indirectly driven targets on the NOVA facility at LLNL have been obtained, and the NOVA Technical Contract, an experimental and theoretical program designed to resolve potential areas of risk on the NIF has been essentially completed satisfactorily. The preliminary design phase for the NIF has been completed. The purpose of the NIF is to demonstrate ignition, propagating burn, and modest gain in the laboratory. The NIF project completion is projected to be 2003. As the detailed design of NIF is completed, and construction begun for the NIF, OMEGA will be the principal ICF facility that can be used for stockpile stewardship experiments by LLNL and LANL, and for direct-and indirect-drive ICF experiments as NOVA is phased out.

LLE is the primary focus in the U. S. for the direct-drive approach to ICF. The NAS report states that direct drive may ultimately prove to be the best approach to ICF and provide the most efficient path to a laboratory-scale thermonuclear capability for both energy research and defense technology needs. OMEGA is the only facility that can demonstrate the scientific potential of direct drive to provide modest-to high-gain on the NIF.

For several years an extensive collaborative program between LLNL, LANL, and LLE has provided data on basic physics, beam smoothing, and unstable hydrodynamics using available laser facilities, such as NOVA. This collaboration is continuing on OMEGA. The joint effort includes both nuclear weapons physics experiments and ICF experiments. Physics issues for both ICF and weapons issues for the stockpile stewardship program fall into five broad categories: irradiation uniformity, laser energy coupling and transport, laser-plasma interaction physics, hydrodynamic stability, and hot-spot and main-fuel-layer physics. The OMEGA and NIF programs are complementary. Figure 1 illustrates the schedule for the glass laser facilities to be used in the National program plan for inertial fusion, and shows the phased availability plan for the NIF.

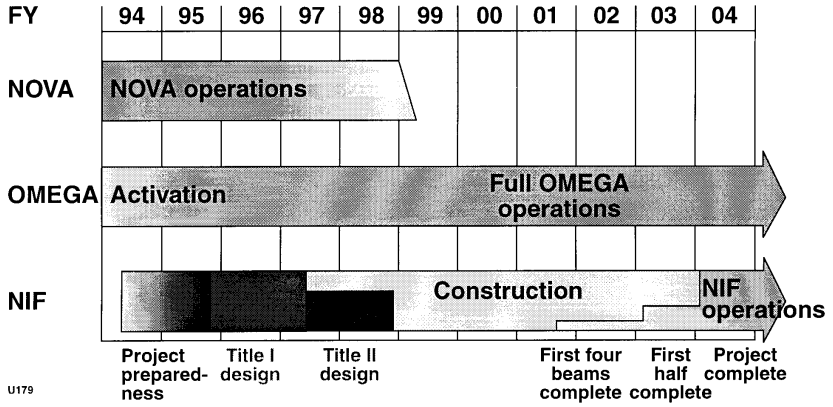


FIGURE 1.—*Schedule for the operation of NOVA, OMEGA, and the NIF*

The figure illustrates how the National program has been structured to provide a full complement of mature experimental facilities from the present to the future. If the NIF adheres to DOE's present schedule, construction of NIF with a shut down of the NOVA laser in fiscal year 1999, leaves OMEGA as the principal facility to

[3] "Science Based Stockpile Stewardship," JASON Report JSR–94–345 (The MITRE Corporation, McLean, VA, November 1994).

continue experimental work during the final phases of NIF construction. Although the LLE program is focused on direct drive, OMEGA is capable of indirect drive (hohlraum) experiments. Beginning with fiscal year 1996, both LANL and LLNL use the indirect-drive capabilities of OMEGA.

The LLE Program for Fiscal Year 1998

The goal of the glass laser direct-drive target physics program is to evaluate the performance of capsules near ignition conditions. In addition to providing data for the NIF, experiments can validate the direct-drive configuration on the NIF that could result in two to three times higher fusion gains (gain > 50) than those available with the baseline (indirect drive) NIF design.

An important element of the direct-drive program on OMEGA is to demonstrate beam smoothing techniques that ultimately will produce on-target irradiation nonuniformity of 1 percent to 2 percent. Polarization rotator plates will be used during fiscal year 1998 to improve the uniformity of irradiation with OMEGA. In fiscal year 1998 advanced diagnostics for hydrodynamically equivalent capsule implosions will be implemented, including a neutron imaging system implemented in collaboration with LLNL. OMEGA will support advanced diagnostics development for NIF. Experiments on planar foil targets are required to measure the Rayleigh-Taylor growth rates under conditions relevant to NIF targets. By comparing the results of these experiments to hydrodynamic code calculations, the reliability of the NIF capsule designs can be validated with a commensurate reduction in the risk.

The development of cryogenic fueling is necessary for the post-NOVA-technical-contract ignition optimization experiments as well as for the hydrodynamically equivalent target experiments to be conducted on OMEGA. In collaboration with LANL and General Atomics, a prototype cryogenic capability is to be completed in fiscal year 1999 for OMEGA. Work in the target development area will continue with the goal of conducting the first cryogenic surrogate target experiments during fiscal year 1997 and fiscal year 1998, with the first fully cryogenic capsule experiments planned for OMEGA in fiscal year 2000. The ICFAC recommended in their final report: "The committee believes that experiments are essential to assessing real target performance and benchmarking code calculations. The first opportunity to do such experiments on cryogenic targets approaching NIF size will be on Omega It is very important that this effort be kept on track with proper priority and not delayed further."[1] Cryogenic capability, advanced diagnostics development, and beam smoothing are all required for the NIF. LLE will be the principal National facility to develop these technologies for the program.

LLE attaches a high priority to providing education and training in the field of ICF and related area, thereby providing a source of personnel and expertise in areas of critical National needs. These include theoretical and experimental plasma physics, laser-matter interaction physics, high-energy-density physics, x-ray and atomic physics, ultrafast optoelectronics, high-power laser development and applications, nonlinear optics, optical materials, and optical fabrication technology. A total of 56 graduate students and 14 faculty members of the University of Rochester are currently involved in the unique research environment provided at LLE and represent many departments within the University, including Mechanical Engineering, the Institute of Optics, Physics and Astronomy, Electrical Engineering, and Chemical Engineering. More than 50 undergraduate students receive research experience annually at LLE. A high-school summer science program exposes ten talented students each year to the research environment and encourages them to consider careers in science and engineering. Many LLE graduates have made important scientific contributions in National laboratories, universities, and industrial research centers.

PREPARED STATEMENT OF DAVID K. WEHE, PROFESSOR, UNIVERSITY OF MICHIGAN

The U.S. Department of Energy (DOE) has provided support to the DOE University Research Program in Robotics during the period fiscal year 1987–fiscal year 1997 to pursue long range research leading to the:

"development and deployment of advanced robotic systems capable of reducing human exposure to hazardous environments, and of performing a broad spectrum of tasks more efficiently and effectively than utilizing humans."

The DOE University Research Program in Robotics (URPR) adds the important element of committed university research to the Robotics Technology Development Program (RTDP) within the DOE EM's Office of Technology Development (OTD).

[1] Inertial Confinement Fusion Advisory Committee Report to Assistant Secretary Reis (February 21, 1996).

The integration of the DOE University Program in Robotics into RTDP, through collaboration with the DOE national laboratories, has strengthened RTDP, and has provided an avenue for the results of university research to find direct applications in problems of vital interest to DOE. The URPR would like to thank the committee members for their historically strong support of this successful program.

Request for the Committee.—We request that the committee allocate $4 million of ER&WM (EM) nondefense research funds to continue the University Research Program in Robotics (URPR) efforts toward the development of safer, less expensive, and more efficient robotic technology for environmental restoration and waste management problems.

Developing Advanced Robotics for DOE

Develop robotic solutions for work in hazardous environments and facilitate cleanup operations.—The goal of this program is to utilize and advance state-of-the-art robotic technology in order to remove humans from potentially hazardous environments and expedite cleanup efforts. Established by DOE in fiscal year 1987, the project has continued to build upon an impressive array of technological innovations which have been incorporated into robotic solutions being employed across federal and commercial sectors. This program has reached an efficient state of technology innovation and is immersed in efficiently educating needed technologists and inventing our country's intelligent mobile machine technology of the next century while meeting today's technology needs for DOE.

Core Values

The URPR's strategic mission is to make significant advances in our nation's robotic and manufacturing technology base in three core areas: education, technology innovation through basic R&D, and DOE mission support.

Robotics: A strategic national technology.—R&D funding is the most effective use of federal funds to promote the nation's well-being according to a recently published poll of academic economists. And, as documented in previous testimonies, key national studies (including those by the Council on Competitiveness, DOD, and the former OTA technology assessment reports) consistently list robotics and advanced manufacturing as one of the five most vital strategic technologies for government support. Further, the national need for an investment in the development of intelligent mobile machines has been universally recognized.

Over the years in which the URPR has been in existence, our nation's rated competitive strength in this technology area has dramatically improved. Through the production of advanced students and technology, the program has enhanced our long-range international industrial competitiveness. This is seen in the commercial products which have evolved from innovations born during this work, the role of the graduates of this project in manufacturing, environmental, and educational programs throughout the country, and the direct applicability of this work to both DOE's EM needs and national manufacturing programs.

This progress, if allowed to continue, will position our country as the dominant leader in this competitive international industry. The long-range implications of intelligent mobile machines which can assist humans to perform life tasks are clearly significant.

URPR: A Paradigm that Works.—For the past few years, the URPR funding has remained constant while its productivity has increased. Funding is normally allocated by the DOE Program Manager based upon the results of a thorough review of technical accomplishments by a committee of national laboratory advisors, and the anticipated DOE technology needs for the next year. The URPR has consistently received the highest ranking for providing outstanding technical contributions and value by national laboratory reviewers and DOE Program Managers. The success of this program is based upon several factors: (i) sustained commitment to this program has enabled the development of a world-class group of technology innovators, (ii) the consistent partitioning of tasks among the university participants has enabled focussed concentrations of expertise to naturally evolve, and (iii) the strong partnerships which have developed between the universities, labs, and industries have allowed innovations to move freely between institutions and yielded complete, demonstrable solutions to technology problems. The URPR has demonstrated that this is a paradigm for success in its three core mission areas: Education, Innovation, and DOE Mission Support.

Educating 21st Century Technologists.—The URPR has educated about 320 advanced degree students in the critical engineering fields, including many with awarded doctoral degrees. These students have now entered the work force, and are contributing to an industrial resurgence based on intelligent machines and advanced manufacturing technology. Graduates from this project have built successful startup

companies and industrial technology transfers in computer vision (MI, TN) and medical imaging (MI), video databases (CA), and intelligent manufacturing (MI, FL, TX). We have seen a consistently strong demand for graduates educated through this project. Society has benefited from students educated in vital technology areas at substantially lower cost than using federally-funded fellowships.

DOE Mission Contribution—Environmental Cleanup.—The motives for undertaking a comprehensive research effort in the application of advanced robotics to EM tasks in hazardous environments reflect both economic considerations and health and safety concerns. As part of RTDP, the URPR is contributing to minimizing risks to human health, enhancing workers safety, reducing secondary waste, and improving the environment. The URPR supports needs-driven applied research to develop innovative and synergistic technologies in support of EM thrust areas.

During fiscal year 1996, the URPR projects successfully supported the:

—deployment and testing of SWAMI, an autonomous inspection robot for Fernald,
—design, construction and testing of a robot which can precisely map large DOE facilities, such as K–25, in preparation for decontamination and decommissioning (D&D),
—delivery of a robotic handling system for an automated chemical and radiological analysis system, and
—dismantlement of the ANL nuclear reactor CP–5 using ROSIE, a large mobile robot with two 7 degree of freedom arms for heavy-duty manipulation, and
—remote radiation mapping of the MSRE facility at ORNL prior to D&D.

During fiscal year 1997, the URPR continues to support the mainline projects of DOE's EM efforts. These successes have led to increased demands on the URPR, including:

—Re-engineering MACS, a DOE mapping robot needing more autonomous capabilities to be useful in the field,
—Remote plutonium processing projects,
—On-site radiation imaging at K–25 and MSRE to characterize radioactive deposits,
—Accelerated development of the Mobile Mapper robot for large-facility mapping tasks.

As shown above, these efforts are directly linked to cleanup operations in the DOE complex. During fiscal year 1998, the URPR plans to continue its focussed efforts on DOE field cleanup applications, while maintaining our commitment to basic research and education.

Innovation—the cornerstone of future technology.—The URPR has produced prodigious levels of innovation in research and development. While current demonstrations reveal next-generation technologies, even more advanced capabilities continue to emerge from the laboratories. These include new types of locomotion, navigation techniques, sensing modalities (radiation cameras and laser imaging devices), environmentally hardened components, and dextrous manipulators. These new machines have an unparalleled man-machine interface and inherent intelligence, with the capability of being able to integrate many diverse sensors simultaneously. These devices will become or inspire the intelligent machines of the future, including smart automobiles and obstacle avoidance aids for the disabled.

This innovation can also be seen in the following statistics:

—Approximately 10 patents awarded. At an international Mobile Robots conference, 30 percent of the papers presented cited the fiducial work being performed by the URPR.
—Over 600 technical papers published in technical journals and conferences.
—The standard technical books for vision, radiation detection and imaging, and mobile robots were authored by researchers working on this project.
—A suite of world-class robots (including CARMEL, a winner of the AAAI Mobile Robot Competition) serve as the research testbeds for this project. Our newest innovation, OmniMate, has been commercialized by HelpMate, Inc. and supplied to DOE for autonomous mapping applications in the DOE complex.

Side Effect: Technology for Corporate America.—In addition to research and education, the URPR contributes to technology transfer. The URPR's research agenda is determined through interactions with the DOE complex. This application-driven research has yielded results, which as a side effect, have lead to advancements in the commercial sector.

The list of URPR technology transfer successes include radiation imaging cameras which can be purchased commercially from RMD, techniques for ultrasonic noise rejection and a multiple degree of freedom vehicle which is marketed by HelpMate Inc. In addition, technology transfer is in process through joint SBIR grants with small businesses (TRC, RMD, Schilling, Bonneville Scientific, REMOTEC), and

through joint research projects (e.g., RedZone Robotics, Inc.). Approximately 50 technology transfers have occurred through this project.

Private industry still lacks the ability to undertake the long-range R&D programs which lead to these commercial successes. Although problem-specific solutions to DOE problems tend to be too narrow for broad commercial interests, the URPR is particularly proud of its unusual success in transferring university-based innovations into viable commercial products, and will continue to pursue this approach whenever appropriate.

Cost Efficient Technology Generation.—National policy has focused on economic growth and world leadership in science and technology. In concert with these thrusts, the URPR efficiently integrates education, research, and technology transfer in a natural and effective way. By integrating DOE needs with research, education, and technology transfer as a continuous project process, a new and cost-effective paradigm for DOE programs is being proven.

Program Request

During fiscal year 1997, the URPR provided vital contributions to education and research while meeting DOE technology needs. The motivation for this project remains steadfast—removing humans from hazardous environments while enhancing safety, reducing costs, and increasing productivity. The URPR's position and mission are unique, and continued Congressional support is necessary to ensure the continuation of this highly successful program.

Request for the Committee.—To continue this vital program, we request that the Committee include the following language into the Fiscal Year 1998 Energy and Water Appropriations Bill:

—The committee allocates $4 million of ER&WM (EM) nondefense research funds to continue the University Research Program in Robotics (URPR) efforts toward the development of safer, less expensive, and more efficient robotic technology for environmental restoration and waste management problems.

PREPARED STATEMENT OF DR. RAYMOND E. BYE, JR., ASSOCIATE VICE PRESIDENT FOR RESEARCH, FLORIDA STATE UNIVERSITY

Mr. Chairman, thank you and the Members of the Subcommittee for this opportunity to present testimony before your Subcommittee. I would like to take a moment to acquaint you with Florida State University. Located in the state capitol of Tallahassee, we have been a university since 1950; prior to that, we had a long and proud history as a seminary, a college, and a women's college. While widely-known for our athletics teams, we have a rapidly-emerging reputation as one of the Nation's top public universities. Having been designated as a Carnagie Research I University several years ago, Florida State University currently exceeds $100 million per year in research expenditures. With no agricultural nor medical school, few institutions can boast of that kind of success. We are strong in both the sciences and the arts. We have high quality students; we rank in the top 25 among U.S. colleges and universities in attracting National Merit Scholars. Our scientists and engineers do excellent research, and they work closely with industry to commercialize those results. Florida State ranks seventh this year among all U.S. universities in royalties collected from its patents and licenses. In short, Florida State University is an exciting and rapidly-changing institution.

Mr. Chairman, one of the most exciting activities at Florida State University is the presence of the National High Magnetic Field Laboratory, located in Tallahassee. This Laboratory is a unique and effective partnership between the State of Florida and the federal government. The Laboratory is a consortium of three entities—the Florida State University, the University of Florida, and Los Alamos National Laboratory (LANL). The majority of funding comes from the National Science Foundation, and that funding and the partnerships involved in the Laboratory combine to make this a truly remarkable world-class facility. With state-of-the-art instrumentation and some of the best minds available anywhere, this facility is providing new capabilities to analyze difficult problems, separate minuscule materials through magnetic applications, and develop new and commercially-viable materials. This NHMFL offers us new tools to do research never done before and do it in ways never possible previously. One such example will be discussed briefly. I did wish to thank and commend this Committee for its support of activities like the NHMFL through its support of LANL, and specifically its 100 tesla project. Your support—and the LANL partnership—is very important to us and to this important effort.

Mr. Chairman, I would now like to take a moment and describe for the Committee an effort that could greatly increase the future effectiveness of environmental res-

toration activities as undertaken by the U.S. Army Corps of Engineers (USACE). As you know, wetlands serve several important functions including the provision of support and habitat for a wide range of flora and fauna, as well as influencing the flow and quality of water. Starting in 1998, the USACE will begin the restoration of the Kissimmee River and its wetland floodplain by backfilling the canal, dug for flood control, and to improve navigability, with previously excavated dike material. This is the first large-scale wetlands restoration project to be undertaken by the USACE. It is anticipated that similar restoration projects, associated with the ongoing efforts to return much of the South Florida ecosystem—including the Everglades—to a semblance of its original character, will soon follow. The lessons learned from this Kissimmee River restoration project can serve to better restorations in the future.

Specifically, a study led by scientists at Florida State University, with colleagues from Florida A&M University assisting in the work. In addition, the scientists from South Florida Water Management District are involved with the study as well. Feasibility studies on the restoration project have been completed and have focused on the physical restoration of the hydrological conditions, and on the response of the ecosystem to these physical changes. Unfortunately, chemical and biological effects associated with the initial physical disturbance of the restoration, or the "first flush" effect, have not been adequately studied. These initial chemical and biological effects are not only important in the short term, but also have a profound influence on the long-term biological direction that the restored ecosystem follows. Understanding and controlling these early processes are thus critical in designing restoration projects which are most efficient in returning wetlands to their original, ecosystem status.

The present Kissimmee River restoration scenario is a "decanalization" and return to the original hydrological conditions starting at the downstream end and gradually progressing upstream over a 10–15 year period. Thus, in the context of the present restoration plan, the first areas addressed receive the "first flush" of each additional restored segment for the entire duration of the restoration project. One of the effects of this approach is increased turbidity and release of nutrients, organic carbon, and trace metals which will lead to profound changes in the fauna and flora downstream of the restoration segment. It is known that these south Florida waters are highly-enriched with mercury. One key aspect of our study will be to focus on measures for such environmental factors.

This study will focus on this "first flush" phenomenon. The changes in composition of dissolved organic matter and the concentration of metals mobilized due to the restoration will be examined, along with the effects of nutrient-loading on the ecosystem. By studying the cycling of nutrients and organic matter by microbial processes we will be able to develop early indicators of ecosystem change. A better understanding of the "first flush" phenomenon and the development of early indicators of ecosystem health, will provide the information required to make more informed, effective, and efficient decisions regarding future restoration procedures and thus minimization of total costs associated with future restorations.

Never before has the determination of early indicators of ecosystem health been attempted, largely because many of the necessary analytical techniques have not previously been available. These new techniques are now available at the National High Magnetic Field Laboratory, located in Tallahassee, Florida. The availability of a variety of state-of-the-art analytical tools, now in place at the NHMFL, provides the ability to access these analytical procedures at a single facility for the first time. The Kissimmee River restoration project provides an ideal venue in which to develop efficient and effective approaches to wetlands restoration as never before.

Funding for some portions of this research are being sought through support from the U.S. Environmental Protection Agency. The portion of the work related to the analysis of the restoration approach by the USACE is $1.5 million over three years. This would be an extremely cost-effective investment in light of what could be learned and applied to future wetland restoration projects to be undertaken by the Corps in the future. The ability to separate and analyze many of the organic and inorganic components in the ecosystem while learning more about their impact on the restoration will be a potential cost-source in future restorations.

Finally, a series of other environmentally-related projects are being done with Florida State University scientists from our Oceanography Department working closely with Florida A&M University's Institute for Environmental Studies on a number of additional collaborative projects. Several of these are being proposed for funding under the Department of Energy's program of partnering with Historically Black Colleges and Universities (HBCU) for research activities. As there are several of these collaborative efforts being proposed, I will not itemize them here. I would simply add that this collaboration between FSU and FAMU is a highly productive

one, particularly in this environmental area. We commend the Department for this program, and we express our appreciation to this committee for it support of these efforts.

Mr. Chairman, in summary, the major environmental assessment project on the Kissimmee River that would have us working closely with the U.S. Army Corps of Engineers is an extremely important and cost-effective activity. It will also be a good investment for better understanding of this complex restoration phenomenon and for future restoration cost savings to the federal taxpayer. We ask for this Committee's support of this novel effort that would use new tools that would provide information for the Corp to make better decisions in the future. I appreciate the opportunity to present these activities to your Committee. Thank you.

PREPARED STATEMENT OF MICHAEL A. WAYNE, CHAIRMAN AND DONALD L. MORTON, M.D., PRESIDENT, JOHN WAYNE CANCER INSTITUTE, SAINT JOHN'S HOSPITAL AND HEALTH CENTER, SANTA MONICA, CA

Mr. Chairman, Senator Reid, and members of the subcommittee, thank you for this invaluable opportunity to submit testimony on behalf of the John Wayne Cancer Institute at Saint John's Hospital and Health Center in Santa Monica, California, regarding our support for the federal government's activities related to nuclear medicine. I am grateful for the opportunity to convey to the subcommittee, through our work in this area, how these activities have translated into major breakthroughs in the diagnosis and treatment of cancer patients. It is our hope that this testimony will encourage increased federal participation at a critical juncture in the development of nuclear medicine in the fight against cancer.

Many of the important innovations in medicine today have been guided by improvements in imaging cancers at various stages of the disease process with the support of the Department of Energy (DOE). From a small research enterprise funded by DOE, nuclear medicine has grown into a multibillion dollar health industry and holds greater than ever promise in the diagnosis and treatment of cancer. Molecular biology has greatly enhanced utilization of nuclear medicine imaging and will ultimately result in radioisotope therapy. At John Wayne Cancer Institute (JWCI) we have worked extensively in these areas with astonishing results. Developments in immunology and molecular biology are allowing us to target radioisotopes to sites of disease in order to diagnose and treat cancers not possible by conventional methods.

For example, our extensive work in immunological research has made us the largest immunotherapy program in the world with projects aimed at the development of a melanoma vaccine, anti-melanoma human monoclonal antibodies and combining chemotherapy and molecular biotherapy (chemobiotherapy). JWCI has the only human monoclonal antibody program which has induced complete clinical remissions in melanoma patients. We are currently nearing the final phase of the development and trial of an irradiated melanoma vaccine. The results have been extremely encouraging—prolonging survival rates by approximately three fold.

At JWCI, more research in immunotherapy has been directed toward melanoma than any other cancer because melanoma is one of the most immunogenic tumors. Thus, melanoma is the ideal model system for the development of immunotherapy and the lessons learned may be applied to novel therapeutic approaches in other tumors, such as breast, colon and prostate cancer. JWCI is currently the largest melanoma center in the U.S. and the second largest in the world. The melanoma vaccine program is the largest immunotherapy program in the world with over 850 patients participating in a number of Phase II clinical protocols. These patients come to JWCI from 32 foreign countries, all 50 states and the District of Columbia. Thus, we are a national and international resource that serves the nation and the world. Not only do patients directly benefit from treatment received at JWCI but also cancer patients everywhere benefit from the new technology developed here that is shared with the world.

The JWCI developed the sentinel node technique, which uses a blue dye to detect cancer in the first lymph node to receive metastasis from the tumor. If the "blue node" does not contain tumor, patients avoid a major operation and complications resulting from removing all the lymph nodes. This technique was first applied to melanoma patients and now has been translated to patients with breast, colon, and thyroid cancer. This procedure has been greatly enhanced by injecting radioisotopes around the tumor and using a geiger counter in the operating room to find the "blue node." The precise detection provided by our physicians in nuclear medicine has greatly impacted the surgical treatment of lymph nodes in cancer patients.

Our efforts in nuclear medicine are exceptional because our major strength is translational research—the process of taking important discoveries from the laboratory, refining and developing them to apply in the clinic. Translational research has the tremendous potential to immediately impact diagnosis and treatment of cancer patients. In all fields but cancer, pre-clinical and clinical drug development is undertaken by the pharmaceutical industry. Although cancer as a whole is very common, there are so many different types and manifestations that the market size for individual new therapies is often commercially unattractive. Drug development is therefore high risk and only viable for pharmaceutical companies if the payoff is high. Consequently, new drug therapies with tremendous potential in treating cancer are at risk of never being fully developed. Novel cancer drugs can be made commercially attractive if the risk in development is correspondingly lowered.

This is an area in which JWCI plays a major role—testing new therapies up to the stage where it can be regarded as commercially attractive. This is very costly; a typical course of monoclonal antibody costs $35,000. Despite the costs to JWCI, our success in these areas have lead to our clinical melanoma vaccine program being the largest in the world with experience extending back 20 years and culminating in the largest tissue and serum bank for melanoma and a corresponding database of patient information. As a result of developing new therapies at the JWCI, patients throughout the United States and in many foreign countries are now benefiting from this effort. Further, our on-site dedicated facility is designed to meet federal standards for biologics manufacturing and a team skilled in FDA's code of manufacturing regulations.

John Wayne Cancer Institute welcomes an opportunity to form a partnership with the Department of Energy to foster the development of radiopharmaceuticals and nuclear diagnostic imaging and therapeutic products for the detection and treatment of cancer. We are currently evaluating the kinetics of radiopharmaceuticals, imaged by innovative modalities (i.e., PET-Scan-positron emission tomography) in the nuclear medicine suite, to determine their ability to precisely localize and detect tumor in melanoma, breast, colon and prostate cancer patients. JWCI has established the role and is further developing pre-operative lymphoscintigraphy (LS) to identify potential sites of metastasis of tumor. We have one of the largest patient accruals in the United States for detecting tumor by the PET-Scan. We are also developing innovative techniques by using radiopharmaceuticals in the operating room to enhance removal of tumor from cancer patients that are not detectable by conventional methods. The ability to localize radiopharmaceuticals not only improves the detection of cancer, but also impacts treatment by the surgical removal and the delivery of innovative treatments targeted against these cancer cells.

As part of the Saint John's Hospital and Health Center, JWCI has been an important component of the health care system in the Los Angeles area and is the largest employer in Santa Monica. The research and clinical reputation of the Institute, however, reaches far beyond our region. The Institute currently attracts patients from all 50 states and over 32 foreign countries. JWCI is the headquarters of a National Cancer Institute sponsored "Multicenter Selective Lymphadectomy Trial" (MSLT) on the use of the "blue node" technique in melanoma. Participants in this trial include prestigious cancer centers across the country and around the world.

Our reach and effectiveness has remained outstanding despite the devastation of Saint John's Hospital in the 1994 Northridge earthquake. Saint John's is currently rebuilding, with assistance from FEMA, a state-of-the-art health care complex. Saint John's has been fundraising non-stop to match the FEMA funds to accomplish this. During this period, JWCI has continued to have a dramatic impact on cancer care and treatment both regionally and nationally but we are now at a critical juncture. Now, at a very important stage of JWCI nuclear medicine research we have not been able to draw as extensively upon the resources of Saint John's Hospital and Health Center. At the same time, the demand for treatment continues to increase exponentially. In order to meet this demand, we have been put into the position of losing momentum in the discovery of cures for cancer. Maintaining health care services for our community is paramount; but our research capabilities have even greater national reach and long-term value. Our reputation has allowed us to do our own extensive fundraising, achieving a 41.2 percent increase in donations over last year, but additional assistance is imperative.

We feel strongly that the Department of Energy's medical applications program must be enhanced to maintain nuclear medicine's capabilities in this exciting era of oncology breakthroughs. John Wayne Cancer Institute, in partnership with DOE, would be able to provide a unique opportunity, through translational research, for the advanced development of radiopharmaceuticals, nuclear diagnostic imaging technologies, and therapeutic products for the detection and treatment of cancer. A federal partnership investment of $10 million to support laboratory construction and

renovation needs associated with the expansion of laboratory space and in-patient and out-patient treatment facilities, and program and equipment needs for nuclear medicine programs, would result in a substantial acceleration of the most uniquely comprehensive oncology programs in the country utilizing nuclear medicine. Economically speaking, the combined efforts of JWCI and the DOE can lead to commercialization of radiopharmaceuticals, innovative diagnosis and cures for cancer through nuclear medicine and serve as a prime example of the fostering of industry growth and medical breakthroughs from federally funded research and development.

Thank you.

PREPARED STATEMENT OF JOE L. MAUDERLY, SENIOR SCIENTIST AND DIRECTOR OF EXTERNAL AFFAIRS, THE LOVELACE RESPIRATORY RESEARCH INSTITUTE

It is proposed that the U.S. Department of Energy play a participatory role in an interagency effort to establish and maintain a National Environmental Respiratory Center for the purpose of integrating research and information transfer concerning health risks of breathing airborne contaminants in the environment. The Department's support of the Center's research is requested, along with support from other Agencies, to fulfill its mandate for incorporating concerns for health risks from energy technologies in the development of national energy strategy.

THE ENVIRONMENTAL RESPIRATORY HEALTH DILEMMA

U.S. Health Burden of Respiratory Disease

The magnitude of the national health burden caused by respiratory diseases is not widely appreciated. These diseases now kill one out of four Americans. Among cancers, the second leading cause of death, lung cancer is the single largest killer. Nearly 195 thousand new cases of respiratory tract cancer will be diagnosed this year, and 166 thousand Americans will die from these cancers. Lung cancer kills more than twice as many women as breast cancer, and more than twice as many men as prostate cancer. Pneumonia and heart-lung failure are the terminal conditions for many of our elderly. Excluding cancer, chronic respiratory diseases and pneumonia are the third leading cause of death in the U.S., killing over 188 thousand Americans in 1995. Asthma, growing unaccountably in recent decades, now afflicts 15 million Americans, including 5 million children. The incidence of asthma increased 61 percent between 1982 and 1994, and asthma deaths among children nearly doubled between 1980 and 1993. Viral respiratory infections are the most common cause of hospitalization of infants and cause a tremendous loss of productivity in the adult workforce. Occupational lung disease is the number one work-related illness in the U.S. in terms of frequency, severity, and degree of "preventability". Worldwide, three times more people die from tuberculosis than from AIDS.

Critical Uncertainties Regarding Contributions of Airborne Environmental Contaminants

Pollutants inhaled in the environment, workplace, and home are known to aggravate asthma and contribute to respiratory illness, but the extent of their role in causing respiratory disease is not clear. It is known that it is possible for airborne irritants, toxins, allergens, carcinogens, and infectious agents to cause cancer, degenerative disease, and infections directly, or indirectly through reduction of normal defenses, but the portion of such diseases caused by, or strongly influenced by, pollution is uncertain.

We are repeatedly faced with estimating the health effects of environmental air pollution on the basis of very limited information and in the presence of large uncertainty. For example, environmental radon gas is estimated to be the second leading cause of lung cancer (after smoking), but this estimate comes from our experience with uranium mining, in which the exposure conditions and exposed population were quite different from those in the general environment. As another current example, it is estimated that as many as 40 thousand Americans may die annually from breathing particulate environmental air pollution, but this estimate comes from epidemiological data that do not provide a clear understanding of individuals who were affected, the nature and magnitude of their exposure, the biological processes by which death might have occurred, or the extent to which the effects of particles were independent of other pollutants.

It is difficult to associate health effects with specific pollutant sources. Most environmental air contaminants have multiple sources which produce species of overlapping, but slightly different physical-chemical types. There are few biological markers of exposure which can be used to link health effects to past exposures to pollutant classes, much less to specific pollutants and sources. This makes it very difficult to

associate specific pollutant species with specific health effects, identify and prioritize the sources whose management would most efficiently reduce the effects, and compare potential health gains to the financial, technological, and lifestyle commitments required to achieve them.

We presently have little scientific or regulatory ability to deal with pollutant mixtures. It is recognized that all exposures to air pollutants involve inhalation of complex mixtures of materials, but there is very little research on the health effects of mixtures, or the significance of interactions among combined or sequential exposures to multiple pollutants. Air quality regulations address individual contaminants, or contaminant classes, one at a time. We know that multiple pollutants can cause common effects, such as inflammation. We know that some pollutants can amplify the effects of others. We can presume that a mixture of pollutants, each within its acceptable concentration, could present an unacceptable aggregate health risk. We face the possibility that a pollutant occurring in a mixture might wrongly be assigned sole responsibility for a health effect that, in fact, results from the mixture or an unrecognized copollutant that varies in concert with the accused species. The mixture issue will become increasingly important as pollutant levels are pushed ever lower, and needs coordinated, interdisciplinary attention.

As air pollutant levels are reduced, the problems of correctly linking health effects to the correct species and sources, and of making difficult cost-benefit judgments, will increase. The levels of many environmental air contaminants have decreased due to technological developments and regulatory pressures. For example, between 1985 and 1995, concentrations of airborne lead, sulfur dioxide, and carbon monoxide in the U.S. decreased 32 percent, 18 percent, and 16 percent, respectively, and levels of airborne particulate maker decreased 22 percent between 1988 and 1995. Levels of ozone and other pollutants have also decreased. As background levels are approached, decisions regarding: (a) the benefits of further reductions in man-made pollution; (b) the need to consider pollutants as a mixture rather than as individual species; and (c) the point at which small biological changes represent health effects warranting control, will become more difficult and will require more focused, coordinated research.

We are repeatedly faced with estimating effects in particularly sensitive or susceptible subpopulations. For example, the proposed new National Ambient Air Quality Standards for ozone and particulate matter are driven largely by effects thought to occur in exercising asthmatics and elderly people with heart-lung disease, respectively. It is seldom appropriate to conduct studies in which adverse effects are intentionally elicited in the most sensitive people. Until recently, there has been little emphasis on developing laboratory animal models of human heart-lung conditions thought to render people susceptible to pollutants. More emphasis needs to be given to developing and validating these research tools, and to coordinating such efforts across agencies and research disciplines.

DOE and other agencies repeatedly faces uncertainties regarding the relevance of laboratory results to human health risks. As one of several examples, uncertainties about the relevance of the lung tumor response of rats to inhaled particles to human lung cancer risk has complicated hazard identification and risk assessment activities. Much of our understanding of the toxicity of inhaled airborne materials comes from studies using animals and cells to identify toxic agents, understand biological responses, and determine relationships between dose and effect. Such studies produce detailed information on the response of animals or cells, but there is too little emphasis on ensuring that the responses are similar to those that occur in humans. Development of information having little relevance to humans wastes resources. The validation of responses of animals and cells used to provide the scientific basis for national energy and environmental policies needs to be given greater emphasis and coordination.

Lack of Interagency and Interdisciplinary Coordination

DOE does not have the mandate or resources to resolve all of these interrelated issues alone; the resources of other agencies and non-federal sponsors are critical. Current efforts are funded by DOE and other agencies, including EPA, CDC/NIOSH, FDA, DOD, NIH (NHLBI, NIEHS, NCI, NIAID, NIDA), and by health advocacy organizations, industry, labor, and private foundations. Existing coordinating activities within and among these groups do not provide sufficient integration and synergism. Progress will require a wide range of laboratory researchers, atmospheric scientists, epidemiologists, and clinical researchers. Focusing and resolving the issues will require interactions among researchers, health care professionals, and policy makers in an iterative manner that fosters rapid information transfer and development of joint investigative strategies. There is no mechanism for national coordination of this interagency and interdisciplinary effort. As a result, some efforts are du-

plicated and some important issues are being inadequately addressed. The lack of a national center for focusing and facilitating this effort will increasingly create inefficiencies and impede progress.

There is no national center for collecting and disseminating information on the health impacts of airborne environmental contaminants. Researchers, federal agencies, congress, industry, and the public do not have a centralized source of information on ongoing research or recent findings.

There is no designated national interagency user facility with the specialized facilities, equipment, core support, and professional collaboration required for many types of investigations to study the complex airborne materials and health responses of concern. DOE provides specialized user facilities, and Investigators seek access to these other laboratories on an individual basis, but there is no coordinated national effort to facilitate the work of investigators in universities, federal laboratories, and industry by identifying and providing shared resources or standardized samples.

DOE and other agencies have intra-agency research centers and administrative structures that serve internal programmatic coordination needs, but these efforts rarely extend across agency lines. DOE funds laboratories and universities, and other agencies also fund extramural centers to study, or facilitate the study, of specific issues related to environmental respiratory health. For example, EPA's Mickey Leland National Urban Air Toxics Research Center funds research and information transfer on the class of compounds designated in the Clean Air Act as "air toxics". The Leland Center serves a useful coordinating and research sponsorship function for air toxics, but does not have the facility or scientific resources to meet the broader needs described above. NIEHS center grants at universities provide core support and coordinating functions for thematic collections of projects on occupational and environmental health, but again, are not suited to meeting the broader needs.

The lack of a national coordinating center is notable, considering its small cost compared to the loss of productivity, the reduction in quality of life, and the loss of life caused by respiratory diseases and considering the importance now ascribed to the role of environmental factors in respiratory disease.

THE NATIONAL ENVIRONMENTAL RESPIRATORY CENTER (NERC)

Location and Staffing

The Lovelace Respiratory Research Institute (LRRI) proposes to establish a national center to meet the coordinating, user facility, and information needs described above. The physical location of the NERC will be the government-owned Inhalation Toxicology Research Institute facility on Kirtland AFB in Albuquerque, NM. This facility is already developed at taxpayer expense, having been established by the DOE to conduct research on long-term health risks from inhaled radioactive particles. Having fulfilled that mission, the facility was recently released from DOE laboratory status, and is now leased by LRRI to conduct respiratory health research for federal agencies, industry, and private sponsors. This 270,000 square foot, world-class facility contains $50 million in government-owned equipment, and has unmatched potential as a national user facility. The facility is well-equipped and staffed for intramural and collaborative research on airborne materials of all types, including reproducing pollutant atmospheres, conducting inhalation exposures of animals, determining the dosimetry of inhaled materials, and evaluating health effects ranging from subtle genetic and biochemical changes to clinical expression of disease.

The interests and expertise of LRRI are well-matched to the proposed activities of the Center. While managing the facility for DOE, LRRI contributed heavily to our present understanding of the respiratory health impacts of airborne pollutants. LRRI has contributed heavily to the research cited as scientific basis for air quality regulations and worker protection standards. The group is well-known for its efforts to understand airborne materials, link basic cellular and tissue responses to the development of disease, validate the human relevance of laboratory findings, and coordinate complex interdisciplinary studies. The LRRI group has conducted the world's most extensive research program on the effects of combined and sequential exposures to multiple toxicants. The group is well-known for its participation in DOE, NCRP, ICRP and other advisory roles, and for coordinating multidisciplinary and interinstitutional efforts.

LRRI envisions a "virtual center" that will also encompass nearby institutions and an expanding group of collaborating investigators nationwide. Academic affiliation with the University of New Mexico, primarily through its Health Sciences Center will extend research and training capabilities. Other local technology and collaborative resources include Sandia and Los Alamos National Laboratories, the National

Center for Genome Resources, and the growing New Mexico biotechnology and clinical research communities. The NERC would interact closely with the Leland Center and with intramural research centers within EPA and other agencies.

Principal Functions

Provide information resources.—The Center will provide centralized information resources to researchers, DOE and other agencies, Congress, industry, and the public. Literature searches, topical summaries, and answers to specific inquiries will be provided via the internet, electronic mail, and telephone. Emphasis will be given to providing access to relevant information nationwide through a single point of contact and assistance.

Facilitate interagency and interinstitutional coordination.—The Center will coordinate meetings, workshops, information transfer, and other activities aimed at integrating and prioritizing national research efforts and integrating results into useful summaries.

Provide user facilities and facilitate access to research resources.—The Center will disseminate information on the availability of specialized facilities, equipment, collaborative resources, and samples at the Center and elsewhere, and will facilitate the use of these resources by researchers in other institutions.

Provide training.—The Center will provide graduate training through the Toxicology, Biomedical, and Public Health programs at the University of New Mexico, and by hosting thesis research from other universities. Postdoctoral and sabbatical appointments will also be provided. Workshops and training courses will be conducted.

Conduct and sponsor research.—While it is envisioned that limited intramural research will be conducted with Center funding, intramural research will be principally funded by direct sponsorship of Agencies, industry, and the public through grants, contracts, and donations. Through the Center, extramural research aimed at critical information gaps not addressed by other sponsors will be funded.

FUNDING OF THE NATIONAL ENVIRONMENTAL RESPIRATORY CENTER

LRRI seeks authorization and subsequent appropriations through a lead agency for core funding, with Complementary sponsorship through grants and contracts from DOE and other agencies for research aligned with individual agency mandates and strategic goals.

An initial appropriation of $2 million per year for 5 years, beginning in fiscal year 1998, will establish the Center and its core information, educational, and administrative functions. This amount will provide for critical computing and communication infrastructure, and limited facility renovations and equipment acquisitions. This amount will provide very little intramural or extramural research support; additional support for these purposes will be sought in coordination with the lead sponsoring agency as the Center is established. The goal is to develop research support principally through sponsored programs, and to use the core Center support principally to provide coordinating and information services and sponsor limited collaborative research.

Support is sought from DOE through funding of related, independent research programs having special relevance to DOE's mission, and through such participatory support of the Center's core functions as established on an interagency basis.

PREPARED STATEMENT OF THE INTEGRATED PETROLEUM ENVIRONMENTAL CONSORTIUM

It is proposed that the Department of Energy establish and support a focused, university-based program, the Integrated Petroleum Environmental Consortium (IPEC), with the goal of increasing the competitiveness of the domestic petroleum industry through a reduction in the cost of compliance with U.S. environmental regulations. Federal support is specifically requested as part of the fiscal year 1998 appropriation for the Department of Energy through the BER account or other source the Subcommittee may determine to be appropriate.

THE CRISIS IN THE U.S. DOMESTIC PETROLEUM INDUSTRY

The availability of energy will be the single most important factor in determining quality of life in the United States over the next century. Jobs, manufacturing output, transportation, and personal comfort are all tied to a plentiful, affordable energy supply. The petroleum industry has played a major role in meeting energy needs in this century. Petroleum will continue to be a major factor in the energy needs of the world well into the next century. However, the declining price of crude

oil and the increasing cost of compliance with environmental regulations have combined to produce a decrease in domestic oil production in the U.S. The major oil companies have scaled down their domestic operations and refocused their exploration and production activities on foreign resources. The 8,000 independent producers are faced with two options—producing from the domestic resource base or going out of business. At the same time, the independents are increasingly the inheritors of mature fields and reservoirs left behind by the majors. Yet compared to the major producer the independent is the most vulnerable to the declining price of oil and gas, the costs of environmental compliance and unfavorable tax policies. The independent producer has only one source of revenue—the sale of oil and gas. There is no vertical depth to his business. These factors have combined to not only greatly reduce the number of new wells drilled but also to accelerate the plugging of marginal or stripper wells. In the U.S. a stripper well is plugged every 30 minutes. At the same time new well completions are at a 45-year low.

Clearly this trend is not in the best interest of the U.S. in terms of energy self-sufficiency or national security. We are turning over control of our cost of production in terms of energy costs to foreign interests. If domestic exploration and production and refining are to continue to play a strategic role in meeting U.S. energy needs, the domestic petroleum producer will require access to low cost technology for waste minimization and environmental remediation in exploration and production (E&P), refining, transportation and end use of petroleum.

In many cases this technology does not now exist in a cost-effective form. Conventional waste treatment and pollution control technologies always add to E&P, refining and transportation costs. These costs are increasingly out of proportion with the economic output of the petroleum industry. In 1991, four industry sectors (chemicals, petroleum, pulp and paper, and primary metals) incurred three-fourths of the $21 billion spent by U.S. manufacturers to comply with pollution control regulations. However, these sectors accounted for about one-fifth of U.S. manufacturers' value added (Office of Technology Assessment). In 1992, the domestic petroleum industry spent $10.5 billion on the environment. This is more than the top 300 oil and gas companies earned in profits that year and more than the industry spent searching for oil and gas in the U.S. in 1992. With oil at $16 per barrel at the wellhead, the industry spent $4 on environmental protection for every domestically produced barrel of oil—$41 for every man, woman and child in America ("Oil and Gas Journal" and the American Petroleum Institute).

All U.S. industry is caught in the conflict between national economic and environmental goals. Pollution control in the petroleum industry presents regulatory hurdles for U.S. domestic production and refining that producers and refiners in many other countries do not face. This places U.S. producers and refiners at a global competitive disadvantage. The U.S. petroleum industry needs cleaner, more cost-effective technologies and new approaches to lower the costs of complying with pollution and waste disposal regulations that U.S. society demands. A reduction in environmental compliance costs will have the greatest impact on the national economy when applied at this level—the level of the extraction industries. Lower energy costs make all industry more competitive. The petroleum industry and the nation would benefit not only from lower compliance costs, but also from the jobs and commerce preserved in the domestic petroleum industry and the related trade in capital equipment and professional services in industries that service the petroleum industry. New technologies for pollution control and remediation will also be an exportable product.

THE INTEGRATED PETROLEUM ENVIRONMENTAL CONSORTIUM (IPEC)

For strategic and economic reasons the U.S. domestic petroleum industry must be able to compete with foreign producers and refiners. A major sector of our economy and our national interests are clearly at stake. Compliance with environmental regulations is a major factor in that competitiveness. The strategic and economic importance of this industry requires that industry, government and academia combine their resources and coordinate their efforts toward finding solutions for the environmental problems that represent the greatest challenge to the competitiveness of the domestic petroleum industry. The success of this effort will not only stimulate jobs in this industry sector, but also contribute in a large way to the environmental health of the nation. In response to this need, the four major research universities in the oil-producing states of Oklahoma and Arkansas have joined together to form the Integrated Petroleum Environmental Consortium (IPEC). The mission of IPEC is to increase the competitiveness of the domestic petroleum industry through a reduction in the costs of compliance to U.S. environmental regulations. Objectives specific to meeting the goals of the consortium include the following:

1. Development of cost-effective technologies and business practices to meet the challenges of environmental regulations to the competitiveness of the domestic petroleum industry.

As already noted, new technologies are needed in the petroleum industry now to provide cost-effective solutions to environmental problems in exploration and production and refining. The U.S. petroleum industry is already undertaking this challenge; however, the industry needs help. The domestic petroleum industry is devoting ever more of its resources toward meeting a growing body of environmental regulations as the price of oil declines. The inevitable result has been severe reductions in work force and closings. The domestic petroleum industry has lost over 500,000 jobs in the last decade. It is time for the federal government to reevaluate the regulatory burden on the domestic petroleum industry and to help the industry develop the cost-effective technologies it needs to meet meaningful environmental standards. With a dwindling technical work force caused both by redirecting E&P operations and layoffs, the domestically-oriented work force is increasingly focused on environmental compliance, not technology 1development. Indeed laboratories which were once on the forefront of technology development are now empty and dormant. What is left of the once busy industry research centers are technical service centers. The former research leaders still employed are now "putting out fires" and the independent producers rarely have a technical staff for any kind of R&D. The U.S. petroleum industry is relying more and more on technical professionals in academia for research. However, budgets are tight and only the most immediate of problems are being addressed. Even a 3–5 year time frame is often farther out than the industry can afford to look.

The federal government should direct a larger segment of R&D resources to the development of new, cost-effective environmental technologies to support the domestic petroleum industry. A critical segment of this effort should be support of university research. A major part of this research funding should place emphasis providing near-term solutions to these problems with direct input from the petroleum industry. In partnership with industry, IPEC can help provide these solutions.

The petroleum industry will measure the relevancy of research in terms of the tangible results produced. In the context of the vision of IPEC this means new, cost-effective technology made available to industry. The greatest impact on competitiveness on the domestic petroleum industry will be made by improved solutions to problems which have a significant economic impact on the industry. The research conducted within IPEC will, therefore, by necessity have a strong applied element.

IPEC will use an integrated team approach to technology development. The teams will not only be integrated with respect to scientific or engineering discipline but also integrated with respect to the technology development process itself. In other words the teams will also consist of members whose expertise is in scale-up and commercialization of new technology. If the work product of the team is to make a significant impact in the domestic petroleum industry the most important member of the team will be the end user of the technology. A teaming of investigators from different disciplines and representing different levels of the technology development process will greatly facilitate communication among the investigators and keep the team focused on solving the problem. The team approach is certainly the shortest path to making a meaningful impact on the competitiveness of the domestic petroleum industry.

This team and systems approach to solving real problems in the domestic petroleum industry will be the hallmark of IPEC. Fundamental research will be coupled with bench-scale testing of concepts, pilot testing, field demonstrations and technology transfer. The end user of the technology will always be heavily involved in technology development as an advisor and hands-on participant. As an investment in future technology development, undergraduate and graduate students will be integrated into every aspect of the work of the consortium. Undergraduate students will gain valuable experience working on consortium projects while graduate students will use consortium research work for their theses and dissertation. The integrated approach to technology development will give these students much needed pilot and field experience and industrial contacts.

Competitive business prices are perhaps equal in importance to technology development, especially to the independent producer. The development of new business practices with respect to accounting, taxation, finance, forecasting, etc. are needed which can put the producer in a better position to determine the financial risks of potential environmental costs and manage those risks in order to maximize printability. Reduced financial risk and growth create jobs.

2. Training of environmental professionals as an investment in technology, policy and business development.

IPEC universities will continue to graduate scientists and engineers who have a strong foundation in a basic engineering discipline, physical science, or biological science with additional training in environmental technologies at the undergraduate or graduate level to produce environmental specialists. Environmental issues cut across many disciplines. Therefore, this additional training is cross disciplinary to give students a broad understanding of environmental problems. This includes environmental law and policy and the financial and economic impact of environmental regulation on the domestic petroleum industry.

Environmental policy curricula at IPEC universities will be enhanced to include a prerequisite foundation in a field of engineering or science. Those who shape environmental policy should fully understand the impact of those policies. IPEC universities also will develop new curricula to explore the boundary between environment and business in terms of accounting practices, economics, finance and taxation. A new kind of environmental specialist, invaluable to the petroleum industry, can arise out of the area where issues of environment and business converge.

In addition to training the environmental specialist, IPEC universities are committed to making all of their graduates environmentally aware. This is especially true of graduates in technical fields whose employment activities can have a dim environmental impact. These curricula will be enriched with an environmental component integrated into their course of study. The result of this enrichment will be a scientist or engineer who considers the environmental impact of a project up front and minimizes wastes.

3. Dissemination of information regarding technology development, legal and regulatory issues, and business practices which can impact the competitiveness of the domestic petroleum industry.

Research results from all IPEC technology and business practice development projects will be documented through standard DOE reporting procedures. IPEC investigators also will deliver papers and contribute journal articles on noteworthy achievements. All resulting citations can then be picked up and disseminated through such standard online databases as DOE's "Energy Science and Technology," the American Petroleum Institute's "APILlT," and TU's "Petroleum Abstracts."

IPEC also will provide a repository for all reports, papers, and articles resulting from its research projects. These documents will be available on demand from the repository for the fulfillment of external orders. Where appropriate, IPEC research results also will be compiled into databases for nationwide access via Internet. Information concerning the databases will be distributed to the domestic petroleum industry and other interested users through exhibits at selected conferences, the trade literature, target mailings and Internet Listserv messaging. Every effort will be made to guarantee equity of access throughout the petroleum industry. IPEC also will establish a feedback mechanism through which the major and independent oil and gas producers can inform the R&D community of their experiences with new technologies as well as their technology needs.

IPEC also will serve as a resource for Congress, federal and state regulatory agencies and the domestic petroleum industry to provide an objective assessment of existing or proposed environmental regulations on the basis of cost/benefit and rise analysis.

Lastly, there also is an acute need for readily accessible continuing education opportunities for scientists, engineering, legal professionals, accountants, economists, etc. in the petroleum industry to provide environmental retooling and continual updating. The environmental field is progressing rapidly. Activities such as focused environmental seminars, workshops, short courses, telecourses, etc. can sharpen the skills of participants and act as conduits for new ideas and technologies into the petroleum industry.

ORGANIZATION AND OPERATING PRACTICES OF IPEC

The Integrated Petroleum Environmental Consortium (IPEC) is a consortium of four universities in Oklahoma and Arkansas: The University of Tulsa (TU), The University of Oklahoma (OU), Oklahoma State University (OSU), and the University of Arkansas (UA) at Fayetteville. The fiscal center of IPEC will be the University of Tulsa which is the sole subcontractor to BDM-Oklahoma which is the M&O contractor for the Bartlesville, OK Department of Energy facility, the National Institute for Petroleum and Energy Research (NIPER). Through NIPER, BDM Oklahoma and TU are responsible for implementation of the National Oil Program for the DOE. IPEC will be an extension of this effort.

The operational activities of IPEC will be directed by an executive committee composed of two faculty members and one research administrator from each of the four universities (TU, OU, OSU, UA). The chair of the executive committee will rotate annually among TU, OU, OSU and UA. IPEC will be very much industry driven to ensure that the consortium is meeting the needs of the industry and fulfilling its mission. The executive committee will be advised by an industry advisory board composed of technical, legal and business environmental professionals from major oil companies and independent producers. The industrial advisory board will have the last word on funding decisions for technology development projects. If, in the opinion of the advisory board, a proposed project does not help fulfill the mission of the consortium the project will not be funded. All four of the IPEC universities have signed a memorandum of understanding forming IPEC and agreeing to this organizatianal structure.

THE SOUTH-CENTRAL ENVIRONMENTAL RESOURCE ALLIANCE (SERA)

In order to bring additional resources into IPEC and further ensure the success of its programs, IPEC has entered into an alliance with the Waste Management Education and Research Consortium (WERC). WERC was established through DOE sponsorship to expand the nation's capability to address waste management issues through education, technology development and technology transfer. WERC's special niche is radioactive, hazardous and solid waste management. WERC's members are New Mexico State University, University of New Mexico, New Mexico Tech, and Navajo Community College in collaboration with Sandia National Laboratories and Los Alamos National Laboratory. The missions at IPEC and WERC will be enhanced by a synergistic collaboration between the two consortia as the South-central Environmental Resource Alliance.

FUNDING OF IPEC

IPEC is seeking appropriations of $4 million for fiscal year 1998 and the succeeding fiscal years 1999, 2000, 2001, and 2002 through Department of Energy. The consortium will be responsible for private sector and state support of no less than 25 percent of federal appropriations in fiscal year 1998 and an average of 50 percent of federal appropriations over a five year period. The consortium will be subject to review as of September 30, 1999 and each 12-month period thereafter to ensure the effective production of data, regulatory assessments, and technology development meeting the stated goals of the consortium.

PREPARED STATEMENT OF CYRUS M. JOLLIVETTE, VICE PRESIDENT FOR GOVERNMENT RELATIONS, UNIVERSITY OF MIAMI

Mr. Chairman and Members of the Subcommittee: I appreciate the opportunity to present testimony on behalf of the University of Miami. The University is seeking your support for two initiatives within your purview: first, a project for the exploitation of high energy electron beam irradiation for the sterilization of medical wastes; and, second, a joint program with the U.S. Army Corps of Engineers which is addressing some of the urgent problems of South Florida's declining environment.

Our request is for your continued support of two very important projects in Florida. Already, substantial progress has been made which points to the high potential of these vital research initiatives. Your support of these efforts now ultimately will result in substantial savings not only to the federal government, but also to state and local governments.

First, I call your attention to the initiative at the University of Miami Laboratories for Pollution Control Technologies in collaboration with Jackson Memorial Hospital (the second largest hospital under a single license in the nation) which seeks to exploit high energy electron beam irradiation for the sterilization of medical wastes. The University has developed a process for treating waste water utilizing electron beams, which had been supported for many years by the National Science Foundation and the Environmental Protection Agency. This technology is also capable of disinfecting medical waste prior to landfill disposal.

Because of your support and that from private industry researchers now have developed, fabricated, and inaugurated a prototype electron beam facility at the University of Miami. For the project goals to become a reality and the technology to be made commercially available, we ask that you provide $1.5 million in continuation funding to leverage private sector support for this demonstration project at the University of Miami/Jackson Memorial Medical Center through the Department of Energy Biological and Environmental Research account.

Although the generation of potentially infectious waste material has been a necessary function of health care since Hippocrates, it is only within the past few years that treatment prior to disposal of this very sensitive waste stream has become an issue of grave concern and expense. This project addresses directly the myriad problems and costs associated with the approximately 600,000 tons of infectious waste generated annually by the nations hospitals and other medical facilities.

To date, the reaction has been the enactment of a complexity of laws and guidelines to direct the nation's health care providers how to handle their infectious waste—now referred to as regulated medical waste—in a manner that would protect their own employees, sanitation workers, and the public at large. Further, measures such as the Clean Water Act and the Clean Air Act which provide guidelines for new and existing medical waste incinerators require that treatment and disposal be done with minimal negative environmental impact with special focus placed on harmful air emissions and liquid discharges.

Over the past several years, researchers in Florida have been pursuing a nonburn treatment technology. Based upon the experimental work completed to date, this approach, although still in the testing and developmental stages, renders simulated infectious medical waste (red bag) both thoroughly disinfected and totally unrecognizable through a combination of advanced shredding and high-energy electron-beam technologies.

Mr. Chairman, the Congress should not appropriate money for half-way applications; rather, the Congress should concentrate on permanent solutions. The Congress should provide funds for research on the production and utilization of electron beam irradiation to replace incineration of medical wastes. Then, once and for all, we would solve the interrelated problems associated with the environment, and thus provide a clean and reliable method for the treatment and disposal of medical waste streams.

Second, we ask that you look favorably upon a joint program with the U.S. Army Corps of Engineers which is addressing the urgent problems of South Florida's declining environment. The University of Miami Center for Marine and Environmental Analyses is conducting research under contract with the Corps of Engineers Waterways Experiment Station (WES) Environmental Modeling, Simulating, and Assessment Center (EMSAC) at Vicksburg, Mississippi, and in support of the ecosystem restoration activities of the Jacksonville, Florida Corps of Engineers District Office.

We respectfully request that you allocate $3 million for the Corps of Engineers Waterways Experiment Station to provide core support of $1.5 million to EMSAC, including $500,000 to involve minority academic institutions; and $1.5 million to establish a cooperative agreement with one or more academic partners with major research institutions involved in complementary interdisciplinary scientific research relevant to ecosystem management and ecological risk assessment, including $500,000 to involve minority academic institutions.

Through this program research expertise is being brought to bear on many environmental issues of concern to the Army Corps of Engineers, particularly its aquatic plant and other environmental programs at the Vicksburg Waterways Experiment Station.

This crucial research program seeks to provide an ecological risk assessment and ecosystem management framework in support of the Waterways Experiment Station; apply modeling, experimental, and field expertise to studies of estaurine ecosystems; and advance the understanding of freshwater, marine, and coastal aquatic ecosystems in relation to human activities, with particular attention to South Florida.

The project is organized around the newly emerging principles of ecological risk assessment and ecosystem management and it builds upon previous work conducted under the sponsorship of the U.S. Man and the Biosphere Program, the Environmental Protection Agency, NOAA's Coastal Ocean Program, and private sector support. Because of the unique relationships of the academic Center for Marine and Environmental Analyses, the Corps of Engineers project will be broadly coordinated and integrated with other ongoing South Florida research, particularly in conjunction with the Federal Ecosystem Restoration Working Group, the South Florida Water Management District, the Florida Department of Environmental Protection, the University of Florida Agricultural Research Station in Belle Glade, and other regional groups of interest.

We are convinced that only through consistently funded, long-term regional partnerships can the problems of ecosystem management and ecological sustainability be addressed to maximize the potential for future generations to enjoy economic prosperity and unique natural resources.

Mr. Chairman, my colleagues and I know what a difficult appropriations year you face. However, again, we respectfully request that you give very serious consider-

ation to these two projects so that the research progress already made is not lost. In the long-term, these national investments will provide continuing dividends in our mutual search for cost-effective solutions for the nation's problems.

PREPARED STATEMENT OF LYNNE P. BROWN, ASSOCIATE VICE PRESIDENT, GOVERNMENT AND COMMUNITY RELATIONS, NEW YORK UNIVERSITY

Research into cognition, learning, emotion, and memory can help educators, physicians, and other health care givers, policymakers, and the general public by enhancing our understanding of normal brain development as well as the many disabilities, disorders, and diseases that erode our ability to learn and think, to remember, and to emote appropriately.

New York University is seeking $10.5 million over five years to establish at its Washington Square campus a Center for Cognition, Learning, Emotion and Memory. The program will draw on existing research strengths in the fields of neural science, biology and chemistry, psychology, computer science, and linguistics to push the frontiers of our understanding of how the brain functions, and how we learn.

Such exploration into the fundamental neurobiological mechanisms of the nervous system has broad implications for human behavior and decision making as well as direct applicability to early childhood development, language acquisition, teaching methods, computer science and technology development for education, the diagnosis and treatment of mental and memory disorders, and specialized training for stressful occupation.

Cognition, Learning, Emotion and Memory Studies at NYU (CLEM)

New York University is poised to become a premier center for biological studies of the acquisition, storage, processing and retrieval of information in the nervous system.

To be housed at NYU's Washington Square Campus within the Center for Neural Science, the new Center will capitalize on the university's expertise in a wide range of related fields that encompass our computer scientists who use MRI imaging for research into normal and pathological mental processes in humans, our vision scientists who are exploring the input of vision to learning and memory, our physical scientists producing magnetic measurements of brain function with a focus on the decay of memories, our linguists studying the relation of language and the mind, and our psychiatrists conducting clinical studies of patients with nervous system disorders.

The New York University Program in Cognition, Learning, Emotion and Memory (CLEM) focuses on research and training in the fundamental neurobiological mechanisms that underlie learning and memory—the acquisition and storage of information in the nervous system. Current studies by the faculty at NYU are determining why fear can facilitate memory; how memory can be enhanced; what conditions facilitate long-term and short-term memory; and where in the brain all these memories and processed and stored. The research capacity of this Center capitalizes on our expertise in physiology, neuroanatomy, and behavioral studies, and builds on active studies that range from the mental coding and representation of memory to the molecular foundations of the neural processes underlying emotional memories. Our faculty use saelectrophysiological and neuroanatomical techniques to study the organization of memory in the medial temporal lobe. Together these researchers bring substantial strength in psychological testing, computational sophistication, advanced tissues staining and electrical probes, and humane animal conditioning. These core faculty are well recognized by their peers and have a solid track record of sustained research funding from federal agencies and private foundations: total costs awarded and committed for their research for full project periods from all sources presently total $7 million. Additional faculty are being recruited in areas of specialization that include: the cellular and molecular mechanisms operative in neural systems that make emotional memory possible, neurophysiological studies of memory in nonhuman primates, computational modeling of memory, and neuropsychological and imaging research on normal and pathological human memory.

Colleagues in the Biology Department are doing related work in the molecular basis of development and learning. Given the important input of vision to learning and memory, the Center has strong links with the many vision scientists based in the Psychology Department who work on directly related topics that include form, color, and depth perception, memory and psycholinguistics. Colleagues in behavioral science study learning and motivation, memory and aging. Physical scientists explore the magnetic measurement of brain function, with a focus on the decay of

memories. CLEM also shares research interests with colleagues in the Linguistics Department, who study the relation of language and the mind.

Research linkages extend to computational vision studies, now centered in NYU's Sloan Program in Theoretical Neurobiology. The Sloan Program works closely with computer scientists at our Courant Institute on Mathematical Science, with colleagues at the Medical Center in Psychiatry, who use MRI imaging for research into normal and pathological mental processes in humans, and in Neurobiology, who are conducting clinical studies of patients with nervous disorders, especially memory disorders.

What is unique and exciting about the establishment of such a comprehensive center at NYU is the opportunity to tap into and coordinate this rich multidisciplinary array of talent to conduct pioneering research into how the brain works. In this, the "Decade of the Brain," NYU is strategically positioned to be a leader.

Early Childhood and Education

Research into the learning process as it relates to attention and retention clearly holds important implications for early childhood development. Although most of a person's brain development is completed by birth, the first few years of life are critically important in spurring intellectual development. For example, research has already shown that in their early years, children need human stimulation, such as playing and talking, to develop the ability to learn.

With more immigrant children in schools, language development is another crucial area of study. If a child's brain were more receptive to acquiring sounds during the first few months of life, and language in the first few years of life, then students may learn a second language more quickly if taught in the lower grades instead of waiting for high school.

In the midst of a national debate on education reform, thousands of education innovations are being considered without the advantage of a fundamental understanding of the learning process. CLEM researchers, coupled with educational psychologists, can contribute to a better understanding of how parents can stimulate their children's cognitive growth, how children learn at different stages and use different styles, how educators can accommodate those styles, and how educational technology can be harnessed to increase retention and memory.

At NYU, these efforts will be enhanced by our scholars and research conducted in our School of Education and our New York State-supported Center for Advanced Technology.

Computer Science and Technology Development

As we refine our knowledge of how the brain acquires, processes, retains and retrieves information and images, we will also be able to improve the design, development and utilization of computer science and technology. As we reach a better understanding of how children learn, we can more effectively harness computer technology in the service of education.

At NYU, this effort is enhanced by the presence of our New York State-supported Center for Digital Multimedia, Publishing and Education, which brings together educators, laboratory scientists and software designers who explore how interactive multimedia technologies enhance learning and develop prototype teaching models.

Specialized Training

Research into how cognition and emotion interact can have applicability to other diverse areas of interest including retraining of adult workers, job performance and specialized training for high risk or stressful jobs such as military service and emergency rescue work.

Accordingly, we believe that the work of this Center is an appropriate focus for the Department of Energy, given the Department's long-term involvement and investment in computer science technology through its Basic Energy Sciences program. The focus of the NYU Center for Cognition, Learning, Emotion and Memory is entirely consistent with the Department's commitment both to the Basic Energy Sciences, including computer science, and to its commitment to Biological and Environmental Research. We have demonstrated how scientists from a broad range of biological sciences are working together with leading mathematics and computer science researchers to achieve a better understanding of how the brain functions and how we learn. The Department's commitment to education and to science will be well served through this partnership.

PREPARED STATEMENT OF DAVID P. BECK, PH.D., PRESIDENT, CORIELL INSTITUTE FOR MEDICAL RESEARCH

Mr. Chairman and members of the subcommittee, I appreciate the opportunity to be here today to discuss with you the wisdom of establishing a National Human Cell Repository Center, and the importance of such a repository as a logical step in advancing cutting-edge biomedical research in the Department of Energy's (DOE) Biological and Environmental Research Program. There is a critical and increasing need for a contamination-free supply of human cells for high level research into genetic disorders such as cancer, heart disease, Parkinson's disease, and other serious human diseases.

As a scientist and President of the Coriell Institute for Medical Research, it is my job to oversee the acquisition, characterization, cataloguing and shipment of human cell cultures to the DOE and NIH centers for genome research and other high level research facilities around the United States and the world. Coriell Institute is the world's largest provider of such cell cultures.

The Coriell Institute was founded in 1953 by Dr. Lewis Coriell, a scientist who developed pioneering techniques for growing human cells in culture, thus permitting their use in scientific research. Early on, Coriell research was crucial in developing the cell culture technology that made the Salk Polio Vaccine possible. Today, scientists throughout the world depend on Coriell cell cultures for use in disease research, and many research advances have depended directly on the cultures supplied by Coriell.

Biomedical science today is making rapid advances in both diagnostic and therapeutic techniques. For example, molecular antibiotics are being developed which can find and destroy the genes of an infectious organism in an utterly specific fashion, and gene-based therapeutic techniques are being tested through clinical trials for the treatment of such diseases as cancer. In short, we are on the proper scientific trajectory which will one day make it possible to eliminate such diseases as diabetes, cystic fibrosis, cancer and other diseases which stem from defective genes.

Today, a problem in sustaining progress on disease research stems from the fact that the volume of cells needed for high level research is growing and will continue to grow as the scientific community extends molecular genetic technology into new areas such as mental illness. Specifically, this means that of the 4,000 plus genetic diseases known to exist, only about 1,000 are banked and available as cell cultures from Coriell. In order to procure and catalogue cell cultures for the remaining 3,000 diseases, a dedicated human cell repository is essential.

Mr. Chairman, the Coriell Institute has many responsibilities in its role as the nation's premier supplier of cell cultures. Of particular note is the role of Coriell Institute, in response to demands from the research community, in acquiring specific collections of cells for research into genetic diseases. A prime example is Coriell's work over the past year in building a collection of cells from breast cancer patients. Our scientists were involved for many years in the search for a mammary tumor virus, and have recently developed a new technology for whole genome amplification to make genetic material available from tumors such as those from breast cancer patients. The technology is important because cell lines from this type of tumor are difficult to grow. This technique allows access to rare and valuable tissue from patients with a family history of the disease.

The breast cancer initiative is a good illustration of the ways in which new frontiers can be crossed in studying diseases. It is also a telling illustration of a serious problem in advanced research—specifically, the increasing demand for cell cultures and the related services which support high level research.

Mr. Chairman, as the individual responsible for the largest human cell repository in the world, I can tell you that a National Human Cell Repository Center is a critical next step in facilitating the most sophisticated research on genetic diseases. I believe, as do others in the field, that a national center which provides cells and genetic material to researchers around the country and abroad will greatly enhance the quality of medical research. As NIH Director Harold Varmus has testified, "we foresee new means to prevent disease, and we anticipate the development of novel therapies for the next century, based on the delivery of genes to ailing cells, and drug design guided by molecular structures."

Novel therapies for the next century is the goal in disease research (as NIH Director Varmus has pointed out). To accomplish that goal requires a consistent and reliable supply of cell cultures, the space to store such cultures and the human skill and equipment to support a state-of-the-art facility.

It is my belief that the establishment of a National Human Cell Repository Center will provide an essential component in support of disease research in both the Federal and non-Federal sectors. The Department of Energy has a long-standing inter-

est in examining health effects of environmental factors; indeed its founding of the Human Genome Project set in motion much of the most exciting activity we see today in genetics research. In support of this project, Coriell Institute, during the past several years, has distributed hundreds of shipments of cell lines to DOE labs. While such activity has been important, it will be insufficient for future efforts in genetic research, which is why we need a National Repository.

Mr. Chairman, establishing such a facility from the ground up would be excessively expensive and would require too much time to put the necessary mechanics in place. However, a National Center can be built by simply adding to an existing resource which is positioned to supply research demands into the next century. That resource is the Coriell Institute for Medical Research.

Given Coriell's position as the world's largest human cell repository and its interaction with the DOE and NIH labs, it makes perfect sense to establish a National Center in a public-private partnership fashion, particularly given the Federal Government's long-standing and continued support for medical research. By making an investment in a National Human Cell Repository Center, the Federal Government can help to ensure the availability of human cells for disease research scientists throughout the United States and the world.

The Coriell Institute already has a plan for establishment of a National Repository, and is prepared to implement that plan immediately. Simply put, this repository can come about by way of an extension to the existing Coriell facility; the cost will be approximately $12 million. Since Coriell is a non-profit entity and thus does not have sufficient resources to undertake the extension, it is requesting Federal grant assistance to carry out the plan noted above. In exchange, Coriell will operate the Repository from its own resources.

In summary, it is my belief that Federal investment toward this end will produce tremendous benefits and that, considering the cost of disease to this country and the potential for missed research opportunities if we do not move forward, we cannot afford not to establish a National Cell Repository.

Mr. Chairman, I will be happy to discuss this initiative with you or any of the subcommittee members at any time.

Thank you for this opportunity.

PREPARED STATEMENT OF DR. JAMES SEIBER, NEVADA PROJECT DIRECTOR, DEPARTMENT OF ENERGY EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH

Mr. Chairman and Members of the Subcommittee, I thank you for the opportunity to submit this testimony for the record. My name is Dr. James Seiber, and I am Project Director for the Department of Energy (DOE) Experimental Program to Stimulate Competitive Research (EPSCoR) in the state of Nevada. I am pleased to submit this testimony today regarding DOE EPSCoR.

I would like to thank this Subcommittee for its support of DOE EPSCoR over the past seven years, and I ask the Subcommittee to continue to provide strong support for this important program. I would particularly like to thank Senator Reid for his support of DOE EPSCoR. Senator Reid's leadership and hard work have been absolutely critical to this program's success in Nevada and the other EPSCoR states.

Background

EPSCoR is a science and technology research and development program within seven federal agencies, including DOE. EPSCoR is improving our nation's science and technology capability by funding talented researchers in states that historically have not received significant federal R&D funding. EPSCoR helps researchers improve their research capabilities and quality in order to compete more effectively for non-EPSCoR research funds. It relies on rigorous merit review in order to ensure high-quality research. And EPSCoR does all of this for a relatively modest investment of federal R&D funds.

EPSCoR is necessary because our nation's S&T research funds have historically been concentrated in a small number of institutions and states. That's neither good science nor good public policy. As our nation moves toward a science and technology policy aimed at global economic competitiveness, it is imperative that all states have a sufficient S&T base to contribute. Students across the country—not just in a handful of states—need access to high-quality education and research, and the jobs and economic health that go along with a competitive R&D base.

DOE EPSCoR

DOE EPSCoR was initiated by Congress in fiscal year 1991 with a $4 million appropriation. The program was targeted to those states previously designated for the

National Science Foundation EPSCoR program.[1] In 1992, Congress authorized DOE EPSCoR in the Energy Policy Act (Public Law 102–486). The Administration has requested level funding of $7 million for the program in its fiscal year 1998 budget request.

With the $7 million Congress appropriated for fiscal year 1997, DOE will fund two-year awards for a maximum of $750,000. Only renewal proposals will be accepted. In fiscal year 1997, DOE expects to fund 23 clusters and 63 projects in nine states. Award announcements for fiscal year 1997 are expected to be made in July.

DOE EPSCoR gives the EPSCoR states the opportunity to conduct nationally competitive research and to develop science and engineering expertise in energy-related fields. Due to the success of this program and its importance to DOE EPSCoR States and to our nation, the Coalition of EPSCoR states respectfully requests that the Subcommittee appropriate $10 million in fiscal year 1998.

DOE EPSCoR in Nevada

I would like to give the Subcommittee a few examples of the impact DOE EPSCoR is having in the state of Nevada. It is rather remarkable how closely federal agency support of research and development is intertwined with the University and Community College System of Nevada's environmental programming. This is well illustrated by significant support from the U.S. Department of Energy.

Nevada is one of seven EPSCoR states with DOE EPSCoR implementation awards. As with all EPSCoR awards, these are statewide awards supporting faculty at University of Nevada-Reno (UNR), University of Nevada-Las Vegas (UNLV), and Desert Research Institute (DRI), and supporting the four community colleges through various collaborative relationships. There are two research components or clusters:

Study of Response of Desert Vegetation to Increased CO_2.—The centerpiece is the development of a Free Air Carbon Dioxide Exchange (FACE) site at the Nevada Test Site (NTS). Over 20 scientists from Lawrence Livermore National Lab, Brookhaven, and other universities are participating. This project is headed by UNR Biochemistry Chair, Jeff Seemann, with Bob Nowak (UNR), Stan Smith (UNLV), and a large cadre of graduate students and staff participating. The National Science Foundation and the DOE-Nevada Operations Office provide supplemental funds.

Chemical Physics—Laser Technology at UNLV and Ion Physics at UNR.—High energy light interacting with atomic matter is under study, as are nanostructures, with national laboratory collaboration. John Farley (UNLV), heads up the cluster. Ron Phaneuf (UNR), Tao Pang, Dennis Lindle, and Chanfeng Chen (UNLV) participate, again along with the participation of many faculty, staff, and students.

There is also a human resource component which has placed major effort in promoting interactions with the DOE Nevada Test Site and our state's school system through a traineeship and internship component. This component is headed by Bill Cathey (UNR) and Ellen Jacobson (UNLV).

Conclusion

The Subcommittee's support of DOE EPSCoR will determine whether the EPSCoR States are able to continue providing DOE with quality, merit-reviewed research and, as a result, help the U.S. maintain world leadership in energy-related research fields. Therefore, I ask the Subcommittee to appropriate $10 million for DOE EPSCoR in fiscal year 1998. This level of funding will strengthen DOE's partnership with the EPSCoR states, and greatly enhance the EPSCoR states' contribution to our nation's energy R&D expertise.

I urge the Subcommittee to consider carefully this request, and I thank the Subcommittee for this opportunity to testify.

PREPARED STATEMENT OF THE AMERICAN PUBLIC POWER ASSOCIATION

The American Public Power Association (APPA) is the national service organization representing the interests of over 2,000 municipal and other state and locally owned utilities throughout the United States. Collectively, public power utilities deliver electric energy to one of every seven U.S. electric consumers (about 35 million people), serving some of the nation's largest cities. The majority of APPA's member systems are located in small and medium-sized communities in every state except Hawaii.

[1] EPSCoR states include Alabama, Arkansas, Idaho, Kansas, Kentucky, Louisiana, Maine Mississippi, Montana, Nebraska, Nevada, North Dakota, Oklahoma, South Carolina, South Dakota, Vermont, West Virginia, Wyoming, and the Commonwealth of Puerto Rico.

We congratulate the Subcommittee's new Ranking Member, Senator Reid, and welcome new members of this Subcommittee, Senators Craig, Kohl and Dorgan. APPA looks forward to working with you in the 105th Congress. We appreciate the opportunity to submit this testimony outlining our fiscal year 1998 appropriations priorities within your Subcommittee's jurisdiction.

EMF Research

Electric and magnetic fields (EMF) refers to the electric field caused by voltage and the magnetic field surrounding a current-carrying conductor. Concerns about possible adverse human health effects from EMF exposure have continued since the early 1970s. In response to public questions about EMF, Congress created a new EMF Research and Public Information Dissemination Program (better known as the "EMF RAPID" program) in Section 2118 of the 1992 Energy Policy Act (EPACT). This legislation authorized a five-year, $65 million health-based research effort to determine the effects of EMF, to demonstrate EMF mitigation technologies and to disseminate information to the public. Fifty percent of the funding for this program comes from nonfederal sources including electric utilities, electric equipment manufacturers and other interested parties. APPA's member systems have met their contribution goals for each of the past two appropriations cycles. To date, 909 public power systems have contributed $1.9 million to fund EMF RAPID.

EMF RAPID was intended by Congress to be a five-year program that was to begin in fiscal year 1993 and sunset at the end of fiscal year 1997. However, because fiscal year 1993 appropriations preceded the signing into law of EPACT, a one-year extension of the program is needed through fiscal year 1998 in order to meet Congress' intent, complete ongoing research projects and provide the program the maximum non-federal contributions called for under the law.

The extension has the support of House authorizing committees and is considered non-controversial. H.R. 363 providing for the extension has been introduced by Rep. Edolphus Towns. It has been favorably reported by the House Commerce Committee and a hearing has been conducted on the legislation in the House Science Committee. Markup in the latter committee and consideration by the full House are expected very soon. Discussions have proceeded with the authorizing committee in the Senate and we anticipate action on the EMF RAPID extension in the Senate very soon as well. APPA urges this Subcommittee's support of extension legislation.

The Administration has recommended $4 million for the EMF RAPID program in fiscal year 1998. APPA supports this request as well as the authorization for the ongoing EMF research program, to conduct studies primarily at DOE labs, to be funded by an additional $4 million. In its budget submission, DOE indicated that after fiscal year 1998 the agency will make no further requests for funding of either the EMF RAPID or core research programs.

Renewable Energy Programs

APPA believes it is important to continue development and commercialization of clean, renewable energy resources as we face the prospect of increased competition in the electricity marketplace. Two of the most significant barriers to greater renewable energy use are cost and lack of demonstrated experience. Because of the requirement to supply electricity to customers on demand, with high reliability at a reasonable cost, electric utilities often are conservative when evaluating new technologies. Evolving deregulation, coupled with stable fuel prices, now adds a further challenge to greater adoption of relatively unproved renewable technologies.

We applaud the Administration's emphasis on DOE energy efficiency and renewable programs and ask that this Subcommittee work to ensure that renewable energy remains part of the full range of resource options available to our nation's electric utilities. APPA supports a minimum of $342 million for renewable energy technologies in fiscal year 1998. This funding level will restore much of the severe 25 percent cut made in these programs in fiscal year 1996.

Renewable Energy Production Incentive Program (REPI)

APPA urges this subcommittee's continued support for REPI, also authorized by EPACT, in Section 1212, at the $4 million level requested by Administration for fiscal year 1998. REPI permits DOE to make direct payments to publicly and cooperatively owned electric utilities at the rate of up to 1.5 cents/kWh of electricity generated from solar, wind, certain geothermal and biomass electric projects. Because projects of this nature often require a long lead time for planning and construction it is imperative that stable and predictable funding be provided.

REPI was established to ensure equity between investor-owned utilities that utilize renewable energy tax credit and production payments and publicly and cooperatively owned electric utilities that are unable to do so. Several electric utility restructuring bills introduced in the 105th Congress as well as in the state legisla-

tures mandate use of renewable energy sources. REPI payments provide the singular financial incentive for publicly and cooperatively owned utilities to meet these increasing demands. In addition, production payments to utilities are an excellent market-based method to spur greater interest in renewables. They fit well with DOE's emphasis on market-led commercialization.

Climate Challenge Program

The Climate Challenge program is a joint initiative of the electric utility industry and DOE. It emphasizes voluntary, cost-effective measures to reduce, avoid or sequester greenhouse gas emissions to 1990 levels. Through voluntary agreements, 272 public power systems and other electric utilities have committed to reduce emissions by over 43 million metric tons of carbon equivalent in the year 2000. In addition to demonstrating that important environmental objectives can be achieved through voluntary efforts, the Climate Challenge program contributes to a strong U.S. position in international climate change negotiations. APPA supports the Administration's budget request of $1 million to continue the important work of the Climate Challenge program.

Storage for High-Level Nuclear Waste

We support the Administration's budget request of $380 million for DOE's Office of Civilian Radioactive Waste Management. These funds will enable DOE to continue preparations to accept used fuel beginning in 1998 as well as to continue scientific studies at Yucca Mountain leading to a viability assessment in 1998.

Advanced Hydropower Turbine Program

The Advanced Hydropower Turbine Program is a joint industry/government cost-share effort to develop a new, improved hydroelectric turbine superior in its ability to protect fish and aquatic habitat and operate efficiently over a wide range of flow levels. We support funding this program at $1.5 million in fiscal year 1998.

During the next decade over 100 hydroelectric projects will seek new licenses from the Federal Energy Regulatory Commission (FERC). Many of these projects were originally licensed over 50 years ago. Newly imposed licensing conditions can cost hydro projects 10 to 15 percent of power generation. A new, improved turbine could help assure any environmental conditions imposed at relicensing in the form of new conditioning, fish passages or reduced flows are not accomplished at the expense of energy production. This is particularly important due to the increasingly competitive electric market in which utilities operate today. Flow levels will affect the economics of each of these projects and many will be unable to compete if the current trend toward flow reductions continues.

The Advanced Hydropower Turbine Program is planned in three phases: (1) design development; (2) model design and testing, and (3) development of the final prototype. It is important that the prototype be in place in order to accommodate the many hydroelectric projects that will be up for relicensing after the year 2000.

Federal Power Marketing Administrations (PMAs)

We appreciate this subcommittee's continued support of the federal power program.

APPA favors increased efficiency in PMA operations. However, we believe Congress also must recognize that federal power sales cover all PMA operating expenses plus all Corps of Engineers and Bureau of Reclamation operations, maintenance, replacement and rehabilitation expenses for hydropower and repayment of the federal investment in the construction of the projects. Power sales also support many nonpower-related expenses associated with these projects. Budget "scoring" rules aside, because the PMAs charge cost-based rates, reducing discretionary appropriations to PMAs actually saves the government nothing. As appropriations are lowered, power rates fall accordingly thus reducing mandatory receipts on the other side of the ledger. The Administration has requested an overall reduction in appropriations to the PMAs for fiscal year 1998. In addition, significant reliance is placed on use of prior year balances that are as yet uncertain and can vary depending upon such circumstances as water flows and general weather conditions. We believe these funding decisions are short-sighted and ask this Subcommittee's careful review of PMA appropriations.

In addition, the Administration's fiscal year 1998 budget assumes that the PMAs begin to cover their full share of the unfunded liability of the Civil Service Retirement (CSRS) and Disability Fund, the Employees' Health Benefits Fund and the Employees' Life Insurance Fund. While APPA does not oppose this proposal, we ask that this Subcommittee carefully consider the time schedule set for implementing these payments in light of the possible impact on rates. A phased-in payment sched-

ule, such as that proposed in the Administration's budget for Bonneville Power Administration, should be considered.

Corps of Engineers and Bureau of Reclamation

More than 500 public power systems purchase power generated at U.S. Army Corps of Engineers and Bureau of Reclamation dams and marketed by the five PMAs. APPA asks this subcommittee's support in assuring adequate appropriations are provided to the Corps and Bureau for operation, maintenance, major rehabilitation, upgrading and replacement of the equipment needed at the powerhouses. The Administration has requested reductions in several of these accounts for fiscal year 1998. Unfortunately, budget realities in the past often have required the Corps and Bureau to defer upgrades and maintenance resulting in efficiency losses affecting hydropower production.

Discussions are continuing in various project areas between customers and the operating agencies seeking alternatives to relieve the stress caused by the spiraling effects of deferred maintenance. We will keep this subcommittee apprised of our progress in this regard and look forward to working with you and the authorizing committees in seeking remedies to increase efficiencies and deal with ongoing maintenance problems.

Federal Energy Regulatory Commission (FERC)

APPA supports the Administration's budget request of $167.6 million for FERC, an increase of seven percent over last year. Adequate funding for the agency is particularly necessary at this time in order to provide the resources needed to continue implementation of electric utility industry restructuring and to address major issues such as open-access and stranded costs.

PREPARED STATEMENT OF THE AMERICAN CHEMICAL SOCIETY

Advances in science and technology are the keys to the nation's prosperous future. Within the Department of Energy, the Office of Energy Research makes many contributions to capture the potential of these advances. The advantages of federal support for science and technology are manyfold: (1) Science and technology drive economic growth. Only the federal government can provide the long-term support necessary to enable continued future growth—particularly in an era of impatient capital and global competition. (2) Science and technology improve the quality of life. Scientists can now cure more diseases, educate more students, and live in a cleaner environment because of discoveries made through science and technology. (3) Science and technology expand the boundaries of knowledge. The nation's future prosperity—indeed world leadership—depends upon increased understanding of the natural world. While the Society recognizes the variety of demands on the federal dollar, a key way to leverage scarce federal resources to better meet these challenges is by federal support for science and technology. The American Chemical Society believes that the Office of Energy Research (OER) of the Department of Energy must be supported in the range of 7 percent over fiscal year 1997 to reverse the inflationary losses of the past five years.

OER is a critical element of the broader national research portfolio that includes the research accounts at the National Institutes of Health, the National Science Foundation, and the Department of Defense. The arguments for increased support for OER are impressive:

—OER serves as a critical conduit for achieving many of our national goals and will touch nearly every American, directly or indirectly—from reducing energy consumption to harnessing new energy sources to improving the quality of our environment;

—Energy remains fundamental to the ability of industrial societies to function. As the energy demands of our nation and of the world escalate, non-renewable energy sources—vital to progress—continue to diminish. Under these circumstances, energy productivity, self-sufficiency, and efficiency are of paramount importance to the nation's security and economic prowess; and

—Advances in understanding combustion at a fundamental level, improved battery storage, increased efficiencies in metallocene catalytic processes, and breakthrough superconducting materials represent some of the critical energy-related needs OER research supports.

Just imagine a computer that can compute a teraflop of operations per second, bioengineered skin that can be used on critical burn victims, and sensors built on artificial intelligence that can detect invisible particles in food that would otherwise pass unobserved to the naked eye. These advances, and so much more, are now realities because of years of basic research discoveries that built one atop the other.

Without support for fundamental research in the physical sciences through the Department of Energy's Office of Energy Research (OER), the nation's research portfolio will be incomplete, and the nation's ability to sustain growth could be significantly compromised. New knowledge and scientifically-literate students will ensure continued economic growth, support an improved quality of life, and expand the technological boundaries of the world. Strong federal support for science and technology is the cornerstone of the partnership among industry, academia, the states, and the federal government to meet these goals. The United States cannot afford to hinder progress by funding science and technology below inflationary levels. The science community's recommendation that OER be funded in the range of a 7 percent increase reflects a balance between keeping pace with inflation and recognizing the limited resources of the federal government.

Strong support for OER will stand as an important achievement of the 105th Congress, for both its foresight and its commitment to a better standard of living for all Americans. The American Chemical Society, with its 152,000 professional chemists and chemical engineers who work in industry, academia, and government, feels that the nation's portfolio of research and education in the sciences is a critical key to our nation's economic security and quality of life. The Society looks forward to working with the 105th Congress to make that future a reality.

PREPARED STATEMENT OF FATHER WILLIAM L. GEORGE, S.J., AND FATHER T. BYRON COLLINS, S.J., SPECIAL ASSISTANTS TO THE PRESIDENT, GEORGETOWN UNIVERSITY

Mr. Chairman and Members of the Committee: We are Father William L. George, S.J., and Father T. Byron Collins, S.J., Special Assistants to the President of Georgetown University, the Father Leo J. O'Donovan, S.J. We appreciate this opportunity to testify before your Subcommittee.

Last year in Title II of Public Law 104–271, Congress authorized the Secretary of Energy to solicit proposals for projects to prove the feasibility of integrating fuel cells (1) with photovoltaic systems for hydrogen production and (2) with systems for hydrogen production from solid waste via gasification or steam reforming. The same title directs the Secretary of Energy to give preference to proposals that are submitted jointly from consortia, that include academic institutions, industry, State and local governments and Federal laboratories and reflect proven experience and capability with the technologies relevant to the fuel cells.

Georgetown University has developed a project that is consistent with the requirements of this Title II of Public Law 104–271. Our program would be a Solid Waste-to-Hydrogen to Fuel Cell Energy Exemplar that uses photovoltaics and solid waste to produce hydrogen to drive fuel cells and also produces significant amounts of pure deionized water. None of the processes will use incineration. Instead, the project uses existing advanced steam reforming devices to process solid and complex waste into hydrogen so that there is no negative environmental impact. Waste is reduced at a rate of 1,000 lbs. to seven pounds of clean minuscule residue. The produced hydrogen serves two purposes: first, it becomes an energy source for fuel cells which, in turn, will produce heat, water and energy; second, the hydrogen from this process, together with the hydrogen generated by sunlight through photovoltaics, will produce large amounts of power, heat, and water for the systems use. The technology for such a project has been successfully tested at Edwards Air Force Base and Oakridge's Westinghouse SEG plant.

Georgetown plans to develop this project and has gathered appropriate consortium members composed of academic institutions, industry, State and local governments, and Federal laboratories.

Since Title II of Public 104–271 has already authorized $50 million for such projects, we request that the full amount be appropriated in fiscal year 1998.

PREPARED STATEMENT OF THE AMERICAN SOCIETY FOR MICROBIOLOGY

The American Society for Microbiology (ASM), the largest single life science organization in the world, comprising more than 42,000 members, appreciates the opportunity to provide written testimony in support of the Department of Energy's research programs.

The ASM is made up of scientists who work throughout academic, governmental and industrial institutions worldwide. Microbiologists are involved in research on problems related to energy, the environment and human and animal health. The mission of ASM is to enhance the science of microbiology, to gain a better understanding of basic life processes, and to promote the application of this knowledge for improved health, and for economic and environmental well being.

The Administration's proposed budget for fiscal year 1998 requests $19.2 billion for the DOE overall. Included in that request is $2.5 billion for programs supported by the Office of Energy Research (OER). The following testimony will highlight research supported by the Division of Energy Biosciences in the Office of Basic Energy Sciences (BES), and the Health and Environmental Research Programs (OHER) within the OER as well as programs in the Office of Industrial Technologies, such as Energy Efficiency and Renewables (EE). Federal investment in these programs today will help to maintain future U.S. scientific leadership.

The ASM strongly supports the inclusion of basic science programs within the DOE. While relatively small in terms of the overall DOE appropriation, these programs produce important fundamental discoveries that provide the foundation for subsequent developments in biotechnology related to energy and the environment.

Many of the DOE scientific research programs share the goal of producing and conserving energy in environmentally responsible ways. Areas of research include basic research projects in microbiology as well as extensive development of microbiological systems to produce alternative fuels and chemicals, to recover fossil fuels, to improve the refinement process of fossil fuels, to remediate environmental problems and to reduce wastes and pollution.

It is imperative for the United States to maintain a strong science budget that supports basic research. Although the benefits from basic research are not always immediately obvious, the United States must invest in both basic and applied science, which are interdependent, as well as in programs that bridge the gap between the two.

The Administration's requested funding level for the Office of Basic Energy Sciences is $661.2 million for fiscal year 1998. This funding level is an $11.5 million increase over last year. BES funds important microbiological basic research programs through the Energy Biosciences Division. In fact, about one fifth of all BES funds go directly to support research at academic institutions across the nation. For fiscal year 1998, the President's budget proposal has level funded the Energy Biosciences Division within the BES at a level of about $26 million. This program focuses on research in both microbiological and plant sciences. The exciting research supported by DOE's Energy Biosciences will lead to new discoveries in producing energy without risking our environment and finding effective methods of cleaning up existing contamination.

The ASM continues to be concerned about the adequacy of funding for basic research supported by the DOE's Energy Biosciences Division. We urge Congress to increase basic research funding for the Energy Biosciences, and at least to offset the effect of inflation. Further erosion of funding for this program will have a deleterious effect on important biotechnology and energy-related research and on the future entry of scientists in this critical area of research.

Important microbiological research is also supported by the Office of Health and Environmental Research through their Biological and Environmental Research Program (BER). The Administration's budget proposal includes $376.7 million for BER in fiscal year 1998, about $5.5 million less than last year's funding level. The BER supports research in the following divisions: Basic Life Sciences, Health Effects, Medical Applications and Biophysical Research, and Environmental Sciences Research. The BER is charged with developing advanced technologies that will improve medical care, public health, and worker safety while achieving a fundamental understanding of several biological and environmental components and processes.

The Administration has proposed $157 million for the Basic Life Sciences subprogram of the BER in fiscal year 1998. The Basic Life Sciences subprogram supports research to learn the molecular structure of important biological molecules to assist in the efficient removal of environmental contaminants. This important program helps to determine the DOE's future biotechnology needs including applications in energy development, use and cleanup.

Within the Basic Life Sciences subprogram is the Human Genome Program (HGP), which is jointly administered by the National Institutes of Health (NIH) and the DOE. The ultimate goal of the HGP is to decipher all three billion DNA subunits that make up the genetic code within each human cell. The benefits to human health from this program will be unmeasurable. Additionally, the HGP supports two major genome databases available throughout the scientific community. The Genome Data Base at the Johns Hopkins University and the Genome Sequence Data Base in Santa Fe, New Mexico, help to make important discoveries accessible to scientists and they promote wide access to current research results from the biological and environmental sciences. Increased availability and access to information in these data bases are important to the scientific peer review process, and will pave the road to many new discoveries in the future. The Administration included $85.1

million for the HGP in its fiscal year 1998 budget proposal, in addition to the $205.2 million from the NIH. The ASM fully supports this increase.

In 1994, the OHER began the Microbial Genome Program (MGP) as a complement to the DOE Human Genome Program. This program would receive about $7 million for fiscal year 1998, about $2 million more than last year. The MGP is at the cutting edge of microbiological research. Just last year, researchers supported by the MGP announced the complete sequencing of the genome of a methane-producing microbe that lives 8,000 feet deep in ocean thermal vents. This microbe (*Methanococcus jannaschii*) converts inorganic material into methane. More than two thirds of the genes of this microorganism are radically different from any previously sequenced. This has great significance in terms of understanding microbial evolution and the potential for biotechnological developments based upon novel microbial genomes and metabolic activities. Similar research has discovered other microbes living in other extreme conditions, such as in areas with high levels of radioactivity and the bottom of oil wells.

As scientists learn more about the microorganisms that live in these extreme conditions, they learn more about how to develop newer, cleaner forms of energy and technologies to clean up the waste associated with energy production and consumption. The DOE has installed the necessary peer review and advisory program to the MGP to ensure that the microorganisms selected for sequencing will yield the greatest scientific informational benefits and that the research is of the highest quality. The ASM believes that even greater benefits would be achieved if the program were funded at a level of $10 million and urges this Subcommittee to consider adding funds for an expanded Microbial Genome Project.

The DOE plans to expand its research into microbial diversity, and will begin sequencing the genomes of bioremediative microorganisms. Due to a scientific technique called sequence leveraging, a practice of using previously sequenced microbes to build the sequences of similar non-sequenced microbes, the results of these initiatives will be more readily available to other scientists, through the use of databases. This will aid scientists in their research into new biotechnologies such as Bioremediation, a technology which emerged during the Exxon Valdez cleanup as a cost-effective way of eliminating pollutants.

Included in the Administration's fiscal year 1998 budget request is $66.4 million for Environmental Remediation, of which about $28 million is targeted for Bioremediation Research, about $6.8 million more than the fiscal year 1997 funding level. The ASM fully supports this increased funding level and urges Congress to sustain it.

Bioremediation scientists are searching for cost-effective technologies to improve current remediation methods to clean up DOE's contaminated sites. New research in this area is supported by the Natural and Accelerated Bioremediation Research Program (NABIR) which will lead to new discoveries into reliable methods of Bioremediation of metals and radionuclides as well as organic pollutants in soils and groundwater. For fiscal year 1998, the Administration proposed $19 million to fund the NABIR program, this includes funds for the establishment of one or more field research centers and funds for some subsurface exploring. The NABIR program will move into real world field research in 1998 that will determine the practical applications of Bioremediation for cost-effective cleanup of pollutants at DOE sites. This is a critical phase of this program. The level of requested funds will permit research at one contaminated field site.

The ASM strongly recommends an additional $5 million be allocated to this effort with the aim of ensuring that two field research sites be established that span the breadth of pollution problems faced by the sites managed by the DOE and others.

Other exciting new microbiological research supported by BER, is the Biotechnological Investigations—Ocean Margin Program (BI–OMP). This program is the second phase of the full Ocean Margin Program, and will look into the effects global change has on marine microbes. The findings from this program will be crucial to understanding the responses of marine biological systems to changes in their environments.

In addition to the Offices of Basic Energy Sciences and Health and Environmental Research, the DOE supports other important microbiological research in the Office of Energy Efficiency and Renewable Energy (EE). About $1.8 million of the proposed $15 million for the Hydrogen Program will support research into the production of biohydrogen for use in utility, transportation and industrial applications. Additionally, the transportation biofuels program supports microbiological research into the production of ethanol to reduce the United States' dependency on oil imports. This program is funded at $27.7 million for fiscal year 1997 and is proposed to receive a $12.4 million increase for fiscal year 1998.

The Office of Energy Efficiency and Renewable Energy has been known for supporting bridging research such as the Energy Conversion and Utilization Technologies Program (ECUT) and the Advanced Industrial Concepts Division, both of which have been eliminated. Bridging research provides an important stepping stone or a "bridge" that links basic to the applied sciences. Two microbiological EE programs have been eliminated for fiscal year 1998 in the President's budget proposal. Alternative Feedstocks and Bioprocessing have been zeroed out for fiscal year 1998. These programs provide important microbiological research that supports the U.S. paper, chemical, petroleum and agriculture industries. It is important that the DOE continue its commitment to programs that bridge the gap between the basic and applied sciences.

There is an ever growing gap between the basic research programs that can take several decades to build a fundamental science base for energy and environmental development and the final application phases that may only take a few months or years. This gap needs to remain crossable so that basic research can be converted into real world applications. A modest program that manages the bridge between basic research and real world problem solving must receive continuing support.

Finally, the ASM wishes to express continued concern over the proposals to eliminate the Department of Energy and its research programs. Thankfully these proposals have not been successful. While this is a period of budget constraints, the United States must maintain its commitment to develop cost-effective environmentally sound technologies to clean up contaminated sites. Additionally, the DOE's research programs help to keep the United States at the forefront of scientific discovery and competitive in the world marketplace. Japan for example has an aggressive effort to develop hydrogen as an alternate fuel source. The DOE's Hydrogen Program if successful will produce an environmentally friendly fuel that could reverse global warming and revolutionize the automotive and fuels industries while freeing America from dependency on foreign oil. The ASM encourages Congress to maintain its commitment to the Department of Energy research programs to maintain the United States' leadership in these vital industries and continue our commitment to a strong basic science program.

Thank you for this opportunity to provide testimony in support of the DOE basic life sciences programs. The ASM hopes that its recommendations will be useful to the Subcommittee. We would be pleased to respond to any questions from the Subcommittee.

PREPARED STATEMENT OF C. PAUL ROBINSON, DIRECTOR, SANDIA NATIONAL LABORATORIES

INTRODUCTION

Mr. Chairman and distinguished members of the committee, thank you for the opportunity to testify today. I am Paul Robinson, director of Sandia National Laboratories. Sandia is managed and operated for the United States Department of Energy (DOE) by Sandia Corporation, a subsidiary of the Lockheed Martin Corporation.

Laboratory Missions

Sandia is the DOE laboratory responsible for the ordnance engineering for all U.S. nuclear weapons. Our responsibilities comprise the design, certification, and assessment of the non-nuclear subsystems of nuclear weapons, including arming, fuzing, and firing; safety, security, reliability, and use-control; issues associated with the production and dismantlement of nuclear weapons; and surveillance and support of weapons in stockpile. We also perform substantial work in programs that are closely associated with nuclear weapon research and development, including nuclear intelligence, nonproliferation, and treaty verification technologies.

We are, however, a multi-mission laboratory. Ten percent of our work supports DOE's responsibilities for environmental remediation and waste management, and another ten percent supports Department missions in energy science, research, and development. When appropriate, we also perform work for other government agencies, particularly the Department of Defense, in programs where our unique capabilities, built to support DOE's Defense Programs responsibilities, can be of value. Increasingly, we are being called on to support other federal agencies, such as the FBI and the National Institutes of Justice, in developing advanced technology for combating terrorism and criminal activity and to enhance the effectiveness of law enforcement. An example of our ability to support key national concerns is a walk-through explosives detection portal for airport screening, developed for the Federal Aviation Administration. It has achieved 1,000 times better sensitivity at lower cost

and reduced size, and could dramatically reduce the threat to civil aviation when transferred to operational use.

Major Topics Addressed in This Statement

My testimony today will largely be devoted to the stewardship of the nuclear weapons stockpile. The challenges of stockpile stewardship are formidable, particularly now that there are no new weapon designs in the offing and we are constrained from nuclear testing by treaty. In addition, there seems to be widespread indifference or opposition toward nuclear issues in policy circles today. But the nuclear weapons stockpile remains extremely important, and we take our responsibilities in this arena very seriously. We believe that the presence of nuclear weapons has changed the history of the world for the better. The awesome destructive power of nuclear weapons and the extreme difficulties in countering or protecting against their force has rendered the possibility of war between major nations extremely remote. The deterrence which nuclear weapons have provided for more than fifty years was the dominant factor preventing the Cold War from becoming "hot" and allowed the world to enjoy the most peaceful period of the century. The United States must depend on its stockpile of nuclear weapons to prevent major wars for the foreseeable future.

We in the nuclear weapon laboratories serve as the Nation's conscience for the technical integrity of that stockpile. It is our responsibility to maintain a safe and reliable stockpile over the long term and to bring difficult issues associated with that mission to your attention. The stockpile stewardship program faces several major challenges-some of which are urgent-which I will describe later in this statement. But first, I would like to report how the Department of Energy has assessed Sandia's performance over the past year, as well as discuss some of the contributions we and our parent company make to the community. Then I will describe some very significant achievements by Sandia in the area of stockpile stewardship and national security during the last year. I will also discuss some highlights of our current stockpile support work and report on our activities with the former Soviet Union (FSU).

Laboratory Performance

I am pleased to be able to report that, under Lockheed Martin's management, Sandia's overall performance rating by DOE for fiscal year 1996 resulted in the highest rating, "outstanding." This appraisal was based on a new performance-based approach, with objectives and measures in four areas: laboratory management, programmatic science and technology, operational support, and management and administration. As stated by DOE:

—Sandia is to be commended for the increase over fiscal year 1995 in the number of areas that received the highest rating of Outstanding. Specifically, in the programmatic performance area, which under the new process received a greater emphasis, representing 50 percent of the total appraisal, Sandia was rated Outstanding based on inputs from DOE AL and DOE Headquarters. We are pleased but not satisfied with our score, and we will work even harder in the current year to sustain this high rating and realize improvements in the few areas where performance can be enhanced.

We have also improved our relationships with industry and the community-a cultural change that I attribute to the emphasis Lockheed Martin places on being good corporate citizens through community involvement and partnering. We recently celebrated our one-thousandth technology assistance project under DOE's Small-Business Initiative, in which the Laboratories helped solve specific, short-term technical problems with small or medium-sized businesses. Lockheed Martin established a small not-for-profit corporation, independent of Sandia, called the Technology Ventures Corporation, to facilitate technology transfer from the Laboratories to industry. In the last four years, it has helped create 18 new businesses-almost all of them start-ups based on technology licensed from our laboratory-and nearly 600 new jobs.

In addition, Lockheed Martin has teamed up with Sandia on a number of initiatives to aid the local community and has encouraged greater involvement and support of charitable endeavors. From its own resources, it has generously supported quality-of-life projects in the community, such as the biological park and aquarium in Albuquerque, a mathematics and science academy, several scholarship programs, and a recent donation to the New Mexico Museum of Natural History and Science. In California, where Sandia also operates a major a laboratory facility, it has helped support the local women's shelter, a children's theater workshop, and science and math educational programs. In aggregate, Lockheed Martin's contributions to the community are on the order of several million dollars a year and represent a sizable portion of their operating fee.

SIGNIFICANT RECENT ACHIEVEMENTS

B61 Bomb Modification 11

For twenty years we have known that there was a need to replace the B53 thermonuclear bomb with a system equipped with modern surety features. Yet, replacement was repeatedly postponed. Today, I am very pleased to report that we have begun the replacement of the B53 without designing a new weapon and are bringing the replacement on-line in record time with only a very modest budget.

On November 20, 1996, Modification 11 of the B61 bomb passed its certification flight tests. All electrical and mechanical interfaces performed as expected. In December, four complete retrofit kits were delivered to the Air Force, two weeks ahead of schedule. This delivery met the milestone to support Mod. 11 conversions in the field by a joint DOE/DOD team in January. The B61 Mod. 11 has been accepted as a "limited stockpile item" pending additional tests during 1997.

Work on the B61–11 had been authorized in August 1995, with a requested delivery date of December 31, 1996. This schedule required one of the most efficient development efforts in our laboratory's history. The retrofit involved repackaging the B61–7 into a new, one-piece, earth-penetrating steel case designed by Sandia.

The Mod. 11 will now permit us to retire the B53, which is a 35-year-old weapon, and provide the operational military with a safer, more secure, and flexible system. This program establishes one route to keeping the stockpile modern.

World Record in Pulsed Power

We have a responsibility, in accordance with DOD requirements, to certify the survivability of weapon systems in radiation environments. In the absence of nuclear testing, we must rely on aboveground experimental facilities which we are developing, along with more sophisticated computational models and techniques, for predicting the effects of radiation on electronics and materials.

We are making good progress toward a driver for a high-yield laboratory microfusion capability that can support both the weapon effects and weapons physics concerns associated with stockpile stewardship at relatively low cost. Sandia's Saturn and PBFA-Z accelerators, using Z-pinch technology, are producing record x-ray outputs. Last fall, PBFA-Z achieved an x-ray power output level of 160 trillion watts, releasing 1.8 million joules of x-ray energy. This output doubled the previous record for x-ray power and quadrupled the record x-ray energy level which had been achieved on Saturn just last spring.

For many years, our long-range plans have proposed the construction of a larger accelerator called Jupiter to further reduce our dependency on underground testing. Based on the extraordinary results of our recent experiments on PBFA-Z and our calculations, we now believe that a machine the size of Jupiter will probably not be necessary to achieve the experimental conditions required for stockpile stewardship. A smaller, less expensive accelerator called X–1 can do the job by creating a high-temperature, long-duration x-ray environment in a large-volume hohlraum. Presently, such a combination of characteristics is achievable only with a nuclear explosion. X–1 provides an extremely adaptable platform for weapon physics and weapon effects experiments.

While the site selection process for X–1 has not been initiated, the Nevada Test Site (NTS) is a primary candidate for locating X–1 for a number of reasons. As you know, NTS is required to maintain the capability to resume underground nuclear testing if international conditions should make that step necessary. However, as Edward Gibbon observed in his History of the Decline and Fall of the Roman Empire, "All that is human must retrograde if it does not advance." Our experimentalists, including those in Nevada who used to prepare the diagnostic instrumentation for tests, must be challenged with real work, or we cannot expect them to preserve their skills.

Fortunately, the instrumentation expertise required for measuring the outputs of underground nuclear tests is compatible with the diagnostic skills that will be required for operation of X–1. X–1 supports the readiness program for nuclear testing by exercising the skills of our experimentalists with real work. In addition, NTS is a convenient central location for a National facility that can be accessed by all three Defense Programs laboratories, and it has a well-developed infrastructure to support large-scale experimental facilities. It also has an Environmental Impact Statement (EIS) in place that permits experimentation with the radioactive products which will be generated by microfusion outputs.

World Record in Computing

In December, Sandia and the Intel Corporation shattered the world computational speed record by sustaining over one trillion floating-point operations per second (one

teraflop). This accomplishment was recently characterized by Defense Programs' Deputy Assistant Secretary for Strategic Computing and Simulation as "the single biggest computer science achievement in two decades." The event brought the speed record home to the United States again, following operation of a Japanese computer which had bested the previous U.S. performance. This work was performed under DOE's Accelerated Strategic Computing Initiative (ASCI) sponsored by the Assistant Secretary for Defense Programs. ASCI seeks to hasten the development of computers capable of 10's to 100's of teraflops. Machines of this size will be required for stockpile stewardship in the absence of nuclear testing and with reduced reliance on expensive physical testing. ASCI will also develop a new generation of full-physics, three-dimensional computer simulation tools to support simulation-based life-cycle engineering. These tools will be developed in collaboration with U.S. research universities and computing firms.

The new record was set on the ASCI Option Red supercomputer, designed by Intel and Sandia. When optimized, this machine will have ten times the memory (nearly 600 billion bytes) and ten times the speed (over 1.8 trillion operations per second) of the largest computers in use today. Now being installed at Sandia, it will immediately be used in safety, aging, and nuclear performance studies for real stockpile problems that we are dealing with. For example, we recently performed a series of calculations on Option Red to help us redesign neutron generators, which are critical components in nuclear weapons. Comparable calculations would be infeasible on the best commercial supercomputers, and the required experimental facilities to explore these regimes and to validate design performance are simply unavailable or unaffordable. The Option Red computer will be used by all three Defense Programs laboratories to develop and test the software models needed for science-based stockpile stewardship.

Synthetic Aperture Radar

Sandia has refined synthetic aperture radar (SAR) technology for a wide variety of treaty verification and nonproliferation applications. Synthetic aperture radar is a technique for integrating radar pulses to synthesize a high-resolution image. Although modern electronic navigational technology is good at determining aircraft position, small random movements of the aircraft can cause blurring and limit the practical resolution of SAR images, especially during bad weather.

One of the spectacular results of Sandia's SAR research is that we have developed a robust solution to this image-resolution problem. Our techniques now make it possible for aircraft-based SAR to create images of ground terrain with fidelity to one square foot-in any kind of weather! Our researchers have also developed a technique to use SAR data to produce very accurate topographical maps, either from aircraft or satellites. This work has profound implications for treaty verification and nonproliferation activities, as well as military operations. These results are truly a remarkable feat of engineering. I am very pleased that DOE has recognized Sandia electrical engineer Charles "Jack" Jakowatz with the 1996 Ernest O. Lawrence Award, one of DOE's most distinguished prizes, for his achievements in advancing the technology of synthetic aperture radar. Jack's work and his personal success remind us of a central strength of DOE and its national security laboratories: They have the ability to anticipate and develop future technology needs and options which often prove, over time, to be critical to our national defense capabilities.

Warhead Dismantlement

Several retired warhead systems have been successfully dismantled at the DOE Pantex Plant with support from Sandia and the other Defense Programs laboratories. The process of dismantling retired warheads is a complex and challenging undertaking. Substantial engineering support is required by the laboratories to design safe and environmentally sound procedures and special equipment for the work of the Pantex Plant. Research and development in support of dismantlement operations has involved materials scientists, experts in robotics and intelligent systems, design engineers, chemical engineers, production engineers, explosives experts, and many other specialists. It has been a teamwork effort for the Defense Programs laboratories and production agencies.

Nuclear Material Safeguards and Security

Sandia has made significant contributions to nuclear material safeguards and security. We recently completed a personnel and material tracking system called PAMTRAK to protect sensitive material. It integrates proximity badges, weight and motion sensors, and video cameras with a computer that reports attempts to steal or divert material. It can also communicate with a site's other security systems. The system can reduce radiation exposure to workers and save money by reducing the frequency at which materials must be inventoried. Sandia also completed-on time

and within budget-a prototype Safeguards Transporter (SGT). The SGT is the next-generation vehicle to carry high-value materials, not limited to nuclear weapons, with enhanced safety and security within the continental United States. The SGT may also find use in transporting chemical and biological toxins from DOD depots to final disposition. A successful nuclear explosive safety study was conducted in June 1996; final design review was completed in July 1996; and production has been authorized, with the first production unit (FPU) scheduled for December 1997.

To facilitate inspections, Sandia developed special nuclear material containers that can be periodically opened and resealed with induction brazing without excessive embrittlement or erosion of the container alloy. The initial terms of the U.S./Russian Agreement on Safe and Secure Transportation and Storage of Nuclear Weapon Materials through the Provision of Fissile Material Containers of June, 1992, were satisfied with the shipment of 10,000 AT–400R containers to Russia. Sandia supplied the technical interface, design, development, and testing on this product on behalf of the Defense Special Weapons Agency (DSWA), which produces the containers and ships them to Russia. Approximately 14,000 containers are planned for shipment next year.

Neutron Generator Production and Support

Sandia completed construction of its neutron generator manufacturing facility early in 1996, ahead of schedule and within budget. All shipments of recertified W76 neutron generators for the Navy have been completed as scheduled. Also, processing began for neutron generators returned from the field for re-acceptance and reuse. Sandia's neutron generator production responsibility is supported by the laboratory's research and development capabilities. We recently completed three-dimensional simulations and experimental correlation of the neutron generator standoff phenomenon for the Warhead Protection Program Pit Reuse Warhead. Simulations were completed using Sandia's PCTH hydrodynamic code on our Intel Paragon supercomputer. Experimental data were acquired from two primary hydrodynamic implosion tests conducted with Lawrence Livermore National Laboratory.

Shock histories were acquired by special instrumentation located in critical positions throughout the warhead electrical system and the neutron generators, providing data for code validation. Through the use of advanced visualization capabilities, Sandia's system designers, analysts, and shock physicists developed an in-depth understanding of the complex 3-D explosion through which the neutron generators must survive.

HIGHLIGHTS OF CURRENT STOCKPILE SUPPORT WORK

Bomb Impact Optimization System (BIOS) Exploratory Program Sandia is largely responsible to the Department of Energy for all non-nuclear aspects of nuclear bomb design. Building on the success of the B61–11, we are examining changes to other B61 designs to add additional value to these systems for our military customers. One such effort is the Bomb Impact Optimization System (BIOS) program, in which Sandia is investigating the feasibility of modifying a B61 payload for use in a guided glide bomb for aircraft delivery against defended target complexes. This effort includes analysis, design, model fabrication and testing, and ground and flight testing of a functional prototype.

This year, the BIOS program proved the effectiveness of concurrent engineering approaches when, for the first time at Sandia, the nose tip for the BIOS prototype was taken from concept to inspected, accepted flight component by means of a completely paperless process. The polycarbonate nose tip for the BIOS flight test program is a very complex shape requiring five-axis machining capability; yet, drawings were neither created nor needed. Solid models of the part were developed as computer files which were directly compatible with software for finite element analysis, numerically controlled machining, and even inspection. The process is proving to be so flexible and efficient that refinements to the part will be possible even as it is being machined, with no significant downtime.

Quality Improvement Program for the B83 Bomb.—We are nearing completion on a quality improvement program for the B83 strategic bomb, which will extend the service life of this weapon. The third major milestone of the B83 Quality Improvement Program (QIP) was achieved when a B83–1 equipped with Alteration 750 was produced at Pantex and accepted by DOE in March 1996. Alt. 750 incorporates a dual-channel common radar into the B83–1 bomb. This unit was the first B83 bomb produced to include all the component improvements from the quality improvement program. Sandia engineers worked closely with production engineers at Pantex and Allied-Signal/Federal Manufacturing and Technology to ensure the successful transition of Alt. 750 from development to production.

Enhanced Nuclear Detonation Safety.—Significant advances in enhanced nuclear detonation safety (ENDS) are being realized with the design and development of miniature firing set and stronglink subsystems. Prototype devices, ranging from complete firing systems to application-specific detonator safing devices, are being modeled and evaluated. Miniature machining, photolithographic (LIGA) semiconductor processes, and silicon micromachining are employed to fabricate these devices. These subsystems offer many opportunities to systems designers for miniaturization and for enhancing the safety, security, and reliability of retrofitted weapons.

Life-Extension Work

Much of our current stockpile activity can be characterized as life extension work. With no new weapon developments planned for the foreseeable future, we are required to support the weapons currently in stockpile well beyond their designed service lives.

A major undertaking in stockpile life extension work is the Dual Revalidation Program we are conducting with our sister Defense Programs laboratories, Los Alamos and Lawrence Livermore, under the joint sponsorship of the DOE Assistant Secretary for Defense Programs and the Assistant to the Secretary of Defense for Atomic Energy. This program examines and updates the design information for every weapon type in the stockpile, including its interface with the delivery system. Since we no longer have available the use of underground testing to validate design performance, the responsible laboratory team for each weapon will comprehensively examine the extant design data using the best design definition tools and methods available to us today. Any missing or incomplete elements in the documented design will be investigated and completed. The revised design data package of drawings, specifications, computer codes, and other documentation will then be given to a design team from a different laboratory for their critical review. In this way, two independent design teams will evaluate the design data package for each weapon in the enduring stockpile and ensure that it is complete and current with modern engineering standards, including the new computational engineering methods.

The ongoing stockpile activities I have described here are part of our enduring responsibilities in stockpile stewardship and management. As you can see, Sandia's tasks require constant engineering support using exceptional and unique personnel and equipment.

ACTIVITIES WITH THE FORMER SOVIET UNION (FSU)

Since the early 1970's, Sandia has been the principal DOE laboratory responsible for developing technology, systems, and standards to protect nuclear weapons and materials at DOE facilities and during transportation. In particular, work at 72 facilities in the United States involved the actual implementation of protection systems. In addition to this DOE mission, Sandia has worked on protection of nuclear material and weapons at numerous facilities in 37 other countries.

Since the breakup of the Soviet Union in 1991, the United States government-in particular, the Department of Energy national laboratories such as Sandia-have been working cooperatively with scientists and engineers in various institutes, laboratories, and other organizations within the countries of the former Soviet Union (FSU) to accelerate progress toward a common goal: to reduce the risk of nuclear weapon proliferation, including such threats as theft, diversion, and unauthorized possession of nuclear materials.

Our International Security Program has worked toward this goal by supporting numerous projects in the FSU that help achieve the protection and security of nuclear material and facilities. Additionally, the cooperative interactions help to encourage the dismantlement of all types of weapons of mass destruction, to advance nonproliferation activities, to assist the FSU states in converting their defense-oriented capabilities to civilian, market-driven enterprises, and finally, to improve Western access to the world-class science and technology that exists within the FSU.

A major goal of the International Security Program at Sandia is to achieve worldwide protection and control of nuclear materials and weapons. One major step toward realizing this goal is our work with the former Soviet Union on Material Protection, Control, and Accounting (MPC&A), discussed in detail below. In addition, other projects are underway, which contribute to this goal: Initiatives for Proliferation Prevention Program (IPP); Lab-to-Lab; Safe and Secure Dismantlement (SSD); and Safety and Security Technology.

Material Protection, Control, and Accounting (MPC&A)

The MPC&A program for the former Soviet Union has two primary objectives.

—Reduce the threat of nuclear proliferation by cooperating with Russia, the newly independent states (NIS), and the Baltic States to improve MPC&A for all weapon-usable nuclear material in forms other than nuclear weapons.

—Encourage the development of a technology-based nuclear safeguards culture and the infrastructure to sustain such a culture in Russia, the NIS, and the Baltic States.

We have focused heavily on the first objective in the early phases of the program. We have had success at many FSU sites in jointly developing MPC&A plans, coordinating training workshops, improving existing MPC&A systems, and designing and installing several new MPC&A systems. We now have work underway at approximately 44 sites in the FSU. In Russia, we are engaged with sites ranging from the MINATOM Civilian Complex to the Naval Nuclear Fuel Sector and the MINATOM Defense Complex.

We also have work underway to address the second program objective, to make an impact on the attitudes toward safeguards practices and to foster the development of a sustainable, technology-based, nuclear safeguards culture.

Last year, Sandia had a lead role in completing physical protection upgrades and demonstrations of major technical importance in eight of the 44 selected facilities in the FSU. For example, work was completed on physical protection upgrades to a facility at Elektrostal and at the Kurchatov central storage facility, both in Russia.

This year, upgrades have been completed in the five republics of Belarus, Georgia, Uzbekistan, Latvia, and Lithuania. All these states (except Lithuania) have nuclear research facilities that possess proliferation-sensitive nuclear material. Upgrade activities at these nuclear research facilities have included installation of intrusion detection sensors, video assessment cameras, central alarm stations, and hardening of nuclear material storage areas.

Lithuania is the site of the Ignalina Nuclear Power Plant, which has two 1,500-megawatt power reactors similar to those at Chernobyl. Work at Ignalina has included improvements to a central alarm station and vehicle access portal. Personnel have received training on physical protection concepts, system operation, and maintenance. The MPC&A work there has included collaboration with other national laboratories and with experts from other nations, although Sandia performs the lead role in physical protection.

Dedication ceremonies to commemorate completion of the physical protection upgrades at these facilities have been held and were well attended by local government officials and the appropriate U.S. ambassadors. Minor follow-on activities for this fiscal year are expected to include supplemental training and assistance in developing operational procedures and evaluations.

Initiatives for Proliferation Prevention (IPP).—The Initiatives for Proliferation Prevention program (formerly the Industrial Partnership Program) provides a mechanism for scientists and engineers who have been supporting research and development on weapons of mass destruction in the newly independent states of the former Soviet Union to build careers in the burgeoning Russian civilian workplace. The program makes use of the capabilities resident in DOE's national laboratories and makes new technologies available for commercialization by U.S. and Russian industry. Sandia has 70 projects totaling $5.5 million with over 40 participating institutions in the former Soviet Union. Forty-four have been completed, 26 are still active, and proposals for an additional 20 are awaiting approval. In addition, eight cooperative R&D agreements (CRADAs) with $4 million of DOE funds have been approved.

Lab-to-Lab Programs

Lab-to-lab projects are science-driven, small R&D collaborations that are closely coupled to Sandia projects. A broad range of science and technology is involved, including nuclear power safety, environmental technologies, safety and risk assessment, innovative materials development, lasers, pulsed power, medical technologies, nonproliferation research, manufacturing technologies, energy, computation, and basic science topics.

This effort is less formal than many other programs between the United States and former Soviet states. Since there are no bilateral agreements, implementation and progress can be achieved rapidly. In fact, it is this relatively quick return on our investment that is one of the most important positive features of the Lab-to-Lab program. Begun in 1992, it has served as a model for many other efforts, including the IPP projects and the MPC&A program mentioned above. Although less bureaucratically constrained than many other programs, all Lab-to-Lab projects are conducted with DOE approval and full coordination with the Department of State. They also comply with all export control regulations and other relevant restrictions.

The individual projects included under this program emphasize science and technology and are usually of relatively small monetary value. The majority of these

projects are conducted with Arzamas-16, Chelyabinsk-70, Kurchatov Institute, and Eleron, and involve such topics as pulsed power, computation, innovative materials development, and various medical technologies. They tend to have a strong linkage to existing Sandia projects and thus promote individual contacts and collaboration with a minimum of attendant bureaucracy. This encourages long-term association with our peers in the FSU institutes and expanded scientific and technological exchange, and furthers our efforts in nonproliferation.

Safe and Secure Dismantlement (SSD).—Sandia receives funding and authority for specific SSD projects from the Department of Defense through the Department of Energy. Under this arrangement, we have provided various types of hardware and technical expertise related to: modifications to Russian nuclear-weapons-transporting railcars to enhance their safety and security; fissile material storage containers and storage facilities; flexible armor blankets to protect warheads from small-arms impacts; and different types of accident response equipment, such as the Portable Integrated Video System (PIVS). These projects will assist the Russian Federation by providing improved safety and security for their nuclear weapons and components.

Safety and Security Technology.—Another important element of our efforts in the FSU relates to research projects in the broad area of safety and security technology. A significant number of the lab-to-lab contracts signed with the Russian nuclear weapon institutes [Arzamas-16 (VNIIEF), Chelyabinsk-70 (VNIITF), and the Institute of Automatics (VNIIA)] are safety and security projects.

It is in the mutual interest of the United States and Russia to share safety and security information that could reduce the risks and consequences of unintended actions with nuclear warheads and fissile material. Therefore, a government-to-government agreement that allows the controlled exchange of unclassified information in the field of nuclear warhead and fissile material safety and security between authorized representatives of the United States and the Russian Federation was signed by Secretary O'Leary and Minister Mikhailov. This program complements Department of Defense Nunn-Lugar work. The overall objective of the program is to increase the safety and security of nuclear warheads and fissile materials both in Russia and the United States through the coordinated exchange of technical information.

Current safety and security projects relate mostly to safety, with some efforts relating to human factors engineering and transportation security systems. They all involve research that affects design, analysis, testing, and experimentation relevant to safety and security issues associated with events that can cause major consequences to the public (e.g., nuclear contamination or loss of life), but with low assessed probability of occurrence. Examples of specific projects include research on:

—the dispersal effects of surrogate radioactive materials,
—crash and fire effects to aircraft transporting hazardous materials,
—bullet and projectile penetrations through shipping containers,
—rail car crashes and fires as well as other accident data for rail and air transportation,
—risk criteria for operations associated with hazardous materials,
—probabilistic risk assessment methodology for high-consequence but low-probability events,
—analysis and tests of lightning hazard effects, and the design of containers that withstand explosive detonations,
—security systems for transportation tracking and monitoring, and
—human factors engineering for hazardous systems.

ISSUES IN THE STOCKPILE STEWARDSHIP PROGRAM

Maintaining Confidence in an Aging Stockpile

One of the major long-term challenges we face is how to ensure the reliability of an aging stockpile. We oversee the stockpile to ensure that weapons continue to be reliable, that they are safe, and that they are upgraded as necessary to maintain their capabilities until they are retired. Unfortunately, we do not possess sufficient data on how reliability declines as systems get older than about twenty years. However, it is now our daunting task to ensure that systems remain reliable and safe for decades beyond their planned service lives.

To do this job, we must scientifically understand the parameters of aging in electronics, materials, and structures in order to both anticipate failure paths and to provide for timely upgrades, replacements, and rebuilds. We are vigorously exploring ways of leveraging science to help meet our stockpile obligations in this regard.

The age, size, and structure of the stockpile have undergone significant changes over the past few years, with important implications for maintaining the deterrent.

With no new production planned, the average age of deployed stockpile weapons will inexorably increase. In addition, the stockpile will be much smaller at START II levels, making each of the remaining weapons more important to deterrence.

In the past, the stockpile consisted of many weapons of many different weapon types. The size of the stockpile provided a substantial base from which to gather surveillance data. And the diversity of the stockpile provided an array of alternatives in the event of a problem with a particular weapon type. Less diversity in the stockpile raises the risk that a single repeated flaw, a "common-mode failure," could compromise a significant portion of the deterrent. Moreover, today's weapon production complex has less capacity to rapidly correct a common-mode failure that might occur. The production complex also urgently needs modernization. These factors narrow the margin of error that can be tolerated in the remaining weapons and drive the need for much tighter stockpile surveillance.

Sandia is addressing these concerns through several initiatives, including an Enhanced Surveillance Program (ESP), a program of fundamental research in materials aging, the study of the effects of aging in components and subsystems, and our augmentation of the computational resources needed to model and predict the effects of aging without resorting to destructive testing from the increasingly limited stockpile base.

The Enhanced Surveillance Program is proceeding along three paths. First, by accumulating data from both accelerated aging experiments and dismantled weapons, Sandia is improving the capability to detect, measure, and predict the time-dependent phenomena of aging in materials and components. Certain phenomena serve as signatures that reveal degradation in materials and components. Thus, we are advancing our ability to use these "signatures" in assessing and even predicting aging degradation.

Along a second path, we are integrating our empirical and theoretical work in materials science as a means of further accelerating the development of computational models of the actual behavior of aging components and subsystems. With our proposed Model Validation and System Certification Test Center (MVSCTC), we are pursuing a facilities and infrastructure modernization effort specifically designed to support the integration of empirical testing and theoretical understanding through computation.

Finally, we are exploring sensors that can be built into weapons to constantly and automatically monitor the presence of the aforementioned "signatures" of aging and degradation. With the goal of supporting a full system demonstration, we are developing communications techniques that will allow us to contact and monitor such sensors without dismantling or otherwise disrupting the weapon.

Stockpile Confidence Under the Test Ban

Two years ago, the White House consulted with the directors of the Nation's three nuclear weapons laboratories (Los Alamos, Lawrence Livermore, and Sandia) as the President considered whether to pursue a comprehensive test ban treaty. We told the President that we felt we could meet the challenge of maintaining the Nation's nuclear deterrent under a comprehensive test ban if we pursued a long-range program of science-based stockpile stewardship. We said that we could not guarantee that this challenge would be met, but we pledged our very best efforts to this end. We emphasized that a continuing strong commitment to a science-based stockpile stewardship program would be essential if we were to have a chance to succeed. This commitment requires sufficient funds to support the core program for maintaining the stockpile as well as an investment in special facilities required to perform our work in the absence of underground nuclear tests.

There are those who regard the nearly $4 billion budget for nuclear weapons as excessive and unwarranted. However, the costs of stockpile stewardship are not a linear function of stockpile size. A threshold capability will be needed to support the stockpile as long as it numbers in thousands, especially with the sophistication and demand for reliability that is associated with the systems upon which deterrence rests today. I believe we are near that threshold now, especially in light of the many closures and changes that have occurred in recent years. It is true that the stockpile is substantially smaller than it was ten years ago; but critics fail to calculate the avoided cost that would have been required to support the larger and more diverse stockpile of the past. A conservative analysis puts that cost at 50 percent or more larger than today, for a budget of at least $6 billion, even without considering the additional costs of science-based stockpile stewardship arising from the test ban.

We are often asked about the "core" activities within the weapons program. Indeed, some try to portray the core as a "sandbox" for laboratory scientists and engineers to play in-a characterization that is both incorrect and unfortunate. Rather, the core is the at the heart of the historical bond between the laboratories and the

government in carrying out nuclear weapons research and development efforts. Through the core, our laboratories are accountable to the government to anticipate what the technical needs of the weapons program will be years in advance. The concept of core funding is what has enabled us to readjust priorities to meet urgent needs that may arise, such as was done for the B61–11, without coming back to the government for every extra dollar that is needed. The core is at the heart of a system that makes everyone at Sandia feel a personal responsibility and obligation for the performance of the stockpile, now and in the future, while never marginalizing the needs of our military customers. The core has also provided the support in which the remarkable synthetic aperture radar work, discussed earlier, could be conceived and realized. The core enabled past investments which have made it possible today for ASCI, enhanced surveillance, DAHRT, NIF, X–1, AHF, and other initiatives, to be realized in this unprecedented period where underground testing is no longer available.

Today, I believe we face a near crisis in the core weapons program. Last year, our laboratory experienced a significant loss in funding for our core nuclear-weapon efforts, even after the plus-up in funding provided by Congress. A number of factors contributed to the reduction, and over the past two years we have had to eliminate 1,100 jobs across the laboratory. This year, we may again face the likelihood of more cuts, as a result of the laboratory allocations, particularly through continued erosion of the core program budgets as moneys are increasingly directed toward initiatives intended to address the absence of nuclear testing.

At Sandia this year we have the fewest number of scientists and engineers in the weapons program than at any time since 1952. Yet, even with our greater understanding of the physics and technology of nuclear weapons, the current generation of weapons within the stockpile is extraordinarily more complex as compared with those of 1952. The deep cuts we have experienced over the past six years have resulted in the retirement of our most experienced experts. These reductions have also driven off some of those early in their careers, and they have limited our ability to hire new talent. We are not at all well-positioned to take further cuts at this time without losing essential "muscle" to carry out our important obligations in R&D and stockpile support. Our complex work is unique-there is no other quarter where we can obtain the experience base to carry out these weapon responsibilities.

Several special facilities needed for the Defense Programs laboratories are also requested, including DHART (Dual-Axis Radiographic Hydrotest facility), NIF (National Ignition Facility), X–1 Advanced Radiation Source, AHF (Advanced Hydrotest Facility), and ASCI (Accelerated Strategic Computing Initiative). These represent the first stage in a process of addressing to what extent we can replace the role of underground nuclear testing with laboratory experiments. I expect that as the process of science-based stockpile stewardship evolves, other facilities and upgrades will be conceived in the decades ahead to better simulate the environment and processes that occur during a nuclear explosion and do a better job of maintaining the science and technology of stockpile stewardship without testing.

The essential question for managing the total program under the constraints of a substantially reduced budget (the program was cut in half over the previous six years) will be how to best balance the needs to support and maintain the stockpile itself-to maintain the essential skills needed to address the problems that can arise-while also creating new facilities to partially substitute for the loss of nuclear testing. I believe the present course we are pursuing-a continual reduction of an already depleted core weapons program-will be particularly destructive to the ability of Sandia to meet the challenge we promised the White House that we would undertake. Having served for much of my early career in leading the nuclear weapons efforts at one of the nuclear physics design laboratories, I can also express my doubt that the present funding can sustain their necessary core weapons capabilities while also financing their needed efforts in new facility initiatives. If no additional funds become available, I believe that it will be necessary to readdress the funding allocation to achieve a better balance between core and initiatives.

In the view of our laboratory, the initiative to enhance supercomputing capabilities (ASCI, as described above) is not truly a "new initiative." Computational simulation has always been fundamental to carrying out our work effectively and economically, and we have consistently pursued advances in this field from our core program. Indeed, during the 1970's and early 80's, computer acquisition costs represented nearly the same share of our budget as they do today. The recent success we achieved in creating the first teraflop computer is the fruit that our core program funded over many years. It is vital that we continue to be able to model and simulate computationally the performance of all our systems and subsystems, and that we advance this capability to the point where their performance and aging can be predicted on a scientific basis.

Non-nuclear Stockpile Assurance Testing

Stockpile evaluation activities involve both laboratory and flight tests of stockpiled weapons, as well as designing test equipment and monitoring test performances. Test results that identify deviations from weapon performance standards are thoroughly investigated and may result in repairs, retrofits, or recommendations for stockpile improvement programs.

Joint tests of weapons in their delivery modes are performed in cooperation with the Department of Defense. We continue to be concerned about budgetary constraints and other complications that affect the ability of the laboratories and the military services to support the joint DOE/DOD Stockpile Surveillance program. An example of our concerns is the possible Air Force ICBM strategic missile testing shortfalls that could impact the reliability and credibility of W62, W78, and W87 warheads. Developments that hamper the ICBM nuclear warhead surveillance program include: moving from multiple to single reentry vehicle configurations while constrained by the same number of missile flights, thus reducing reentry vehicle flight opportunities; possibly eliminating Peacekeeper flight tests; and a reluctance to combine reentry vehicle and warhead telemetry tests.

While this critical budget issue was solved last year (in great measure by the work of this committee) and flight support was reinstated for tactical nuclear bombs, a similar problem may be developing for all nuclear bombs, motivated by pressures to reduce national test range costs within a shrinking defense budget with many unmet needs. This is a long-term issue that must be continuously monitored.

My concern over these issues is based on Sandia's half century of test experience with nuclear bombs and warheads. We have sized our stockpile surveillance program to yield results within significant parameters. This requires us to test eleven warheads per year of each of the nine types currently included in the surveillance program. Generally, two to four flight tests of each type are conducted jointly with the military, and eight laboratory tests (for a total of eleven) are conducted by Sandia at the Pantex plant. From a study of historical bomb and warhead data, we find that approximately 22 percent of the defects discovered in all tests are flight-unique; that is, if we don't flight test we will likely not see that portion of defects within the weapon system. Given the stringent reliability requirements that nuclear weapons must meet, we have determined that the minimum requirement for flight tests is in the range of two to four per year per weapon type.

We believe that a nuclear warhead assurance program that does not perform flight tests, or performs fewer flight tests than the minimum required, would lack a credible basis for evaluating system reliability. The credibility of reliability testing diminishes as the number of flight tests decreases. Erosion of credibility in our reliability test program is serious, and would directly undercut the maintenance of confidence in the stockpile as well as the reliability prediction that STRATCOM uses to develop our deterrent plans. I urge you to assure that funding to support the joint flight test capabilities is maintained at an adequate level.

Maintaining Design and Production Capabilities

All weapons now in stockpile will reach the end of their design lifetimes over the next two decades. With the passage of time, many materials and methods that were used in the original production runs are no longer available. In some cases, original materials and technologies have become commercially obsolete. We cannot simply reproduce replica components of outdated technologies and designs. Maintaining the ability to design, develop, certify, and either produce or procure updated materials and components is vital to ensuring the long-term reliability of the stockpile.

Most components of nuclear weapons are subject to normal aging and must eventually be replaced. The requirement to replace these weapons or their components will create a backlog of work that will need to be addressed early in the next century.

Sandia has used a systematic replacement planning tool known as the Stockpile Block Upgrade Plan. While primarily driven by the need to replace limited-life components, the Stockpile Block Upgrade approach also upgraded the technological currency of components and helped maintain a consistent production workload free from peaks and valleys. The original Stockpile Block Upgrade Plan has evolved into the broader Stockpile Life Extension Program (SLEP) which DOE is now using for limited-life component exchanges and systematic upgrades in blocks of related subsystems.

It should be emphasized that the nuclear weapons program requires an intimate relationship between the laboratories, where the technology is developed, and the production plants that manufacture nuclear weapons. Sandia works closely with DOE's production agencies. We design or specify nearly all of the non-nuclear components of nuclear warheads. We support the production engineers at Allied Signal,

Kansas City Division, who are responsible for manufacturing many of our components, and the engineers at the Pantex Plant in Amarillo, where warheads and bombs are assembled or disassembled. We also produce a limited number of two kinds of components in-house, as a result of plant closures in the DOE complex. We have the additional assignment for manufacturing development engineering of twelve other weapon component technologies, for which we are DOE's production agent. We are working closely with commercial industry to develop new suppliers for these components.

For a variety of security, business, or technical reasons, it is impractical to rely on industry for all the components required for nuclear weapons. This is particularly true for components that are produced in low quantities and are unique to nuclear weapons. Consequently, DOE must retain an in-house manufacturing capability for some components. To most effectively use these capabilities, new or improved processes and materials are being developed to enhance efficiency and minimize wastes, environmental impacts, and cost, and provide greater worker safety.

In my view, we will someday have to supplant our old weapons with replacement systems; we cannot extend their service lives indefinitely. But replacing systems with exact replicas would not be technologically feasible, cost-effective, or sensible. New designs for components and subsystems will continue to be needed, and that requirement will demand that we maintain all the original competencies necessary for component designs, as well as contemporary capabilities in advancing technology. This can be easily understood by the fact that electronic components that are available today bear little resemblance to those used in weapons that are even a few years old. For example, a substantial portion of the components within the Trident II warhead, our most modern system, have already become "sunset" technologies (i.e., they are no longer available from suppliers).

Similarly, scientists and engineers must advance their thinking as the state-of-the-art in technology advances. Those who suggest that we can simply remanufacture warheads without any changes have little understanding of the impossibility of such a quest. While the portions which contain special nuclear materials are unlikely to be changed from designs previously tested and proven, the balance of the weapons (which is predominately Sandia's responsibility) can and should be modernized to achieve even higher levels of performance in safety, security, use control, and overall system reliability.

The engineers and scientists who must perform the design and production engineering for nuclear weapons in the next century will not have had the benefit of experience on full-scale weapon development programs. We must find ways to qualify these people in the future. They need to work on real systems. We cannot expect our engineers to acquire critical design skills merely by performing piecemeal component replacement work and development simulations. They have to design whole systems with real deliverables to fully develop their capabilities.

Ideally, we would like to train our junior weapon design engineers alongside experienced engineers, but this will not be possible during a decades-long hiatus of no weapon developments. In the past, Congress has noted its concern whether the key skills and essential knowledge for continuing a strong nuclear weapons program are being maintained. I want you to know that Sandia has assigned this area a very high priority. More than three years ago, Sandia began a program in knowledge preservation as one element of that stewardship. We have now recorded a few thousand hours of experience from weapons experts, individually and in teams, who have retired within the past few years or who are planning to retire soon. These records are maintained in a classified information network formatted to provide instant query and retrieval.

We have also developed an extensive set of course offerings unique to nuclear weapons science and engineering, and we are developing a formal process this year for training and certifying tomorrow's experts. When you consider that forty years is the extent of an average career, our people and their expertise are the most limited-life components of the stockpile stewardship effort.

Supply of Radiation-Hardened Microelectronics

This committee should be aware of a serious problem we are facing with respect to assuring the supply of radiation-hardened microelectronic components in the long term. This is a critically important issue in stockpile stewardship.

Microelectronic circuits can be damaged or destroyed by radiation. It is for this reason that electronic components in satellites, for example, are specially designed to withstand the effects of cosmic radiation. Circuits in nuclear weapons must be hardened against the much more intense radiation fluxes that would be encountered in proximity to nuclear blasts of a nuclear exchange. This design criterion has not gone away with the end of the Cold War. STRATCOM has revalidated its hardening

requirements for strategic systems. As you know, Russia recently abandoned its previously declared no-first-use policy for its nuclear weapons.

Similarly, radiation-hardened microelectronic components are important for many tactical, non-nuclear weapon systems that could encounter radiation under battle conditions. Consequently, the capability to design and produce "rad-hard" integrated circuits is of great importance to our Nation's defense.

Unfortunately, commercial, off-the-shelf microelectronic technologies are not designed to withstand radiation, and in most cases they cannot be shielded effectively to protect them from damage. In fact, as commercial integrated circuits (ICs) evolve toward ever-smaller feature sizes, they will become even less suitable for defense or space applications that may be susceptible to radiation.

The problem is economic: The market for radiation-hardened integrated circuits has become so small relative to the burgeoning market for commercial ICs that it holds little interest for industry. Less than one tenth of one percent of integrated-circuit production is rad-hard. The requirement for radiation-resistant integrated circuits is expected to remain fairly constant at roughly $100 million to $150 million per year for the next decade. This is a drop in the bucket in contrast to the market for commercial integrated circuits, which is forecast by the Semiconductor Industry Association to exceed $300 billion by 2000!

Production of radiation-hardened integrated circuits requires special designs and strictly controlled, nonstandard manufacturing. Most integrated-circuit manufacturers are simply not interested in diverting highly profitable resources to nonstandard and limited-volume design and production of radiation-hardened microelectronics.

This reluctance is reflected in the declining number of vendors responding to Sandia's requests for quotation (RFQs) over the past eight years. Motorola, LSI Logic, United Technologies, RCA, GE, AT&T, and Texas Instruments have quit the rad-hard digital IC business. Only Honeywell and Lockheed Martin Federal Systems (formerly Loral) remain. Only one vendor of rad-hard non-volatile memories remains: Grumman-Northrop. No vendors exist for new designs for rad-hard analog circuits needed to interface sensors and actuators to digital controllers.

The government's fallback position for production of critical radiation-hardened integrated circuits for nuclear weapons is DOE's Microelectronics Development Laboratory at Sandia National Laboratories. For more than two decades, Sandia has conducted research to advance rad-hard IC technology. As a general rule, the results of this research have been made available to the private sector to support industrial production of government IC requirements. In addition, Sandia has produced rad-hard microelectronics parts in-house for special government applications where production lots were too small to be economic for industry.

DOE and Sandia have proposed a National Defense Electronics Partnership with DOD for the purpose of preserving the R&D base and industrial production capability for radiation-hardened integrated circuits. It is too early to tell whether this proposal will come to fruition. In any case, it is important to adequately maintain the rad-hard capability at Sandia. Bear in mind that radiation-hardened microelectronics must also constantly play catch-up with the rapid pace of development in commercial microelectronic components (see the discussion in the previous section about the necessity to modernize components). This task requires a robust R&D capability and a modest production capability in the national laboratory system, and Sandia is the only place where such capability exists. We continue to work with DOE and DOD to ensure that a minimum level of funding is provided to maintain this capability.

SUMMARY AND CONCLUSION

I have described some very significant achievements that Sandia has realized during the last year, particularly our world records in pulsed power and computing. However, our overarching mission is to support the Nation's nuclear weapons stockpile, both in its current requirements and for the long term. Our scientific achievements are always performed with that mission in mind, and not for their own sake.

I have also described some of the highlights of our ongoing stockpile stewardship work and our interactions with the former Soviet Union. This work stems from the engineering technology base that maintains and ensures the safety, security, and long-term reliability of the enduring stockpile. As we augment the Stockpile Stewardship program with new capabilities and facilities for science-based stewardship, it will be important not to diminish the engineering technology base that supports component design and production now and for the future.

I discussed a number of the major issues that we face as significant challenges. Sandia's cradle-to-grave responsibilities require stable funding for a robust engineering technology base, a modern and efficient laboratory infrastructure, and the

essential human talent that can maintain competency in both established and emerging weapon technologies.

While I support the approach and structure of the Science-Based Stockpile Stewardship Plan, the currently proposed budget presents significant challenges for our laboratory. I believe that with proper funding, the Science-Based Stockpile Stewardship Plan is the route to success in maintaining a stockpile whose quality is second to none. However, without proper funding, we will ultimately face a tough choice: Shall we adequately support the people and skills that are essential to sustained stewardship, or those that are required for developing and operating the new initiatives in science-based stockpile stewardship?

It would be regrettable to have to once again rebalance the objectives in the overall program between the core weapons activities and the new initiatives to find substitutes for testing; but a tradeoff between preserving irreplaceable expertise or "bricks and mortar" for the future would indeed be a Hobson's choice. The Stockpile Stewardship Program must be prudently managed to provide for our technology base needs; and we must also find a way to fund the strategic investments required for science-based stockpile stewardship at a pace that will bring them into useful service to support the program before we face a crisis within a critical weapon system in the existing stockpile. I fear that time is not on our side.

LOWER MISSISSIPPI RIVER VALLEY FLOOD CONTROL AND NAVIGATION PROJECTS

PREPARED STATEMENT OF B. REID DETCHON, EXECUTIVE DIRECTOR, BIOMASS ENERGY ADVOCATES

SUMMARY

Biomass energy development offers enormous potential benefits for the Nation—abundant renewable energy produced in America; reduced dependence on imported oil; a smaller trade deficit; more jobs in rural America; more income for farmers; improved soil and water quality; and reduced greenhouse gas emissions. Federal investment in research and development has advanced biomass energy technologies to the point of commercialization. They should be supported most strongly now, as they get ready to compete in the marketplace.

Mr. Chairman and members of the Committee, this testimony is presented by the Biomass Energy Advocates on behalf of individuals and organizations in the environmental, agricultural, and renewable energy communities and is specifically endorsed by the following groups: Natural Resources Defense Council, National Association of Conservation Districts, Union of Concerned Scientists, Citizen Action, Clean Fuels Development Coalition, Common Purpose for Clean Energy, Renewable Fuels Association, Sustainable New-Wealth Industries, American Energy Crop Association, Americans for Clean Energy, and Consortium for Plant Biotechnology Research.

Biomass is the secret energy resource of the United States—based on the productivity of our land and our farmers and foresters. It is a resource that we continually waste, in staggering quantities, while we mine the earth and scour the globe for finite natural resources to burn as fuel.

Biomass energy is as old as the wood in an ancient campfire. It is the largest renewable energy resource in the U.S. other than hydropower, with 7,000 megawatts of generating capacity (mostly for cogeneration in the pulp and paper industry). Its potential is vast: The Department of Energy reports that it could provide as much as one third of the total U.S. demand for electric power and transportation fuels.

At a time when the United States is contemplating steps to reduce emissions of greenhouse gases, biomass energy is one of the most important options available. Although biomass gives off carbon dioxide as it is used, it absorbs that same CO_2 during the growing cycle and thus is carbon-neutral on a life-cycle basis. By way of contrast, fossil fuels pour carbon into our skies that was stored and buried by natural forces millions of years ago.

The future of biomass energy is emerging today in many different forms—including alfalfa stems and waste wood gasified for fuel cells and advanced turbines; fast-growing willows co-fired with coal in utility boilers; rice straw fermented into ethanol for transportation fuel.

Twenty years of investment in these technologies by the federal government has yielded major reductions in the cost of producing energy from biomass. For example, the cost of ethanol from cellulosic biomass (as opposed to starch crops like corn) has fallen from more than $4 to little more than $1 per gallon today, and further reduc-

tions—to 90 cents, 60 cents, some say even 35 cents—are possible. New power generation technologies similarly promise to cut the cost of electricity from biomass to 5 cents a kilowatt-hour or less.

Toward that end, investment in basic research and development remains vital and has attracted a very high level of cost sharing from the private sector through organizations such as the Consortium for Plant Biotechnology Research. This area should be continued and strengthened if we are to achieve the next level of cost reductions through new research breakthroughs.

The time has now come, however, to realize the payoff from these federal investments—the payoff in terms of energy, the environment, and the rural economy. The time has come to put these innovative technologies into production and into the marketplace, where the private sector can see them in action and decide whether they are worthy of adoption and replication.

The Department of Energy's fiscal year 1998 budget request for Biopower/Biofuels Energy Systems appropriately continues support for promising research opportunities, but its most important elements involve the cost-shared demonstration and validation at commercial scale of the research breakthroughs that have already been made.

The Biomass Power for Rural Development program, a collaboration between the Departments of Energy and Agriculture, made commitments last year, with your support, to three highly promising approaches, each of which has potentially far-reaching impacts:

—Growing highly productive, fast-growing willow crops—in a system more like farming than forestry—on underutilized New York farmland, for cofiring with coal in existing utility boilers. The benefits include reduced emissions of sulfur dioxide—a key acid rain precursor—in the nation's most sensitive region.

—As concerns grow about the environmental effects of utility deregulation—which may lead to greater use of older, less sophisticated coal-fired power plants—cofiring with biomass may be an important part of the answer. This approach, if widely adopted at even a 10 percent cofiring ratio, would lead to a rapid increase in the use of renewable energy at a truly modest cost.

—Using alfalfa stems for power production while converting the leaves into animal feed. Minnesota farmers are working with their state and local governments and with environmental and consumer groups to help Northern States Power fulfill a minimum biomass power requirement. This project promises to demonstrate large-scale biomass gasification in collaboration with conventional production agriculture.

—Large-scale cultivation of switchgrass for power production in Iowa and elsewhere in the Midwest, demonstrating the feasibility of using this fast-growing native perennial for energy. Switchgrass has exceptional environmental benefits in terms of soil erosion, water quality, and carbon fixation and is an approved cover crop under the Conservation Reserve Program. Switchgrass is also highly reactive, increasing boiler production efficiency when co-fired with coal, and enables even higher generation efficiency in conjunction with high-temperature fuel cell power plants.

It is critically important that the federal government develops these technologies in conjunction with industry—the ultimate customers. Toward that end, the Biomass Power for Rural Development program has brought together cross-cutting collaboratives of utilities, farm groups, and researchers. These projects, which could lead to significant rural economic development, have strong regional support politically and in the agricultural and environmental communities specifically. They will stimulate technological advances that will provide export opportunities in the global marketplace, create new jobs domestically, help solve waste disposal problems and improve the environment. The increase in funds requested for them next year is needed to keep the projects moving forward at an appropriate pace.

Equally important in the fiscal year 1998 budget is the support provided for commercial cost-shared validation of the technology to produce ethanol from cellulose.

Twenty years ago, the Department of Energy was created—in large part to reduce our dependence on foreign oil. If ended today, its performance on that mission would be judged a complete and utter failure. Our dependence on foreign oil is as great as it ever was and is rapidly rising, year by year. The biofuels program is our most promising energy supply option for reducing this dependence, and our investment in it, compared to the economic and military threat it addresses, is truly miniscule. As a nation, we spend four times as much on imported oil every day as we do on these alternatives every year.

The Administration's so-called "Car Talk" committee, formally known as the Policy Dialogue Advisory Committee to Develop Options for Reducing Greenhouse Gas Emissions from Personal Motor Vehicles, was unable to come together around a uni-

fied strategy to recommend to the President because of disagreements over the appropriate role of fuel economy standards. But on one point the committee did agree—the importance of liquid biofuels.

The Majority Report of the Car Talk committee found "a substantial consensus within the technical community regarding the strong potential of cellulosic biomass-based fuel options for greenhouse gas mitigation" and recommended a $100 million annual R&D budget for this topic alone. The dissenting report of the auto industry members similarly concluded that with "significant support for research," cellulosic biomass fuels could produce a "technological home run" on greenhouse gas reductions.

If used in fuel cells, which are rapidly nearing commercial readiness, these biofuels could replace virtually all of the gasoline we now use in this country for light-duty transportation.

Mr. Chairman and members of the Committee, the fiscal year 1998 budget request of $76.5 million for Biopower/Biofuels Energy Systems is a very small insurance premium against very large risks—against the risk that global warming is occurring; against the risk that we will face an interruption in our energy supplies; against the risk that we will have to send our sons and daughters once again to protect our access to the oil fields of the Persian Gulf. To benefit our environment, bolster our rural economy, and encourage the development of a major renewable energy resource in this country, we ask that you fully fund the budget request.

PREPARED STATEMENT OF GEORGE E. DUFFY, CHAIRMAN, GOVERNOR'S TASK FORCE ON MARITIME INDUSTRY

Mr. Chairman: I am George E. Duffy, Chairman of the Governor's Task Force on Maritime Industry. I am submitting this statement on behalf of the ports on the lower Mississippi River and the maritime interests related thereto of the State of Louisiana. I am enclosing supporting statements from Mr. Ron Brinson, President and CEO of the Port of New Orleans; Mr. Channing Hayden, President of the New Orleans Steamship Association; Captain John Levine, President of the Associated Branch Pilots; and Captain Mark Delesdernier, President of the Crescent River Port Pilots plus several other statements. In addition, I would like to ask that all of these statements be made a part of the record.

The Mississippi River from the Gulf of Mexico to Mile 232 AHP is a 45-foot deep channel. The District Engineer of the U. S. Army Corps of Engineers, New Orleans District recently released the preliminary Corps' cargo tonnage figures for consolidated ports of South Louisiana for 1995. These ports are those that make up the deep water ports on the lower Mississippi River from Baton Rouge to the Gulf of Mexico. A grand total of 438 million tons of foreign and domestic waterborne commerce moved on this 232 miles of the Mississippi River in 1995. The deepening of the Mississippi River several years ago certainly was a factor in the deep water ports on the lower Mississippi River improving their tonnage statistics. Thanks to Congress and the efforts of the New Orleans District, we feel that we now are in a more competitive position with import-export bulk ports of the world. That position of strength in trade is essential to our nation's very well-being when one considers that foreign trade has been, and continues to this day, a sustaining force behind our country's growth. Ninety-one percent of our foreign merchandise trade by volume—and two-thirds of it by value—moves in ships. With 21.1 percent of the nation's foreign waterborne commerce passing through the ports of Louisiana, the State of Louisiana has had a profound influence on employment, plant construction and access to worldwide markets.

We believe our Louisiana ports have a distinct advantage in access to foreign markets at competitive transportation costs. In order to handle the waterborne commerce, hundreds of barge lines serve our nation's inland waterways. In the lower Mississippi River region, over 300,000 barges pass through the Port of New Orleans annually, handling the waterborne commerce of the area. To carry the cargo between New Orleans and its trading partners throughout the world—serving, for example, more than 150 countries—approximately 6,000 vessels operated by more than 75 steamship lines, call at the ports on the lower Mississippi River in a year's time. These trading partners and percentages of trade are Europe (23.7 percent), Latin America (32.4 percent), Asia (32.1 percent), Africa (10.5 percent) and North America (1.3 percent).

It is undeniable that the New Orleans area plays a vital role in international commerce of this nation. In 1995, the lower Mississippi River (Baton Rouge to the Gulf of Mexico) handled 201 million tons of foreign waterborne commerce. Worth $35.0 billion, this cargo represented 18.6 percent of the nation's international waterborne

trade and 25.4 percent of all U. S. exports. Bulk cargo accounted for approximately 90 percent of this volume, primarily the result of tremendous grain, animal feed and oil seed exports and petroleum imports. More specifically, over 54.3 million tons of grain coming from 17 states and representing 49.3 percent of all U. S. grain exports entered the world market via the 10 grain elevators and midstream transfer capabilities on the lower Mississippi River. This same port complex received 55.5 million short tons of petroleum and petroleum products in 1995, approximately 13.8 percent of the U. S. waterborne imports of petroleum products.

Also in 1995, public and private facilities under the jurisdiction of the Board of Commissioners of the Port of New Orleans handled 67.5 million tons of foreign cargo worth $16.8 billion (included in lower Mississippi River statistics). Of this amount, general cargo tonnage totaled 10.5 million tons (major commodities include: iron and steel products, coffee, forest products, metalware, aluminum products and natural rubber). Although the volume of bulk cargo statistically dwarfs the amount of general cargo handled, the significance of the port in the movement of general cargo should not be overlooked. The Port of New Orleans consistently ranks in the top seven cargo ports in the country. Furthermore, per ton, general cargo is very valuable to the community as it produces a greater local economic benefit than does bulk cargo.

While the port's foreign market is worldwide, its domestic market is primarily mid-America, the heartland of the United States. This heartland region currently produces 60 percent of the nation's agricultural products, half of all of its manufactured goods, and 90 percent of the country's machinery and transportation equipment. Waterborne commerce from this region is projected to reach 800 million tons by the year 2000.

Essential to our national economy is the continued growth and development of the lower Mississippi River regional complex. Most major trading nations of the world have deep draft ports and are in the process of developing more. With the passage of the Water Resources Development Act of 1986, United States ports are on the way to becoming more competitive in the world marketplace.

By the end of December 1988, the Corps had completed the initial construction dredging of the 45-foot channel from the Gulf of Mexico to Mile 181 AHP, thereby capturing the majority of estimated benefits attributed to the deeper channel. In fact, nine of the 10 active grain elevators and our floating grain elevators that serve the vast mid-American, agricultural hinterland are reasonably assured of a minimum safe channel depth of 45-feet. Remaining yet for total first phase completion of the project are the project mitigation features. We understand that funds are currently available for the fiscal year 1997 work. We urge continued support for this effort which is part of approximately $15 million in payments to the State of Louisiana to construct a pipeline and pumping stations for delivering potable fresh water to communities affected by saltwater intrusion. The State of Louisiana signed the agreement in May, 1993 which relieves the Corps from the responsibility for barging fresh water to the parish every year. The Local Cooperation Agreement for phase two dredging of the river to 45 feet from Mile 181 to Mile 232 was signed in September, 1993 allowing construction to go forward. This important project was completed in December 1994. We urge the Corps to proceed with design studies for Phase III which will allow us to proceed with the further deepening of the river to the 55-foot authorized depth.

In 1995, the Port of Baton Rouge handled 836 million tons to retain its position as the fourth largest port in the nation. Most ports on the lower Mississippi River are dependent upon timely and adequate dredging of the Southwest Pass to provide access to the Gulf. Judging from past experiences with spring thaws bringing higher river stages and higher rates of siltation, and recognizing that Congress appropriated $48,155,000 in fiscal year 1997 under O&M General, we recommend that the Corps be funded to its full capability in fiscal year 1998 for Maintenance of the 45-foot project channel which provides deep draft access to the deep draft ports on the lower Mississippi River from Baton Rouge to the Gulf. This funding includes monies for both dredging and repairs to foreshore dikes, repairs to lateral dikes, jetty repairs. Revetment construction has reduced the number and size of available deep draft anchorages. To mitigate this, we recommend that the Corps be authorized to construct new anchorages and maintain new and existing anchorages to accommodate increased ship traffic under the O&M General appropriation.

We are equally concerned with maintaining adequate depths and channel widths in the Mississippi River-Gulf Outlet Channel that is responsible for 85 percent of all container cargo in the State of Louisiana; and generates an annual economic impact of well over a billion dollars. Shoaling caused by Tropical Storm Josephine in October 1996 demonstrated the vulnerability of this channel to coastal storm activity. The channel's project depth is 36 feet MLG; however, heavy shoaling during the

storm required the Bar Pilots to restrict draft to 30 feet for all deep draft vessels using this channel to reach the Port of New Orleans. We commend the New Orleans District for initiating five emergency dredging contracts and using the government Dredge MCFARLAND to begin restoring the deeper channel as quickly as possible. Recognizing that Congress appropriated $12,828,000 in fiscal year 1997 under O&M General, we recommend that the Corps be funded an increased capability in fiscal year 1998 for this project. This will permit annual maintenance dredging and allow bank stabilization on the north and south banks, maintenance of the north jetty, and removal of any remaining shoaling caused by Tropical Storm Josephine. This project also provides deep draft access to the Port of New Orleans. Incidentally, in 1995, the 650 general cargo vessels calling on the MR–GO Tidewater facilities accounted for 31.4 percent of the general cargo tonnage handled over public facilities at the Port of New Orleans.

The emergency dredging in the Mississippi River-Gulf Outlet Channel greatly exceeded the budgeted amount in the project for fiscal year 1997 forcing the New Orleans District to utilize funds budgeted in other Operations and Maintenance Projects. We encourage the Congress to consider supplemental funding to replace the funds that were diverted to this emergency work. In addition, we request that any funds not replaced in fiscal year 1997 be added to the work scheduled in fiscal year 1998.

Recognizing that Congress appropriated $3,100,000 in fiscal year 1997 construction funds, we recommend that the Corps be funded to fully capability in fiscal year 1998 for the IH-NC New Ship Lock which is essential to the continuation of detailed design studies.

The operation and maintenance features of the Mississippi River Outlets at Venice, Louisiana are fundamental in providing safe and essential offshore support access to energy-related industries. In addition to routine traffic, Baptiste Collette Bayou is used by shallow draft vessels as an alternate route between the GIWW and/or MR–GO and the Mississippi River. Recognizing that Congress appropriated $2,190,000 in fiscal year 1997 under O&M General, we recommend that the Corps be funded an increased capability in fiscal year 1998 for continued maintenance of these critical east-west navigation channels, Baptiste Collette and Grand and Tiger Pass. These channels handled over 2 million tons of commerce in CY 95. The New Orleans District is scheduled to dewater and repair the Inner Harbor Navigation Lock in CY 98. This will close the GIWW to traffic where it intersects the Mississippi River for approximately 45 to 60 days. These necessary lock repairs will substantially increase traffic through Baptiste Collette and warrants a very high priority upon dredging this channel. In addition WRDA 96 modified the project to provide for the extension of the 16-foot deep MLG Baptiste Collette Bayou entrance channel to approximately mile 8 of the Mississippi River Gulf Outlet.

We urge approval of GI funds for fiscal year 1998 to address the need for and the timing of the replacement of Bayou Sorrel Lock on the GIWW, Morgan City-to-Port Allen alternate route. These funds, along with fiscal year 1997 carryover funds, will be used to continue the feasibility study.

Recognizing that Congress appropriated GI funds in the amount of $248,000 in fiscal year 1997 for the Corps to initiate a reconnaissance study of the long-term improvements needed for navigation on the Mississippi River and its outlets between Baton Rouge, LA, and the Gulf of Mexico to include anchorage areas, we recommend that the Corps be funded to full capability in fiscal year 1998 to complete the reconnaissance study.

Recognizing that approximately 120 million tons of cargo traverses the GIWW in the New Orleans District, we recommend that the New Orleans District be funded an increased capability in fiscal year 1998 for continued maintenance of the Louisiana and Texas section of the Gulf Intracoastal Waterway.

We are well aware of the impetus for reducing the Federal budget; however, we strongly urge that all of the above projects be funded to their full capability. Reduced funding on any of the above projects will result in a decreased level of maintenance, preventing the projects from functioning at their full authorized purpose. Any delays to required maintenance will escalate to rapid deterioration of the projects. This will lead to a reduction in serviceability and cause severe economic impacts, not only to this region but to the nation as whole, far outweighing any savings in Federal expenditures.

In closing I would like to recommend support for the Red River Waterway, Mississippi River to Shreveport, Louisiana project, providing for 236 miles of navigation improvements, 225 miles of channel stabilization works, and various recreational facilities. Recognizing that Congress appropriated substantial completion funding and O&M funding for this project in fiscal year 1997, we recommend that the Corps be funded to full capability in fiscal year 1998. This will provide funding to complete

navigation structures and to continue the Operation and Maintenance level required for normal operation.

Mr. Chairman, this concludes my statement and I thank you.

I am enclosing supporting statements from Mr. J. Ron Brinson, President and CEO of the Port of New Orleans, Mr. Channing Hayden, President of the New Orleans Steamship Association, Captain John Levine, President of the Associated Branch Pilots and Captain Mark Delesdernier, President of the Crescent River Port Pilots, plus several other statements. I would like to request that these statements be made a part of the record along with my statement. I have furnished separately for your staff's background use supplemental graphics relating to my statement.

CONGRESSIONAL APPROPRIATIONS FOR FISCAL YEAR 1997 FOR PORTS ON THE LOWER MISSISSIPPI RIVER AND THE RED RIVER WATERWAY

Project	Amount in President's Budget	Amount in Public Law
Mississippi River Ship Channel, Gulf to Baton Rouge, LA (Construction General)	$752,000	$1,252,000
Mississippi River, Baton Rouge to the Gulf, Maintenance Dredging and Stabilization (O&M General)	46,155,000	46,155,000
Mississippi River-Gulf Outlet (MR–GO), LA (O&M General)	12,828,000	12,828,000
Mississippi River-Gulf Outlet, LA New Ship Lock (Construction General)	3,100,000	3,100,000
Mississippi River Outlets at Venice, LA (O&M General	2,190,000	2,190,000
Intracoastal Waterway Locks, (GI Funds)	600,000	600,000
Gulf Intracoastal Waterway LA & Texas (O&M General)	16,603,000	16,603,000
Red River Waterway (Construction General) and (O&M General)	9,853,000	10,853,000
Total	96,881,000	103,081,000

SUMMARY

Mississippi River Ship Channel, Gulf to Baton Rouge, LA (Construction General)

We recommend that the Corps be funded to full capability in fiscal year 1998 to perform the fiscal year 1998 required work on the saltwater intrusion mitigation plan and to complete design studies for a potential phase III fifty-five foot channel.

Mississippi River, Baton Rouge to the Gulf, Maintenance Dredging and GI Funds for Navigation Study

Recognizing that Congress appropriated $46,155,000 in fiscal year 1997 under O&M General, and $248,000 in GI funds for a navigation improvement study to include ways to reduce long term maintenance costs, we recommend that the Corps be funded increased capability for these two items in fiscal year 1998.

Mississippi River-Gulf Outlet (MR–GO), LA, Maintenance Dredging

Recognizing that Congress appropriated $12,828,000 in fiscal year 1997 under O&M General, we recommend that the Corps be funded an increased capability in fiscal year 1998 to include bank stabilization, jetty maintenance, removal of any remaining shoaling caused by Tropical Storm Josephine in 1996 and reinstatement of any other structural repairs to channel banks that were curtailed as a result of funding restrictions due to Tropical Storm Josephine.

Mississippi River-Gulf Outlet, LA, New Ship Lock

Recognizing that Congress appropriated $3,100,000 in fiscal year 1997 construction funds, we recommend that the Corps be funded an increased capability in fiscal year 1998 for the IH-NC New Ship Lock which is essential to the continuation of detailed design studies.

Mississippi River Outlets at Venice, LA

Recognizing that Congress appropriated $2,190,000 in fiscal year 1997 under O&M General, we recommend that the Corps be funded an increased capability in fiscal year 1998 for continued maintenance of these critical east-west navigation channels (Baptiste Collette and Grand and Tiger Pass).

Intercoastal Waterway Locks, LA

We urge approval of GI funds for fiscal year 1998 to address the need for the timing of the replacement of Bayou Sorrel Lock on the GIWW, Morgan City-to-Port Allen alternate route. These funds, along with fiscal year 1997 carry over funds, will be used to continue the feasibility study.

Gulf Intercostal Waterway

LA AND TX (O&M General) recognizing that Congress appropriated $16,603,000 in fiscal year 1997 under O&M General, we recommend that the New Orleans District be funded an increased capability in fiscal year 1998 for continued maintenance of this critical section of this most important channel.

Red River Waterway, Mississippi River to Shreveport, LA

Recognizing that Congress appropriated $10,853,000 in fiscal year 1997 for substantial completion of this vital project and $9,500,000 for operations and maintenance in fiscal year 1997, we recommend that the Corps be funded to full capability in fiscal year 1998. It is essential that completion of work already underway on this project—ultimately to result in stimulating economic growth along the Red River Basin and increased cargo movements for Louisiana ports be funded.

LOWER MISSISSIPPI RIVER FOREIGN WATERBORNE COMMERCE—CALENDAR YEAR 1995

[In percent]

	Dollar value by world area	Tonnage by world area
Africa	8.6	10.2
Asia	32.2	32.3
Europe	28.0	23.3
Latin America	30.6	33.4
North America	.5	.8

Principle countries	Dollar value (millions)	Tonnage (thousands of short tons)
Japan	$3,310	21,609
Mexico	2,061	17,226
Venezuela	1,972	17,940
Netherlands	1,748	9,303
China	1,743	10,792
All others	24,207	124,342
Total	35,041	201,212

Source: U.S. Department of Commerce.

Lower Mississippi River foreign waterborne commerce

[Calendar years 1985–95]

	Percent of total U.S.
1995	18.6
1994	17.8
1993	18.1
1992	18.2
1991	16.6
1990	17.6
1989	16.9
1988	15.9
1987	18.2
1986	15.1

	Percent of total U.S.
1985	14.8

Source: U.S. Department of Commerce.

Lower Mississippi River [1] principal commodities 1995

	Short tons
Imports:	
Petroleum and petroleum products	55,524,512
Iron and steel	8,991,644
Metalliferous ores	7,483,052
Fertilizers	6,137,890
Nonmetallic mineral manuf	2,212,595
Chemicals	1,089,067
Coal, coke, and briquettes	1,088,638
All others	3,617,455
Total	86,144,853
Exports:	
Cereal and cereal products	54,330,584
Oil seeds and oleaginous fruits	17,588,556
Animal feeds	14,100,385
Coal, coke and briquettes	10,570,539
Petroleum and petroleum products	9,049,267
Chemicals	2,453,351
Vegetable fats and oils	1,746,546
All others	5,229,292
Total	115,068,520

[1] Foreign waterborne commerce.

Source: U.S. Department of Commerce.

Mississippi River Gulf outlet—1995 total waterborne commerce commodity profile

Primary manuf. goods	30.0
Crude materials	26.7
Coal	.....
Chemicals	17.7
Petro/petro prods	1.4
Manuf. equipment	6.3
All others	.2
Food and farm prods	17.7

Sources: U.S. Army Corps of Engineers, Port of New Orleans.

MISSISSIPPI RIVER GULF OUTLET 1995 FACTS AND COMPARISONS

Responsible for over three million tons of International general cargo.

Represents almost 31 percent of the total general cargo of the Port of New Orleans.

Responsible for 85 percent of all the container cargo in the State of Louisiana.

Moves more general cargo than Gulfport and Tampa combined.

Represents approximately 28 percent of the Port of New Orleans' vessel calls.

Cargo handled at public facilities via the MR-GO had an estimated economic impact of $793 million to the state of Louisiana.

The economic activity resulting from the MR–GO supported an estimated 12,075 jobs in the New Orleans metropolitan area.

Source: Port of New Orleans UNO Econ Impact Study.

PREPARED STATEMENT OF CHANNING F. HAYDEN, JR., PRESIDENT, NEW ORLEANS STEAMSHIP ASSOCIATION

PROJECTS OF PUBLIC INTEREST ON THE LOWER MISSISSIPPI RIVER FROM ITS MOUTH TO BATON ROUGE

1. *Mississippi River ship channel gulf to Baton Rouge, Louisiana (construction general).*—We recommend continuation of the work on the saltwater intrusion miti-

gation plan and the design studies for Phase III of the 55-foot channel. Funding to full capability in fiscal year 1998 is necessary for this required work to be performed.

2. *Channel stabilization and maintenance dredging of Southwest Pass and maintenance dredging of the Mississippi River from Baton Rouge to the Gulf of Mexico, plus general investigation of the river and its outlets between Baton Rouge, Louisiana, and the Gulf of Mexico*.—Recognizing that $46,155,000 was appropriated by Congress in fiscal year 1997 under O&M General, with GI funds of $248,000 in fiscal year 1997 for a reconnaissance study to improve navigation needs, we urge that the Corps be funded to its full capability in fiscal year 1998 under O&M General to permit dredging and dike maintenance work, and also fund to full capability in fiscal year 1998 to complete the reconnaissance study to include ways to reduce long term maintenance costs and the authorization to construct and maintain anchorages.

3. *The Mississippi River-gulf outlet maintenance dredging and bank erosion*.—Recognizing that $12,828,000 was appropriated by Congress in fiscal year 1997 under O&M General, we urge that the Corps be funded an increased capability in fiscal year 1998 to maintain this channel, which should include bank stabilization on both banks, jetty maintenance, and removal of all shoaling from Tropical Storm Josephine, as well as reinstatement of any other structural repairs to channel banks that were not done because of funding difficulties resulting from the storm's aftermath.

4. *Mississippi River-gulf outlet, Louisiana, new ship lock*.—Recognizing that $2,190,000 was appropriated by Congress in fiscal year 1997 construction funds, we urge funding for the Corps' full capability in fiscal year 1998 construction funds, which are essential to the completion of local reevaluation studies and initiation of detailed design studies for the IH–NC new ship lock.

5. *Red River waterway, Mississippi River to Shreveport, Louisiana*.—Recognizing that $10,853,000 was appropriated by Congress for substantial completion of the vital project and $9,500,000 for O&M in fiscal year 1997, we strongly urge that the Corps be funded to full capability for fiscal year 1998. This project will result in stimulating economic growth along the Red River Basin and increase cargo movements through the Port of New Orleans. Funding is essential to complete the work already under way.

6. *To provide access to the harbor maintenance fund to address dredging emergencies*.—To address dredging emergencies, such as the one currently in progress at Southwest Pass, Congress should provide the Corps limited access to the funds in the Harbor Maintenance Fund. Proper safeguards should be built in to restrict access to emergencies caused by floods, storms, and other natural disasters.

Mr. Chairman: My name is Channing Hayden, and I am President of the New Orleans Steamship Association. Our Association represents some 45 ship owners, operators, agents, and stevedores, who, in turn, represent the majority of the 6,000+ deep-draft vessels in foreign commerce that call Louisiana's Mississippi River ports each year. We are dedicated to the safe and efficient movement of maritime commerce through the state's river ports from the Gulf of Mexico to Baton Rouge. We endorse the testimony of Mr. George E. Duffy, Chairman of the Governor's Task Force on Maritime Industry and the statements of the other organizations attached to Mr. Duffy's testimony.

Channel stabilization and maintenance dredging in Southwest Pass are critical to keep project draft. Project draft ensures the Mississippi River's deep-water ports will handle the country's foreign waterborne commerce in the most cost-effective way possible.

For years we have urged this Committee to provide funds to maintain project draft at Southwest Pass. You have responded, and your wisdom has benefited the entire American heartland served by the Mississippi River system. Southwest Pass was greatly restricted throughout the 1970's. From 1970 to 1975, the channel was at less than project draft 46 percent of the time. In 1973 and 1974, the channel was below the 40-foot project draft 70 percent of the time. During some periods, drafts were limited to 31 feet. Fortunately, those conditions have not recurred because of a combination of factors: Your help, and the constant vigilance of the Pilots, the Corps, and the maritime community. The years 1990 through 1996 show a tremendous improvement in channel stability. We have been at or above project draft 97 percent of the time for vessels under 100,000 deadweight tons and 94 percent of the time for vessels 100,000 deadweight tons or greater. The funding you provided was money well spent. The repairs to the jetties and dikes and the Corps' ability to rapidly respond to shoaling have been instrumental in maintaining project dimensions.

In this regard, it is critically important that you fund the Corps to its full capabilities for needed repairs of the Southwest Pass pile dikes and the foreshore rock dikes from Mile 0.5 AHP to Mile 0.8 BHP. Both of these projects represent an in-

vestment that will cause the river to scour itself and reduce maintenance dredging costs. We also recommend mining sediment from Pass a Loutre and the Pilottown Anchorage to create and enhance wetlands. Each 800,000 cubic yards of dredged material creates 115 acres of wetlands and enhances 256 more. In the process, much-needed Pilottown Anchorage at fog-prone Head of Passes would be dredged to accommodate the increasing number of deeply-ladened ships attracted by the 45-foot channel. Dredging Pilottown Anchorage would also mitigate anchorage space lost in this area to the West Bay Diversion Project.

The Pilots have taken advantage of tidal flows and other factors to recommend the maximum draft possible consistent with safe navigation. Six years ago we set a new record with draft recommendations of 49 feet for vessels under 100,000 deadweight tons and 48 feet for those over 100,000 deadweight tons, an eight- to nine-foot improvement over the old 40-foot project draft and four to five feet over the authorized project. Twelve inches to a large vessel with a loading capacity of 250 tons per inch is an additional 3,000 tons of cargo. As of this writing, freight rates for grain moving from the Mississippi River to the Far East are $25.53 per ton and $13.44 a ton to Europe. Using the average, $19.49, each foot of draft represents an additional $58,470 in vessel revenue, or $467,700 for eight additional feet over the old 40-foot project draft. It also represents additional sales and increased competitiveness for U.S. products on the world market. Industry's partnership with you has kept Mississippi River ports competitive. Today Southwest Pass's draft is 46 or 47 feet, depending on vessel size—above the authorized project.

The funds we request for maintenance dredging and other works are essential for the Corps to maintain a reliable channel and respond rapidly to potential problems. This builds the confidence of the bulk trade in a reliable Mississippi River draft, which is critically important. Much of Louisiana's bulk trade is export agricultural products and coal. These commodities are neither captive to Louisiana nor the United States if they can be shipped from competing countries at a consistently lower cost.

The deeper the channel, the more important channel stabilization is. Adequate channel stabilization work minimizes the maintenance cost of the deeper channel—a cost effective investment. The faster the project is stabilized, the faster and greater the benefits of reduced O&M costs will be realized. Also, we recommend that the Corps conduct research on prototype dredging techniques. Experimental dredging would not replace routine dredging, but would permit, for example, testing dustpan dredges in Southwest Pass and Water Injection Dredge at the crossings above New Orleans.

Funds are also needed for dustpan dredges to work the crossings above New Orleans. These crossings control the draft to eight of our ten major grain elevators, plus many mid-stream loading facilities. This area caters to the bulk trade and must have a stable channel depth consistent with the depth at Southwest Pass. Only two dredges in the world are available to maintain the deep-draft crossings between New Orleans and Baton Rouge. (One to two more may be needed to reliably maintain the new 45-foot channel above New Orleans.)

The Corps is studying the makeup of their "minimum fleet"—the number of dredges the Corps owns and operates. Corps-owned dredges working the lower Mississippi River are the hopper dredges WHEELER, MACFARLAND, and ESSAYONS, and the dustpan dredge JADWIN. The WHEELER and MACFARLAND, and from time to time the ESSAYONS, provide much-needed capacity and immediate response to keep Southwest Pass opened, especially when the river is abnormally high. Last year's action to reduce the government hopper fleet will drastically diminish the Corps' ability to maintain reliable project dimensions and adversely affect our country's standing in world bulk markets. We urge Congress to reconsider its decision to place the WHEELER on stand-by status. Even when the WHEELER is available, the combined Corps/private fleet does not have enough Mississippi River-qualified hopper dredges to meet peak dredging requirement. The Corps' Minimum Dredge Fleet Study, due out later this year, should confirm the lack of needed capacity. A Congressional decision to reduce the Corps' dredge fleet by eliminating the JADWIN, one of two dustpan dredges in the world capable of working the crossings between New Orleans and Baton Rouge, could close the upper river to deep-draft ships, causing serious economic repercussions.

For all of the above reasons, we request full funding for the mitigation features of the 45-foot project and for O&M General.

In December 1994, the Corps completed the 45-foot deep channel to Baton Rouge. Proper maintenance now provides uniform drafts for all the ports on the lower Mississippi River. This makes U.S. exports through Louisiana more competitive, and adequate federal maintenance funds to keep the channel open must be available. In addition, the Corps needs authorization to construct and maintain anchorages to im-

prove safety. Over the years, revetment work and changes in the river itself have caused serious negative impacts on our anchorages. Therefore, we encourage full funding capability in fiscal year 1998 to complete the reconnaissance study of navigation needs on the Mississippi River and its outlets between Baton Rouge and the Gulf.

The growth of the Port of New Orleans depends, in large measure, on the Port's container and other facilities on the Mississippi River-Gulf Outlet (MR–GO). The funds you provided in past fiscal years have allowed the Corps to improve the channel considerably. However, the channel width has remained limited primarily because of erosion. This seaway has a project depth of 36 feet. For safety reasons in this narrow channel, restrictions apply to vessels with a draft of 30 feet or more, causing delays to the tightly scheduled container traffic using the MR–GO. These specialty vessels serving the Port's facilities are becoming larger. This channel, with less than stable full project dimensions, causes problems for larger vessels, reducing our ability to grow with the trade. Early last October, Tropical Storm Josephine caused severe shoaling throughout the channel. Depths were reduced below 30 feet in many areas, requiring the Pilots to restrict drafts. Despite the Corps' best efforts, the channel width remains seriously reduced in many areas, and the depth is deteriorating rapidly. This is not conducive to safety, nor does it enhance the Port of New Orleans' ability to compete in the lucrative container trade. The highest wages under the International Longshoreman's Association's contract ($23 per straight-time hour) is paid for work at the MR–GO container facilities. Anything that threatens the MR–GO jeopardizes these high-paying jobs, which are held mostly by minority workers.

To improve safety on the MR–GO and protect Louisiana's container trade (and the well-paying, minority employment it produces), we request that the Corps be funded to an increased capability for the MR–GO in fiscal year 1998. This will allow annual maintenance dredging, north and south bank stabilization, north jetty maintenance, removal of all shoaling caused by the October storm, and reinstatement of all structural repairs to channel banks that were not done because of funding difficulties resulting from the storm's aftermath.

With facilities located on both the MR–GO and the Mississippi River, an adequate route between the two is essential for efficient transit between these facilities. The shortest route is an inadequate, antiquated lock built in the 1920's with a width of 75 feet and limited depth of 30 feet. Its maximum capacity has long been exceeded. The average waiting time for passage through the lock has increased from 8½ hours in 1985 to about 12 hours at present; however, we understand that waiting time can be more than a day in some instances.

A much larger ship lock is necessary to accommodate today's traffic. We urge Congress to provide the Corps' full fiscal year 1998 capability for this important project to insure its completion. Delays are unthinkable since the new lock is long overdue.

The Red River Waterway, Mississippi River to Shreveport, Louisiana, Project is directly related to our ports. The continuation and completion of this work will stimulate the economy all along the Red River Basin with jobs and additional international trade. This stimulated trade will service the Port of Shreveport and the ports on the lower Mississippi River, providing needed growth and benefitting the states of Louisiana, Texas, Oklahoma, and Arkansas, which are served through the Shreveport distribution center. Therefore, we strongly recommend that the Corps be funded to full capability for fiscal year 1998.

The shoaling difficulty and funding issue relating to the MR–GO because of the Tropical Storm Josephine, as explained in earlier paragraphs, has caused an even greater problem. It will affect the Corps' ability to properly address shoaling at Southwest Pass. The high-water season began early and is projected to continue for some time. This is based on the melting of the heavier than usual snows in the areas that feed into the Mississippi River. In addition, the high-water has already filled upriver reservoirs. Some are preparing to release water to receive more snow runoff. We understand that early melting of the plains snowpack poured record amounts of water into the Missouri River reservoirs in February and has produced the second highest February runoff on record, more than 300 percent of normal. Mountain snow runs-off is normally not until May, June, and early July. Flooding in some areas of the country is still expected. This overall situation will put an unusual amount of water into the Mississippi River and cause considerable shoaling in Southwest Pass and the Pilottown area. There is already considerable deterioration of the channel's width, and the high-water season is far from over. Also, we are concerned that the Mississippi River crossings between New Orleans and Baton Rouge will be seriously affected. When the anticipated high river does fall, there will be shoaling at the crossings. This has the effect of double-jeopardy because as the river's elevation comes down, the river's bottom will come up.

We urge Congress to provide for navigation emergency needs such as this. An appropriate solution would be for Congress to take action that would provide the mechanics for the immediate release of Harbor Maintenance Funds to the Corps of Engineers. Such funding would be specifically for emergencies to prevent hazards to navigation and avoid impeding the flow of our nation's commerce.

Thank you for allowing the Association to submit testimony on our Corps' funding needs.

PREPARED STATEMENT OF CAPT. MARK DELESDERNIER, JR., PRESIDENT, CRESCENT RIVER PORT PILOTS ASSOCIATION

I have served as President of the largest pilot association in the United States for the past 15 years. The Crescent River Port Pilots furnish pilots for ships destined to the Port of Baton Rouge, Port of South Louisiana, Port of New Orleans, Port of St. Bernard, and the Port of Plaquemines.

The Crescent River Port Pilots piloted and shifted over 17,000 ships during 1996. We pilot deep draft vessels on more than 100 miles on the lower Mississippi River and 35 miles on the Mississippi River Gulf Outlet.

The lower end of our route on the Mississippi River has a shoaling problem starting with the high water season each year. The shoaling requires daily attention by the United States Army Corps of Engineers to maintain project depth.

Heavy laden vessels call on the lower Mississippi River system as a direct result of the completion by the Corps of Engineers of the deepening of the channel from 40 feet to 45 feet.

For several years now, we have had extraordinary success in keeping the river dredges to project depth. This success is a direct result of an experienced and vigilant Corps of Engineers that, through experience, is able to timely bid in dredges to avoid extra dredging cost by waiting too long to start maintenance dredging.

Channel stability sends a positive message to the world's shipping community that schedule cargo for deep draft vessels months in advance is reliable. This makes the port call on the Mississippi River very profitable since the ships can lift greater tonnage.

Keeping project depth is beneficial to twenty seven states that are directly tied to the Mississippi River Port Complex.

Additionally I would like to comment on the east and west navigation channels near Venice, Louisiana. Baptiste Collette and Tiger Pass provide a shorter and more direct route to Breton Sound and West Delta in the Gulf of Mexico for oil field support vessels.

The Crescent River Port Pilots also pilot ships in the Mississippi River Gulf Outlet. A man-made channel approximately 75 miles long starting in Breton Sound in the Gulf of Mexico and ending in New Orleans where it intersects with the Intercoastal Waterway.

The Mississippi River Gulf Outlet feeds the main container terminals in the Port of New Orleans. Additional docks such as Bulk Terminal and general cargo facilities depend on this channel which handled approximately 700 ship calls last year.

The Mississippi River Gulf Outlet has been a controversial channel since its inception, but being an integral part of the Port of New Orleans, it would be a disaster if it is not kept at project width and depth. The Crescent River Pilots strongly support approval of funding for both the maintenance dredging, jetty repair projects.

Funding of the United States Army Corps of Engineers projects in the lower Mississippi River system which includes the Mississippi River Gulf Outlet, Tiger Pass, Baptiste Collette and Southwest Pass has proven to be money well spent.

I urge your support of the funding requested to allow the Corps of Engineers to continue to maintain and improve the most productive waterway system in the world.

Mr. Chairman, thanks for allowing me the opportunity to submit my comments to your subcommittee.

PREPARED STATEMENT OF JOHN LEVINE, JR., PRESIDENT, ASSOCIATED BRANCH PILOTS

PROJECTS ON THE LOWER MISSISSIPPI RIVER AND THE MISSISSIPPI RIVER GULF OUTLET

The Associated Branch Pilots is an Association of pilots that have been guiding oceangoing vessels into the entrances of the Mississippi River system for over 125 years. We are called Bar Pilots because we guide the ships past the constantly shifting and shoaling sand bars in the area.

Southwest Pass of the Mississippi River is the main entrance for deep draft oceangoing vessels entering the Lower Mississippi River System. It is the shallowest stretch of the Lower Mississippi River System and the area that requires the greatest effort by the Corps of Engineers to maintain project depth.

In 1996, the Associated Branch Pilots made 12,302 transits on oceangoing vessels through Southwest Pass. Of these ships, 3,855 were of 50,000 deadweight tons or greater and 560 had a draft in excess of 40 feet.

This number of heavily laden vessels calling on the Lower Mississippi River System is a direct result of the completion by the Corps of Engineers of the deepening of the channel from 40 feet to 45 feet.

This first phase has proven to be extremely well designed and well maintained by the fact that the maximum draft recommended by my Association for vessels using Southwest Pass has been 45 feet or greater, except a two and a half month period during the high river of 1994, since May 18, 1989. This is in stark contrast to the late 1970's and early 1980's when we often had to recommend drafts less than the project depth due to shoaling.

To the world shipping community, this means that calling at ports on the Mississippi River system will be more profitable because larger ships can enter and carry greater amounts of cargo.

This is beneficial to the entire United States because it makes the large quantities of petroleum, agricultural, and manufactured products shipped from the Mississippi Valley more desirable due to increased profitability.

I would also like to comment briefly on the East-West navigation channels near Venice, Louisiana. Tiger Pass and Baptiste Collette provide a shorter, more direct route to Breton Sound and the Gulf of Mexico for offshore supply boats and small tugs and barges. These channels not only represent a savings in time and money for these vessels, but reduce the traffic in the main shipping channel, the Mississippi River and its passes, which is one of the most congested waterways in the country.

The dredging of Baptiste Collette and South Pass would contribute greatly to increased safety on the lower river, especially considering the current boom in offshore oil exploration and the ensuing traffic that has resulted.

The Associated Branch Pilots also pilot vessels in the Mississippi River Gulf Outlet, a man-made tidewater channel 75 miles long, stretching from the Gulf of Mexico to an intersection of the Intercoastal Waterway in New Orleans.

This channel leads to the Main Container Terminals for the Port of New Orleans, the Roll On, Roll Off Terminal, the Port of New Orleans Bulk Handling Plant, and additional General Cargo Docks. For the Port of New Orleans to remain competitive in the ever growing container trade, the continued maintenance of this channel is critical. In 1996, 586 ships called on the port using the Mississippi River Gulf Outlet.

Much is being said pro and con concerning the Mississippi River Gulf Outlet. There is, admittedly, an erosion problem in the Mississippi River Gulf Outlet, but any curtailment of shipping traffic in the channel without regard to the long term effect upon the Port of New Orleans would be disastrous. I strongly support approval of funding for both the maintenance dredging/jetty repair project and the erosion/riprap study for the Mississippi River Gulf outlet.

I would also like to make a brief statement on behalf of the Mississippi Valley Coal Export Council. Over 62 million tons of coal have been exported, using the Mississippi River System during the past five years. Coal miners, tugboat captains, barge owners, shippers and many other coal related workers have benefited by using the consistent and efficient Mississippi River System. This also represents significant contribution towards the trade balance between the United States and other industrialized nations.

Funding of the Corps of Engineers projects in the Lower Mississippi River System has proven to be money well spent. It has increased exports and imports that have benefited the entire United States. I urge your support of the funding requested to enable the Corps to continue to maintain and improve the most efficient and productive waterway system in the country.

PREPARED STATEMENT OF J. RON BRINSON, PRESIDENT AND CEO, PORT OF NEW ORLEANS, NEW ORLEANS, LA

The Port of New Orleans depends upon the Mississippi River and the Mississippi River Gulf Outlet in providing the crucial service gateway for the 14,500 mile inland waterway system connecting Mid-America to world markets.

We support fully the March 31, 1997 testimony of the Louisiana Governor's Task Force on Maritime Industry on behalf of the ports on the lower Mississippi River and the related maritime interests of the State of Louisiana. There simply can be no miscalculation as to the supreme economic importance of these waterways to the national interest.

We thank you and your Subcommittee for outstanding support and cooperation over many years.

PREPARED STATEMENT OF CLYDE A. GIORDANO, PARISH PRESIDENT, PLAQUEMINES PARISH GOVERNMENT, BELLE CHASSE, LA

In my official capacity as Parish President of Plaquemines Parish Louisiana, I am herein requesting the following appropriation be made for fiscal year 1998:

1. *Mississippi River ship channel, gulf to Baton Rouge, LA (construction general)*.—We recommend that the Corps be funded to full capability in fiscal year 1998 to perform the fiscal year 1998 required work on the saltwater intrusion mitigation plan and to complete design studies for a potential phase III fifty-five foot channel.

2. *Mississippi River, Baton Rouge to the gulf, maintenance dredging and GI funds for navigation study*.—Recognizing that Congress appropriated $46,155,000 in fiscal year 1997 under O&M General, and $248,000 in GI funds for a navigation improvement study to include ways to reduce long term maintenance costs, we recommend that the Corps be funded increased capability for these two items in fiscal year 1998.

3. *Mississippi River outlets at Venice, LA*.—Recognizing that Congress appropriated $2,190,000 in fiscal year 1997 under O&M General, we recommend that the Corps be funded an increased capability in fiscal year 1998 for continued maintenance of these critical east-west navigation channels (Baptiste Collette and Grand and Tiger Pass).

We would certainly appreciate your consideration and all the assistance you can give us in these projects.

PREPARED STATEMENT OF IRWIN A. RUIZ, EXECUTIVE DIRECTOR, ST. BERNARD PORT, HARBOR AND TERMINAL DISTRICT, CHALMETTE, LA

As a deep water port on the Mississippi River located immediately below New Orleans, I would like to add our endorsement to George Duffy's statement on dredging projects on the lower Mississippi River.

It is imperative that those projects are funded in order to continue stimulating economic growth to this vital area.

We would appreciate your consideration of this important issue.

PREPARED STATEMENT OF GARY K. PRUITT, EXECUTIVE DIRECTOR, GREATER BATON ROUGE PORT COMMISSION

The Port of Greater Baton Rouge respectfully requests that your committee give favorable consideration to the following projects.

1. *Mississippi River ship channel—Gulf to Baton Rouge, LA*.—We support full funding in fiscal year 1998 to the Corps of Engineers General Construction Budget. This is very important as it allows for the work on the saltwater intrusion mitigation plan and for completion of the design studies for the fifty-five foot channel.

2. *Mississippi River—Baton Rouge to the gulf—maintenance dredging and GI funds for navigation study*.—We support increased funding for maintenance dredging on this stretch of the river and also for the navigation improvement study to reduce long-term maintenance cost.

These two projects are extremely important, not only to the Port of Greater Baton Rouge, but to the entire nation. The great Mississippi River is the premier national waterway, providing accessibility to and from foreign countries for the transportation of goods and services used by countless numbers of U.S. companies and individual citizens. It must be properly designed and maintained for the benefit of all.

We also earnestly request your support for funding of the other projects included in this testimony as prepared and submitted by Mr. George E. Duffy, Chairman of the Governor's Task Force on the Maritime Industry. These projects are also extremely important to the overall viability of the Mississippi River system and its tributaries. We must properly maintain all of the system if we are to continue to have the confidence of our trading partners around the world.

Your cooperation in these matters is greatly appreciated.

PREPARED STATEMENT OF A. LYNN LOWE, PRESIDENT, RED RIVER VALLEY ASSOCIATION

INTRODUCTION

The Red River Valley Association is a voluntary group of citizens banded together to advance the economic development and future well-being of the citizens of the four state Red River Basin area in Arkansas, Louisiana, Oklahoma and Texas.

For the past 72 years, the Association has done notable work in the support and advancement of programs to develop the land and water resources of the Valley to the beneficial use of all the people. To this end, the Red River Valley Association offers its full support and assistance to the various Port Authorities, Chambers of Commerce, Economic Development Districts and other local governmental entities in developing the area along the Red River.

The Resolutions contained herein were adopted by the Association during its 72nd Annual Meeting in Shreveport, Louisiana on February 13, 1997, and represent the combined concerns of the citizens of the Red River Basin area as they pertain to the goals of the Association, specifically: Economic and Community Development, Flood Control, Bank Stabilization, A Clean Water Supply for Residential, Commercial, Industrial and Agriculture Uses, Solar and Hydroelectric Power Generation, Recreation, Navigation, and Environmental Balance.

The Red River Valley Association is aware of the constraints on the federal budget, and has kept those restraints in mind as these Resolutions were adopted. Therefore, and because of the far-reaching regional and national benefits addressed by the various projects covered in these Resolutions, we urge the members of Congress to review the materials contained herein and give serious consideration to funding the projects at the levels requested.

RRVA STATEMENT

Mr. Chairman and members of the Committee. I am Lynn Lowe, and I am pleased to represent the Red River Valley Association as its President. Our organization was founded in 1925 with the express purpose of uniting the citizens of Arkansas, Louisiana, Oklahoma and Texas to develop the land and water resources of the Red River Basin.

I would like to comment on our concerns we have for the future economic well-being of the citizens residing in the four state Red River Basin area.

Navigation.—Thanks to this committee's support, the Red River Navigation project to Shreveport-Bossier City, Louisiana—the largest metropolitan area in the River Basin—is complete. We have already realized benefits this project will bring to the area—and the nation—and thank you for your support. We now ask for your continued support to study the feasibility of extending navigation from Shreveport-Bossier City, Louisiana into the State of Arkansas. Many areas continue to suffer major unemployment, and the navigation project, although not the total solution, will help revitalize our economy. We are aware that limited analysis, to date, have not had the results we had hoped for. When regional economic benefits are considered it would clearly demonstrate the great benefits not realized to date. The U.S. Fish and Wildlife Service Planning Aid Report indicated minimal impact and most probably an enhancement to environmental value. I want to stress that the local sponsor, the Red River Commission of Arkansas, has available their 50 percent cost share for the complete feasibility study. Very few local sponsors have funds 'in the bank' and are also willing to fund additional studies to insure a complete analysis is made.

Bank Stabilization.—One of the most important continuing programs on the Red River is bank stabilization to stop the loss of valuable farmland that washes down streams to form sandbars and interfere with the navigation channel. These revetment projects are compatible with subsequent navigation and we urge that they be continued in those locations designated by the Corps of Engineers to be the areas of the worst bank caving.

It is essential to protect the banks from caving and erosion along the Red River below Denison Dam to Index, Arkansas. The Federal Government constantly encourages its farmers to protect our lands against all forms of erosion, so it only makes sense to be consistent. An authorized project exists; 'Red River Waterway, Index, AR to Denison Dam, TX, Bank Stabilization', so the issue lies with the benefit/cost ratio. We believe that the authorized, on going 'Sediment Transport Study' will identify benefits due to reduced dredging cost to the Navigation Waterway in Louisiana. There is a new technique for bank stabilization which could be allowed as a demonstration project under this authorized project. This new technique, underwater bendway weirs, have proven to be less expensive than conventional meth-

ods and more efficient in controlling the energy of the river. Much prime farmland in Oklahoma and Texas is lost each year to river erosion and we must investigate all avenues to correct this problem.

Flood Control.—You will recall that in 1990 major areas of northeast Texas, Southwest Arkansas and the entire length of the Red River in Louisiana were ravaged by the worst flooding to hit the region since 1945 and 1957. More than 700,000 acres were flooded with total damages estimated at $20.4 million. However, it could have been much worse. The Corps of Engineers estimates that without the flood control measure authorized by Congress over the past several decades an additional 1.3 million acres would have been flooded with an estimated $330 million in additional flood damage to agricultural and urban developments. We continue to consider flood control a major objective and request you continue funding the levee rehabilitation projects ongoing in Arkansas, Texas and Louisiana.

Clear Water.—Nearly 3,500 tons of natural salts, primarily sodium chloride, enter the upper reaches of the Red River each day, rendering downstream waters unusable for most purposes. Several years ago, Congress authorized funding for the Truscott Brine Lake project, which is located on the South Fork of the Wichita River in King and Knox Counties, Texas. After the project became operational in 1987, an independent panel of experts found that the project not only continues to perform beyond design expectations insofar as providing cleaner water, but has an exceptionally favorable cost benefit ratio. Sixteen million dollars was appropriated in fiscal year 1995, by the Administration, to accelerate engineering design, real estate acquisition and initiate construction of the Crowell Brine Dam, Area VII and Area IX. Due to a conflict over environmental issues raised by the U.S. Fish and Wildlife Service, completion of the SFEIS was delayed pending further study to determine the extent of possible impacts to fish and wildlife, their habitats and biological communities along the Red River and Lake Texoma. In an effort to resolve these issues and insure that no harmful impact to the environmental or its ecosystems will result, from implementing the Chloride Control Project, a comprehensive environmental and ecological monitoring program is being implemented to evaluate the actual impacts of reducing chloride concentrations within the Red River watershed.

The Supplement to the Final Environmental Impact Statement was completed in August 1996; however, has yet to be released. The Assistant Secretary of the Army (Civil Works) directed that a Supplemental Assessment Report (SAR) be conducted and completed by February 1997. It is imperative that the SFEIS and SAR be released for public review and comment to insure all the facts and information are available for decisions to be made.

Additionally, one system, the Wichita Fork of the Red River already has Truscott Brine Reservoir completed and one pump station operating, pumping brine to the reservoir. A second pump station is complete but the pipeline not constructed. It would be a waste of taxpayer monies not to complete this system, Wichita Fork, and then monitor this ecosystem.

The Association urges Congress to continue supporting the Chloride Control Project in order to assure a clean water supply for residential, commercial, industrial, and agricultural uses. This truly affects multi-states requiring a Federal project; as the benefits affect all four states in the Red River region.

Operation and Maintenance.—We appreciate the support of your subcommittee to support the completion of navigation to Shreveport/Bossier City which is now providing an increase to our industrial base, creating jobs and providing economic growth. It is imperative you continue to provide funding to complete navigation structures and funding to fully develop recreation sites to fully realize the total benefits of this project. We understand the importance to reduce costs; however, we must not sacrifice safety. Presently the lock and dams on the Red River operate with only one person at night. Any proposal to reduce manhours at the lock and dams will jeopardize safety, especially since water control levels by the dam gates requires 24 hour adjustments. In addition, as a new waterway it is imperative we be given every opportunity to fully develop our industries and benefits. Reduced hours of operation would hinder that. We request that O&M funding levels remain at the required full Corps capability.

Full O&M funding levels is not only important for the Waterway Project but for all our Corps projects.

We are sincerely grateful to you for the past support you have given our various projects. We hope that we can count on you again to fund our needs and complete the projects that will help us diversify our economy and create the jobs so badly needed by our citizens.

Civil Work Projects are the one most effective jobs program in the Federal government. On an average, 80 percent of the cost of these projects goes to the private sector for design contracts and all construction. Once completed our communities

are provided with the infrastructure to promote economic development opportunities. What other federal program compares to the benefits received for the dollar spent?

Thank you for the opportunity to present this testimony and project details of the Red River Valley Association for the industries, organizations and citizens we represent throughout the four state Red River valley region. We believe that any federal monies spent on civil work projects are really investments in our future and will return several times the original investment in benefits that will eventually accrue back to the federal government.

I am always available to provide you and your staff additional information or clarification on any issue presented.

SUMMARY OF FISCAL YEAR 1998 REQUESTS

NOTE: Projects are not in any order of priority. Project number correspond to the backup information in Section IV.

1. Navigation on the Red River in Southwest Arkansas: WRDA 96 authorized a feasibility study for this project. Funding is requested to initiate the study.

a. Funds are existing in the 'Daingerfield Reach', General Investigation Account, Red River Waterway Project. ($1.8 million)

b. Request reprogramming of the 'Daingerfield Reach' funds to the Southwest Arkansas feasibility study in fiscal year 1997.

c. If these funds are not reprogrammed then funds are requested in the fiscal year 1998 appropriations.

d. The local sponsor is prepared to cost share the study, 50 percent, and has funds on hand.

Three year, Study Cost = $3,000,000

Federal = $1,500,000

Local Sponsor = $1,500,000

2. Red River Chloride Control Project:

a. The SFEIS was completed in August 1996. The ASA(CW) decided not to release it and directed the Tulsa District to complete a Supplement Assessment Report by January 31, 1997 to address alternative options.

b. The SFEIS must be released for public review and comment to insure interested parties have all the project information in which to make a decision.

c. The pump station at Area X has been completed; however, construction of the pipeline to Truscott Brine Reservoir has not been done. Truscott Reservoir has been completed as well as a second pump station and both have been operating since 1987. It would be a waste of taxpayer monies not to construct the Area X pipeline which completes this self contained system.

Fiscal year 1998 Funds Requested: $12,000,000

d. Request funding to start the construction of Crowell Brine Reservoir; Area VII and Area IX.

Fiscal year 1998 Funds Requested: $10,000,000

3. Red River Below Denison Dam, Red River; Arkansas Levees: Continue funding levels for fully funded construction and restoration of Levee Item #5 Miller County Levee District) and Levee Item #A (Red River Levee District #1). Design Levee Item #6 (Garland Levee District) and initiate design for Levee Item #7 (McKinney Bayou Drainage District).

Funds Requested: $4,000,000

4. Red River Emergency; Bank Protection; AR and LA: Fully Fund Construction of Dickson ($6 mil) and Finn Phase II ($5.4 mil) revetments. Complete design and fully fund construction on Black Lake ($3.5 mil), Hunters Island ($7.1 mil) and Pleasant Valley ($4.9 mil) revetments. Initiate design for Float realignment ($300,000)

Funds Requested: $27,200,000

5. Red River Emergency; Bank Stabilization between Denison Dam and Index, AR: We request the following two items:

a. Complete the 'sediment transport study'.

b. A 'demonstration project' at two sites to analyze the effectiveness of a new technique, bendway weirs.

Funds Requested for a and b: $2,200,000

6. Red River Waterway Project, LA:

a. We support the $9.99 million included in the President's budget and items of work proposed by the Corps.

b. In addition, we request additional funding, to insure the integrity and safety of the Red River navigation channel is maintained for reliable barge transportation as well as continuing with recreation features. Complete construction on Eagle Bend

Capout and initiate construction on Campti Capout, Socot Capout and Ile Au Vaches Dikes. Hadden/Ft. Derussy, Ben Routh/Dupree, Saline revetments, Powhatan Dikes, East Point Dikes and Moss Capout must be reinforced to maintain their integrity. Construct Federal recreation sites at L&D 3, 4 and 5.

Additional fiscal year 1998 Funds Requested: $9,000,000

c. Design and construct boat launch facilities in Pool 3; one at Natchitoches, LA, and one at Colfax, LA. There is no access to the Red River in Pool 3 and as commercial traffic increases it is imperative that there be access for safety. These sites will be cost shared 50/50 with the Red River Waterway Commission.

Total Funds Required: $3,000,000

Fiscal year 1998 Federal Funds Requested: $1,500,000

Local Sponsor Costs: $1,500,000

7. Cypress Valley Watershed, TX: Request a feasibility study for North East Texas Caddo Lake spillway Modification. A local sponsor has been identified and willing to participate.

This study will demonstrate the benefits in flood damage reduction, environmental restoration, recreation and water supply to the Cypress Valley Watershed system. The total feasibility cost is estimated to be $1 million; cost shared 50/50 with the local sponsor.

Fiscal year 1998 Federal Share: $375,000

Local Sponsor Share: $375,000

8. Aloha-Rigolette Project, LA: Construction is underway and the funding will continue at Full Corps capability.

9. McKinney Bayou, AR: The reconnaissance study was completed and determined to be economically feasible. This project will go directly into PED and cost shared with the local sponsor (Federal—75 percent; local sponsor 25 percent) over a three year period.

Total PED Cost is: $600,000

Fiscal year 1998 Funds Required: $317,000

Fiscal year 1998 Federal: $250,000

Fiscal year 1998 Local Sponsor: $67,000

10. Bowie County Levee, TX: The plans and specifications will be completed in fiscal year 1997. We request a fully federal funded construction project.

Fiscal year 1998 Funding Requested: $900,000

11. McGrath Creek, TX: Continue construction funding at the level of Full Corps Capability. This is supported by the Administration.

12. Ogden Levee, Little River County, AR: This levee system is part of the Federal System and in need of rehabilitation. The Secretary of the Army acting through the Chief of Engineers is directed to design and initiate construction of the Ogden and Walnut Bayou Levees along the Red River. These levees were authorized by the Flood Control Act of 1946. The amount of $1,000,000 to be expended until gone is requested in the bill for this work. The Ogden Levee to be designed to the same height as the opposite bank levees, Bowie and Miller County.

Funding Requested: $1,000,000

13. Grassy Lake, AR: Project Modifications for Improvement of the Environment (Section 1135). The Secretary of the Army acting through the Chief of Engineers is requested to expend, within the funds provided for the section 1135 program; $900,000 for planning, design, and construction of modifications to restore the environmental quality of Grassy Lake, Hempstead County, Arkansas, degraded by the construction of Millwood Lake, Arkansas.

Funding Requested: $900,000

14. Caddo Levee System, LA: Under 'Red River Below Denison Dam' request the Twelve Mile Bayou Revetment be reenforced to provide additional protection to the adjacent federal levee.

Funds Requested: $600,000

15. Bossier Levee System, LA:

a. Have the Corps clear and grub the channel of Loggy Bayou from its confluence of the Red River for 7.8 miles. This channel has a serious impact on flooding in the upstream.

Funds Requested: $500,000

b. Rehabilitate the Red Chute Guideline Levee to a 100 year protection level.

Funds Requested: $3,000,000

16. Red River Waterway Regional Visitor Center, LA: Request that design continue on the Red River Regional Visitor Center which includes a facility at Shreveport/Bossier and one at Natchitoches, LA. This will be fully federally funded as part of the Waterway Navigation Project. Funding has been appropriated for this project.

17. Red River Waterway, O&M:

a. WRDA 96 authorized the Corps to insure the oxbows remain accessible to the Red River for environmental purposes. The oxbow study report is completed and work should commence once approved. The O&M funding level must be adequate to address this issue.

b. The President's budget included $7.7 million for the O&M of this project which falls short of capability and needs. The Locks and Dams are not to be operating on a full time basis in fiscal year 1998; however, the Dams must be operated on a 24 hour basis for water control. $500,000 must be added to restore operation to full 24 hour operation. Additionally, as a new waterway it is important to allow commerce to move to encourage industry to develop.

c. $2 million are required for revetment repairs to maintain the integrity and safety of the channel. Again, this new system must be given the full opportunity to develop.

Fiscal year 1998 President's Budget: $7,700,000
Restore 24 Hour Operation: $500,000
Revetment Repair: $2,000,000
Total fiscal year 1998 O&M Funds Requested: $10,200,000

18. Operations & Maintenance at Corps Projects: Request that all O&M funded projects remain at the level of Full Corps Capability.

19. Project Support: We will testify to strongly support the following Mississippi River Tributaries (MRT) project, LA: Bayou Rapides Drainage Structure Pump Plant; Lower Red River South Bank Levee, to be funded for $400,000.

BACKUP INFORMATION TO REQUEST

Following is backup information and a historical perspective on each project request. They are numbered to correspond to each numbered project in the Summary of Request, Section III.

1. *Navigation on the Red River at Southwest Arkansas*.—Twenty-one years ago the Arkansas General Assembly created the Red River Commission upon the recommendation of Governor Dale Bumpers, now the Senior United States Senator for the State of Arkansas. The Commission was vested with the authority to furnish the local cooperation necessary for the construction and study of projects and to coordinate with the Corps of Engineers and the Congress to develop the water resources of the Red River in Arkansas. With navigation now a reality to Shreveport, Louisiana, we are prepared to extend water transportation into Arkansas. Southwest Arkansas and East Texas are economic depressed regions. This project would provide multi-purpose opportunities for industries and increased employment. A regional impact study would clearly demonstrate the great benefits not realized to date. The local sponsor, Red River Commission of Arkansas, has their cost share for the study, on hand. A project would provide economic benefits to this economically depressed area in the form of increased employment of our citizens, a local and national benefit not captured in the limited economic analysis made by the Corps in the reconnaissance study. There is no doubt that this project is feasible and only a full feasibility study will prove that. Most importantly, the local cost share, 50 percent, is available now for this study.

2. *Red River basin chloride control project*.—Natural mineral pollutants in the upper reaches of the Red River Basin are rendering downstream waters unusable for most purposes. The primary pollutants are chlorides and sulfates.

The U.S. Public Health Service initiated a study in 1957 to locate the natural pollution areas and determine the contribution of pollutants from the individual areas to the Red River. It was determined that 10 natural salt source areas located in the basin contribute a daily average of about 3,600 tons of salt (as NaCl) to the Red River. The U.S. Army Corps of Engineers, Tulsa District, entered the study in 1959 to recommend measures to control the natural pollution. Structural measures were recommended for 8 of the 10 salt source areas.

An experimental project at Area V near Estelline, Texas was authorized by the Flood Control Act of 1962. The project consists of a 9-foot-high by 340 foot diameter earthen dike encompassing a brine spring and a 4-foot-wide concrete outlet flume with stoplogs to control flow. With the project in operation, since January 1964, surface flow from the spring has been suppressed, thus preventing over 240 tons of chlorides per day from entering Prairie Dog Town Fork of the Red River.

Structural measures for chloride control at Areas VII, VIII, and X in the Wichita River Basin above Lake Kemp were authorized by the Flood Control Act of 1966 (Public Law 89–789), and structural measures for Areas VI, IX, XIII, and XIV were authorized by the Flood Control Act of 1970 (Public Law 91–611). Actual construction, however, was not to be initiated until approved by the Secretary of the Army and the President. The Flood Control Act of 1970 was amended by the Water Re-

sources Development Act of 1976 to eliminate the required approval of the President to initiate construction.

The Water Resources Development Act of 1974 (Public Law 93–251), specifically authorized construction of chloride control measures at Area VIII, located on the South Fork of the Wichita River in King and Knox Counties, Texas. The project includes a low-flow dam with a deflatable weir to collect brine flows emitting from the area, Truscott Brine Reservoir, located near Truscott, Texas, for brine storage, and a pump station and pipeline to deliver the brine to the impoundment. Construction began in the fall of 1976 and the project was placed in operation in May 1987. Area VIII continues to exceed design specifications and currently controls over 168 tons of chlorides daily.

The Water Resources Development Act of 1986 (Public Law 99–662) required that a special panel evaluate the improvement in water quality downstream of Area VIII to determine its consistency with the water quality assumed in the development of project benefits. A favorable report was submitted to the Assistance Secretary of the Army (Civil Works) and the Committee on Environment and Public Works of the Senate and the Committee on Public Works and Transportation of the House of Representatives in August of 1988. Public Law 99–662 authorizes 100 percent federal funding and construction of the remaining control features contingent upon the favorable evaluation of the panel.

Congress appropriated $5 million in fiscal year 1991, $3 million in fiscal year 1992, $6 million in fiscal year 1993, $4 million in fiscal year 1994 and $16 million in fiscal year 1995 which was in the President's Budget for the first time ever. These funds were to continue design and construction of Areas VI, VII, IX and X and the Crowell Brine Reservoir. Construction of part of the brine collection facilities (pump station and low flow dam) at Area X was initiated in September 1991 and is complete. Accelerated design of the remaining chloride control features was approved in fiscal year 1994 to permit construction as additional funds become available.

Real estate acquisition for Area VI, VII, IX, and the Crowell Brine Reservoir was scheduled to begin in fiscal year 1993, but was postponed pending the outcome of the economic re-evaluation report ordered by the Assistant Secretary of the Army for Civil Works which was subsequently approved in November 1993 and further instructed the Corps of Engineers to complete all remaining areas of the project.

As part of the process to complete a Supplemental Environmental Impact Statement (SEIS) USFWS objected to the project in August 1994. This was a surprise to the Corps or Engineers since they had been coordinating with USFWS since 1991 and there was no indication they would deliver a negative opinion. This has stopped all construction work and effectively delayed the project by one year even though the Corps is continuing with design and land acquisition.

The SFEIS was completed in August 1996; however, the ASA(CW) directed that a Supplement Assessment Report (SAR) be completed by February 1997. Presently, we are waiting for the release of the SFEIS and SAR for public review and comment.

3. *Red River below Denison Dam*.—Red River Levees and Bank Stabilization Below Denison Dam is the authorization for constructing levees, flood control structures and bank stabilization below Denison Dam. The facilities constructed under this authorization are the first lines of flood protection for the Red River Valley and its citizens. Accelerated and new caving of the river banks of the Red River continue to endanger existing flood control structures and levees as well as valuable agricultural lands, highways, railroads, utilities, home and other valuable resources and improvements within the Red River Valley.

A systematic program of bank stabilization and other flood control measures can prevent these disastrous losses that are presently occurring.

Because of the construction of the Red River Waterway Project, a dangerous tendency has developed to de-emphasize construction of flood control and bank stabilization works under the Red River Levees and Bank Stabilization program. This tendency should be halted and reversed least the impression be created that the program is no longer needed or has been completed. Following the disastrous flood of May 1990, there can be no doubt of the importance of properly maintained levees and of bank stabilization. All areas not protected by properly maintained levees were flooded and the only protection from enormous bank caving was where revetment projects have been constructed by the Corps.

The Red River Levees and Bank Stabilization Below Denison Dam Project is the only comprehensive flood control program on the Red River containing authorization for construction of a variety of flood control measures, levees and other flood control works. Some of the projects planned in the original authorization project have not

been completed and these must be constructed in order for the citizens of the Red River to derive necessary flood protection.

Only minimal funds have been appropriated by Congress for the Red River Levees and Stabilization Below Denison Dam in recent years. Bank caving on Red River has progressed in several locations to a critical state. Railroads, major public highways, levees and other flood control works are threatened, and unless action is taken in the near future, these facilities will be destroyed, endangering lives and property of the citizens of the Red River Valley.

Another example of flood control work needed is levee reshaping along the main stem of Red River in the state of Arkansas. Many of these levee sections were severely tested by the May 1990 flood, and it is apparent that reshaping is needed to increase their integrity, substantially reduce maintenance costs, and provide additional structural strength at appropriate elevations needed to protect citizens, agricultural land and transportation systems. The Corps has completed an engineering study of the Levees on the Red River from Index, AR to the Louisiana State Line to establish and prioritize levee locations that have deficient grades, slopes and crown. This report included the recommendations with construction costs for all identified areas. Any funds not expended for the engineering study should be applied to the highest priority area to develop contracts and construction plans and drawings. The first phase of construction at the Miller County Levee System was completed in 1995.

In summary, it is imperative that Red River Levees and Bank Stabilization Below Denison Dam continue as authorized by Congress and that adequate funding be appropriated to accomplish the construction of this needed protection.

4. *Emergency bank protection*.—Although Federal projects have been authorized for flood control and navigation, many active caving banks cannot be stabilized because they are not yet sufficiently advanced or not included in earlier authorizations. The result is continuing, rampant destruction of valuable lands, threatening vital flood control facilities and endangering high-cost improvements such as bridges, pipelines, highways, railroads, utilities, cities and towns.

It is urgent that adequate funding of the item "Emergency Bank Protection" be continued to construct bank stabilization work as early as possible in the most critical locations instead of waiting several more years and experiencing the loss of millions of dollars due to damages. Further, continued neglect of these caving banks will substantially worsen alignment of the River, making future navigation realignment and stabilization much more costly and difficult. Many presently caving banks have an existing alignment that is usable for the navigation channel and should be preserved now.

5. *Bank stabilization—Index, Arkansas to Denison Dam.—Widely fluctuating stages and high flows during the past several years have caused sharp increases in bank caving along the Red River from Index, AR to Denison Dam. This accelerated bank caving has caused the loss of valuable, vital improvements and non-replaceable prime agricultural lands. Flood control structures and levees which protect the Valley from disastrous floods are also endangered. These disastrous losses can be stopped by a systematic program of bank stabilization. Progressive construction of such a program is absolutely essential to the safety growth and well-being of the Red River Valley. To further delay this vitally needed protection would be short-sighted.*

In view of the fact that construction of bank stabilization is so important to the citizens along the Red River boundary of Oklahoma and Texas we strongly recommend allowing the Corps of Engineers to proceed with a "demonstration project." There are new techniques which we believe are less expensive with better results than the traditional methods. One new technique is the underwater bendway weir. This demonstration project will be evaluated along with the ongoing 'sediment transport' study to determine the potential for a large scale bank stabilization project.

6. *Red River waterway project navigation to Shreveport-Bossier City*.—The Red River Valley Association and Louisiana delegation are appreciative for the completion of Locks and Dams 4 and 5. Navigation to Shreveport-Bossier City will significantly boost the economy throughout the river basin.

There is still work ahead of us to maintain and develop the navigation channel. It is also imperative that funds be appropriated to continue construction on navigation structures for this waterway to insure reliable, safe commercial navigation.

The Red River Valley Association encourages and supports the continuation of the Loggy Bayou mitigation project and initiation of the Bayou Bodcaw mitigation. These are important environmental projects for the overall system of the Red River.

Recognizing that recreation is an integral component of the Red River Waterway Project, the Red River Valley Association supports the development of recreational facilities as a part of the overall project construction. The Master Plan for Recre-

ation is being re-evaluated by the Red River Waterway Commission of Louisiana and the Corps of Engineers. We support a quick completion of this re-evaluation, public comment, and then funding to construct the recommended sites.

7. *No additional information.*

8. *Aloha-Rigolette project.*—This project, initially authorized in 1941 and constructed during the 1948–54 period, provides for the protection during high stages of the Red River of some 58,000 acres of alluvial land. Drainage from 340,000 acres that must flow through protected areas during lower river stages is disposed of by gravity flow through two 10 foot by 10 foot gated concrete drainage structures in the levee at the lower end of the project. This protected area has continued to develop agriculturally since construction of the project and now additional gates are needed to allow adequate gravity drainage during low river stages. As a result, local interests requested that additional studies be made of the project, paying particular attention to the adequacy of the flood gate which has now been determined to be significantly inadequate for current conditions.

A feasibility study was completed by the New Orleans District, Corps of Engineers in June 1989. The Red River Valley Association urges that Congress appropriate the full capability of the Corps fiscal year 1998 budget to continue construction activities for the project on the Bayou Darrow flood gate, clearing and snagging of channels, the low flow structure and continued mitigation.

9. *McKinney Bayou project, AR.*—The Corps of Engineers completed a reconnaissance study of drainage in Miller County, Arkansas. The project is known as the McKinney Bayou Project as it is the principal drainage ditch in the County. Due to the thousands of acres of land cleared in Miller County during the past 25 years, the ditch is grossly inadequate to handle the drainage after heavy rains. The Reconnaissance study had a high B/C ratio and, therefore, was recommended to go directly to Planning, engineering and design, (PED). A local sponsor has been identified to cost share PED; Federal 75 percent/local sponsor 25 percent.

10. *Bowie County levee, TX.*—Major flooding along the Red River in May 1990 severely tested the integrity of the Bowie County levee located along the right bank of the Red River north of Texarkana, Texas. Had it not been for emergency measures taken by the U.S. Army Corps of Engineers and local interests, the levee would have been destroyed during the flood. It is the opinion of the Corps that the levee would fail if subjected to another flood of the magnitude encountered in May 1990. Replacement or restoration of the levee is necessary to protect approximately 7,000 acres of prime agricultural land as well as residential and farm structures.

Additionally, this levee system protects the land side of the Miller County levees in Arkansas. The Arkansas levees are being rehabilitated at full federal expense; therefore, a case has been made that the Bonnie County levee should be funded the same as these levees. Again, the Arkansas levees would not be of any value should the Bowie County levee fail.

In fiscal year 1997, Congress directed the Corps to complete designs and specifications for two options; federally preferred and locally preferred options. It is our intention to have a fully funded federal project for the locally preferred option.

11. *McGrath Creek project.*—McGrath Creek is a tributary stream to Holliday Creek, and has a highly urbanized 5.6 square mile drainage area located in the heart of the City of Wichita Falls. On May 12 and 13 of 1982, a flood occurred which resulted in flood damage in the amount of 21.5 million dollars. Floods have reoccurred on the average of twice per year with annualized damage of approximately 1.6 million dollars each and every year. In 1986, floods in the Wichita Falls region resulted in two fatalities, one being at the juncture of Holliday Creek and McGrath Creek.

The City of Wichita Falls supports the construction of the $12,100,000 McGrath Creek Flood Control facility, and entered into a cost-sharing agreement with the federal government for the local match of 25 percent. Final plans and specifications have been completed by the Corps of Engineers. Construction has commenced and is a project supported by the Administration.

12. *Little River County, Ogen levee, AR.*—The Congress appropriated $150,000 in fiscal year 1992 and $237,000 and $400,000 in the ensuring fiscal years to conduct in Little River County a feasibility study. The feasibility study is to explore the modification of existing levees and the construction of new levees to avoid a possible repeat of the devastating flood in May of 1990. The PED cost will be 100 percent federally funded. We request funding and direction for the Corps to initiate and complete plans, engineering and design (PED).

13. *No additional information.*

14. *Twelve Mile Bayou Revetment.*—The Twelve Mile Bayou Revetment on the mainstem Red River, is not functioning properly and the Red River is eroding the bank behind the revetment. A federal levee, along this bank is dangerously close

to being threatened. The revetment must be reinforced in order to insure the integrity of the federal levee system.

15. *Bossier levee district, Bossier Parish, LA.*—There is a drainage channel issue which should be the responsibility of the Corps of Engineers to maintain. This is Loggy Bayou with its confluence on the Red River, river mile 194.1, with the channel in question extending approximately 8 miles upstream into Loggy Bayou.

Loggy Bayou is the final and only channel that drains a vast area of Northwest Louisiana and part of Arkansas water into the Red River. The headwaters start in Columbia County, Arkansas and the drainage area includes large parts of Webster, Beinville and Bossier Parishes in Louisiana. There are no other diversions for these waters to the Red River except through Loggy Bayou.

In 1943 the Bossier Levee District agreed to maintain the last 7.8 miles of Loggy Bayou before it enters the Red River. Conditions have changed drastically since 1943, to include: the diversion of Coushatta Bayou into the Loggy Bayou; the channel is now approximately 20 feet deeper due to increased drainage flows and the Red River Waterway Project has pooled the water into this section of Loggy Bayou permanently raising the water level. The Bossier Levee District does not have the equipment, expertise or funding to keep the channel maintained so there is now a real threat for increased flooding upstream. Since there have been considerable changes to the Loggy Bayou Watershed, beyond the control of the Bossier Levee District, and the waters drained are multi-state it is requested that the Corps of Engineers be directed to maintain the channel in Loggy Bayou, under the 'Red River Waterway Project', Operations and Maintenance, from its confluence with the Red River upstream for approximately 8 miles.

16. *No additional information.*

17. *No additional information.*

18. *No additional information.*

19. *No additional information.*

SUPPORT RESOLUTION: SHREVEPORT CHAMBER OF COMMERCE, SHREVEPORT, LA

TRANSPORTATION-WATER—RED RIVER NAVIGATION

Issue.—The Red River Waterway Project has been completed from the Mississippi River to Shreveport/Bossier City, Louisiana. Over the next few years the navigation structures (Dykes & Revetments) need to be adjusted and some may be added. In addition, it will take approximately $11 million per year to operate the system.

Why important.—For economic development to be fully realized we must operate the Red River in a reliable manner for industry to use it as a major transportation system. The navigation channel must be maintained at a 9-foot draft for safe use. If the channel is not properly maintained, industry will be reluctant to use the Red River. The Oxbows created by the project must be kept open to the river and allowed to become lakes. Funding must be appropriated to ensure this environmental initiative is maintained.

In fiscal year 1997 Congress authorized funding for a Regional Visitor Center for the Red River Waterway Project. It will be for dual sites within the visitation corridor with one site at Natchitoches,, LA and a second site at Shreveport/Bossier, LA. The fiscal year 1997 funding was to initiate design and construction. We request funding in fiscal year 1998 to continue this effort.

The project Recreational Master Plan has been completed and it is important to execute the plan as soon as possible. There is limited access to the Red River and these sites are necessary for safety as well as the economic benefits of recreation.

Our position.—We thank you for the funds which completed the Red River Waterway Project and we request funding to continue on projects for navigation and recreation.

It is imperative that $11 million be appropriated for Operation & Maintenance functions for a safe, reliable waterway.

We support the dual site Visitor Center for the Red River Waterway and request continued funding for the design and construction activities.

TRANSPORTATION-WATER—RED RIVER BASIN CHLORIDE CONTROL PROJECT

Issue.—The first comprehensive study of the water quality of the Red River basin was initiated in 1957 by the U.S. Public Health Service under the authorization of the Federal Water Pollution Control Act. It was determined that ten natural salt source areas contribute a daily average of 3,600 tons of salt per day to the river. This renders downstream waters unusable for most purposes. Structural measures to help control the chloride pollution at 8 of the 10 sites were developed by the Tulsa District, Corps of Engineers. These plans led to Congressional authorization

in the Flood Control Acts of 1962, 1966 and 1970. The first structure was completed in January 1964 and the second in May 1987. The Water Resources Development Act of 1986 authorized the construction of the remaining sites.

Approximately one-third of the project cost has been expended. The total project is expected to cost $303 million.

The Tulsa District Corps of Engineers has completed the Supplement to the Environmental Impact Statement (SEIS). The Assistant Secretary of the Army (CW) directed the District to submit a Supplemental Assessment Report on alternatives by January 31, 1997.

Why important.—Natural mineral pollutants (primarily chlorides and sulfates) in the upper reaches of the Red River Basin are rendering downstream waters unusable for most purposes; therefore, the Red River Chloride Project is imperative in order to realize full utilization of the surface water supplies in Louisiana (as well as Texas, Oklahoma and Arkansas). More than 1,000 miles of streams in the river system are severely contaminated by naturally occurring brine and is not suitable for municipal, industrial or agricultural purposes.

The benefits of the Red River Basin Chloride Control Project will be improvements in water quality that will allow use for municipal, industrial, agricultural and recreational purposes. The added benefit will be the jobs created resulting from the implementation of the Chloride project.

Our position.—We support this project in its present form and request the release of the SEIS for public review and comment. We support and encourage funding at the levels necessary to complete the remaining costs of the project by the year 2003. Construction must resume in 1998. It is imperative that the pipeline from Area VIII pumpstation to Truscott Brine Reservoir be constructed, as well as the initiation of Crowell Brine Reservoir.

TRANSPORTATION-WATER—CADDO-BOSSIER PARISHES PORT COMMISSION

Issue.—Development of the Caddo-Bossier Port Complex to access usage of the $1.8 billion Red River Waterway Project and to take advantage of the $68,000,000 annual transportation savings projected by the U.S. Army Corps of Engineers. Local investment through December 1996 is $55,000,000 with private investment projected at $55,200,000 by five (5) companies. The first ground breaking by Red River Terminals (Atlas Processing/Pennzoil Products Company and Hollywood Marine), was held January 25, 1996 for a petroleum distribution complex to be operational by March 1997.

Why important.—Create 5,000 direct jobs, coupled with up to 15,000 indirect jobs in our communities over a 20 year period.

To compete in a global economy.

Lower transportation costs (annual savings $68,831,000).

Private investment potential. More than $55,000,000 in private investment is today projected at the Port complex site.

A multi-transportation network is now in place with I–49, I–20, proposed I–69, Shreveport Regional Airport, three railroads and Red River water transportation.

Our position.—Support the continuation of funding for Red River Waterway maintenance as presented in the fiscal year 1997 Federal budget request in order to insure navigation to the Port of Shreveport Bossier and to have the Red River working for each area business and citizen.

PREPARED STATEMENT OF THE CADDO/BOSSIER PORT COMMISSION

On behalf of the citizens of Northwest Louisiana, the Caddo-Bossier Parishes Port Commission strongly urges the Congress of the United States to allocate the necessary monies for the Red River Waterway Project for fiscal year 1998 so the Red River can be operated in a reliable manner for industry to use it and in order to ensure the viability of the $1.8 billion investment made over the last twenty years by the taxpayers of this country.

The Port of Shreveport-Bossier is beginning regular operations at the Port complex site this year. It stands today as a longtime dream with a potential proving to exceed even the most optimistic projections. With local taxpayer investment guaranteed by a 1993 property tax, the Port's infrastructure is growing to meet the demands of a rapidly expanding customer base. Public investment in the Port complex today stands at more than $58,000,000. Projected investment by private business announced at this time is more than $55,000,000.

Progress toward our goal of becoming a premier multi-modal transportation system is excellent. Attached for your information is Port background information, highlights of 1996 accomplishments and the Board of Commissioner's 1997 program of work.

Results of these efforts should provide a sense of pride to all members of Congress who believed in the Red River Navigation Project. You recognized the possible benefits, the job-generating capabilities, the advantageous cost benefit ratios. And these are becoming reality at The Port of Shreveport-Bossier.

MISSION

To be a public stimulus for economic development in the region by providing multi-modal transportation service and infrastructure for domestic and international commerce and trade which will foster job creation, coupled with dollar investment, in and for Caddo and Bossier Parishes.

GOVERNANCE/OPERATION

The Port of Shreveport-Bossier is governed by the nine member Caddo-Bossier Port Commission. The Commission sets policies and regulates waterborne traffic and commerce through Caddo and Bossier parishes. An eight member staff manages the Port's daily operations. Logistic Services, Inc./SSA is the Port Operator.

LOCATION/SIZE OF THE PORT

The Port of Shreveport-Bossier owns (1) 2,000 acres located just south of Shreveport's city limits on the west side of Red River and bordered by Louisiana Highway 1 and the Union Pacific main line and (2) a 10-acre site in southwest Shreveport, the Ark-La-Tex Intermodal Center.

RIVER PORT SITE CHARACTERISTICS

Shallowdraft navigation channel 9 feet deep by 200 feet wide.
2,000 acre complex with heavy and light industrial zoning.
125 acres devoted to river usage infrastructure.
Full utilities, 3.5 million gallon above ground water storage.
Union Pacific main line rail, connection with KCS.
22,500 linear feet rail track within facility.
Rapid access to I–20 and I–49.
Two 24 foot wide access roads off of LA Highway 1, both of which exceed state highway load limits.
General cargo and liquid wharves.
Security on site.
Land available for lease; suitable for industrial development.

AN INTERMODAL PORT

Committed to intermodalism from the beginning, the Port of Shreveport-Bossier gives shippers a complete range of transportation options—rail, truck and barge. Intermodal Container Handling Freight facility has COFC/TOFC handling capabilities for container freight.

HIGHLIGHTS 1996 ACCOMPLISHMENT

1. Red River Terminals held a groundbreaking press conference in January on their liquid bulk storage terminal property at the Port complex and construction continued throughout the year.

2. Progress on Port complex operational status continued.

A. Cargo began moving at the end of the year even though Port infrastructure was not yet complete. The first export product was shipped October 17 by Beaird Industries. A 331,000 pound pressure vessel was followed by three others, bound for Nigeria through Morgan City. In November, six barges of rock arrived as a joint venture between CTS&D and Vulcan Materials.

B. The Board of Commissioners approved the purchase of the fleet/switch boat M/V Colville in November. The 800 hp boat is being reconditioned in Orange, TX for delivery in 1997.

C. Security service was initiated.

D. Began acquisition process for two rail switch engines.

E. Proposals were accepted for gas distribution network system.

3. Progress on Port complex infrastructure and facilities continued.

A. Construction essentially completed in 1996: (1) water service—extension of lines, 2.5 million gallon elevated storage tank, and booster stations (water and fire); (2) sewer service; (3) second liquid wharf (Red River Terminals); and (4) 15,000 if on-dock heavy rail with side track and truck/rail certified weigh scales.

B. Under construction: (1) 7,500 if rail track extension south; (2) 30,000 sf general cargo transit warehouse with traversing 50 ton overhead cantilevered bridge crane; and (3) 2.5 acres open storage.

C. In design: (1) additional liquid dock; (2) road and rail north extension; and (3) Reyncor access road.

4. Acquired 7 acres for location of City of Shreveport fire station which will serve Port complex and southeast Shreveport. Temporary facilities put in place.

5. Received fiscal year 1996–97 Capital Outlay Priority Two approval for $1 million for land acquisition and fiscal year 1996–97 Port Priority Program funding approval of $1.5 million for road and rail extensions. Capital Outlay money not allocated by the end of the year.

6. Applications turned in for further funding to (1) Capital Outlay, resubmitted $1 land acquisition in case the money is not funded in fiscal year 1996–97 funds; (2) Port Priority (a) $3 million for road and rail extension and (b) $360,000 for fleeting dolphins; and (3) EDA Preapplication for $25,000 for Strategic Master Plan assistance.

7. Strategic Master Plan process initiated and consultant selected.

8. Foreign Trade Zone # 145 expansion application approved.

9. The second annual Port Night, jointly sponsored by our Port, the Port of New Orleans and the International Trade Association of Dallas-Fort Worth, was successfully held in September. Re-edited Port video presented during program.

BOARD OF COMMISSIONERS 1997 PLAN OF ACTION

1. Continue to develop necessary infrastructure and facilities, following the adopted Infrastructure Plan, adapting to the needs of customers as they occur. (a) Work to close out major infrastructure projects under construction. (b) Facilitate customer-driven infrastructure demands. (c) Consider environmental enhancements. (d) Expand river fleeting capacity.

2. Attract (1) users for Port multimodal transportation services, expanding tonnages, and (2) businesses and industries for Port complex location.

(a) Begin marketing the Port as an operating multimodal transportation facilitator, continuing marketing efforts along the I–20 and I–30 corridors between Shreveport and Dallas-Fort Worth metroplex.

—Continue Port Night with the Port of New Orleans in Dallas-Fort Worth.

—Monitor one-on-one contacts between the Port, Logistic Services, and Port users.

(b) Continue to work closely with local Port users and area businesses.

(c) Update promotional materials, modifying 1993 marketing brochure and printing small pamphlet.

(d) Continue to work with other economic development agencies.

(e) Participate in regional/national business promotions of Shreveport-Bossier.

(f) Facilitate foreign investment/international industrial recruitment.

3. Develop/monitor Port operations in concert with Port Operator Logistic Services, Inc., emphasizing the transfer from construction activities to full operation.

(a) Fill operating equipment needs, specifically fleet boat, locomotives, safety boat, tractor/bushhog, POL spill equipment and fire station rolling stock.

(b) Make appropriate staffing arrangements.

(c) Establish operating SOP's, parameters, tariffs in concert with Port Safety Council and Logistic Services.

4. Work with the selected consultant to develop a longterm Strategic Master Plan for the Port of Shreveport-Bossier, ensuring the Port's development and best use of resources to the Year 2010.

5. Maximize available financial resources, continuing to leverage local tax dollars to maximize taxpayer investment.

6. Continue to pursue additional Port land expansion as needs transpire.

7. Communicate activities to all citizens of Caddo and Bossier Parishes, continuing minutes mail-out and speaking engagements.

8. Continue interaction with city, parish, state, and federal authorities/agencies on legislative issues of importance.

PREPARED STATEMENT OF TED M. FALGOUT, EXECUTIVE DIRECTOR, PORT FOURCHON, LA

The 1996 WRDA authorized Port Fourchon, LA as a new start project. Unfortunately, the Clinton Administration Budget does not propose funding this project in fiscal year 1998.

Few people recognized the tremendous importance of Port Fourchon to this Nation's energy supply. Mainly because its significance has suddenly skyrocketed with

the passage of the Deepwater Royalty Relief Act by Congress and the resulting boom in deepwater drilling activity this country is experiencing.

Port Fourchon, geographically, economically, and environmentally is unquestionably the most advantageous land base facility to support the record discoveries being drilled in deep waters of the Central Gulf of Mexico. An astounding 75 percent of the 82 deepwater prospects identified in the Gulf are in the Port Fourchon service area.

This has resulted in unprecedented growth of the port and tripling of cargo tonnage in just three years. Currently over 30 million tons are being shipped intermodally through Port Fourchon and this number is expected to continue to dramatically increase.

The new generation deepwater supply and service vessels are dependent on the deeper drafts authorized by Congress. Companies are currently investing hundreds of millions of dollars in these new generation vessels with plans to operate them out of Port Fourchon. It is essential that this channel be dredged this fall before the winter low tides cause serious navigation problems.

None of the justification I have just provided was included in the benefits of the Corps of Engineer Study which led to project inclusion in WRDA 96. This is new business directly associated with deepwater drilling and is critical to this country's energy needs. This same activity is generating the U. S. Treasury over $2 billion annually in federal lease sales and royalties. The last two quarterly lease sales have generated a record $1.3 billion.I11In addition, Port Fourchon is the land base facility for the Louisiana Offshore Oil Port (LOOP), this nation's only offshore oil port. In 1996, LOOP handled 13 percent of the entire nation's imported oil. It is connected by pipeline to 30 percent of the U. S. refining capacity. It also generates the U. S. Treasury millions of dollars in imported duties.

Considering the aforementioned National Energy significance and substantial revenue base, it is almost unbelievable that the Port Fourchon, LA new start project is not included in the Administration budget. Adding to this injustice is the minimal amount of money needed to construct this project.

It is estimated that the total Port Fourchon Navigation Project cost would be approximately $5.7 million. There currently exists a tremendous window of opportunity in that the West Belle Pass Coastal Wetlands Protection and Restoration Act (CWPRA) project is scheduled for construction this fall. This project, although not a navigation project, is being constructed by the Corps and will result in much of the channel being dredged as a borrow area for fill needed in marsh restoration. It is estimated, for an additional million dollars in federal appropriation, the congressionally authorized navigation project could be constructed. This would result in the savings of millions in first costs construction of the Port Fourchon navigation improvements and render the channel deep before the winter low tides cause severe impact.

This Commission respectfully requests you seek to include in the Energy and Water Appropriations Bill, language that would direct the Secretary of the Army through the Chief of Engineers, to begin construction on the Port Fourchon, Louisiana Channel in the amount of $1,000,000.

Please do not hesitate to call if any further information is needed or this Commission can be of any assistance. We strongly feel that a visit by you or your committee to this unique area would be extremely beneficial and we offer to make all necessary arrangements.

PREPARED STATEMENT OF RONNIE A. RILEY, VICE PRESIDENT, LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION

Mr. Chairman and Members of the committee, I am Ronnie Riley, County Executive of Gibson County, Tennessee and serve as the Tennessee Vice-President of Lower Mississippi Valley Flood Control Association. I appreciate the opportunity to make this presentation a part of the official congressional record relative to funding for Mississippi River and Tributaries Projects.

Mr. Chairman, the infrastructure is vital to the economic, social and cultural well being of this nation. The Mississippi River and Tributaries Project deals with all the aspects of the nation's water resources infrastructure. The policies being proposed for upfront funding at this time would in effect lock up funds unnecessarily at the expense of completing projects already authorized and begun.

This action needs the full debate out in the open by the Congress. It does not need to be determined by some appointed bureaucrats. I can personally testify to the devastating losses our citizens in the lower Mississippi Valley are continuing to suffer as a result of the Mississippi River and Tributaries Project not yet being completed.

In 1982 I saw our County Courthouse surrounded on three sides by water less than 100 yards away. The same event resulted in the loss of two (2) lives. This scenario is repeated and will continue to be repeated in the valley until the Mississippi River and Tributaries Project is completed. The Corps has capabilities to properly expend approximately $350,000,000. We urge you to seriously consider restoring funding to that level which will assure an orderly and timely completion of this much needed project.

Thank you very much for allowing me to make this statement a part of the record.

PREPARED STATEMENT OF JAMES E. WANAMAKER, CHIEF ENGINEER, BOARD OF MISSISSIPPI LEVEE COMMISSIONERS

Mr. Chairman and Members of the Committee: I am James E. Wanamaker, Chief Engineer for the Board of Mississippi Levee Commissioners, Greenville, Mississippi, and I have the privilege of presenting this statement on behalf of this Board and the citizens of this Levee District. This District consists of the counties of Bolivar, Issaquena, Sharkey, Washington, and parts of Humphreys and Warren in the Lower Yazoo Basin in Mississippi.

The Lower Mississippi Valley Flood Control Association will present a general statement in support of the appropriation of $350,000,000 for fiscal year 1998 for the construction, surveys, advanced engineering and the operation and maintenance of the Mississippi River and Tributaries Project. The need for the timely completion of this Project is currently emphasized by the flooding taking place in the Valley. The Lower Mississippi River receives flood water from 41 percent of the continental United States. Our section of the Mississippi River has experienced water levels above flood stage for the past 5 years.

The proposal by the administration to initiate full funding of flood control projects must be rejected by the Congress. This policy if adopted will hold back millions of dollars for the construction of many flood control, navigation, and environmental restoration projects that could be utilized to benefit the economy of the Nation. The current policy of continuing authority has worked for decades to assure that the country's economic and environmental status is the envy of the world. This change will ignore the needs of the people in the Mississippi Valley.

It is imperative that the work on the Mainline Mississippi River Levee Enlargement Project move forward as fast as funding will allow. For many years the ability of the local sponsor to furnish rights of way controlled the construction schedule for this work. Projected outyear funding for these much needed projects is now the controlling factor. Alternative construction schedules being considered by the administration will extend the completion date and could increase the overall project cost by as much as 300 percent. We are requesting that funding for the Mississippi River Levee Item be increased by $3,000,000 to provide the Vicksburg District with the $11,000,000 needed to insure timely completion of the enlargement work in Mississippi, Louisiana and Arkansas.

As we have discussed for the past several years the Reformulation of all remaining work in the Yazoo Basin has delayed construction for as much as 5 years on some items. Now that construction has been restarted on the Upper Steele Bayou and Upper Yazoo portions of this Project, additional funding to allow the Corps of Engineers to proceed at maximum capability is critical.

We request that the Congress provide $6,000,000 for the Yazoo Basin, Big Sunflower River and Tributaries Item to insure that work protecting the City of Greenville is completed before another storm event similar to 1991 is experienced. This money will allow Item 2 on Black Bayou to continue and the award of Item 2 on Main Canal that extends into the City of Greenville.

Work on the Upper Yazoo River is continuing northward toward Greenwood, Lambert, Marks and Tutwiler. Again, we request that funding be sufficient to allow the Corps of Engineers to proceed at maximum capabilities completing as much of this project as possible before another storm similar to 1991 is experienced in the Delta. We ask the Congress to provide $15,000,000 for the Yazoo Basin, Upper Yazoo Project.

With the funding that you have so generously provided to complete the Engineering Report and Supplemental Environmental Impact Statement, the Levee Boards are ready to initiate construction of the Big Sunflower River-Bogue Phalia Operation and Maintenance Project at the earliest possible date. The residents of south Washington county have just last week been on the brink of another flood disaster, and continue to watch spring storms pass through wondering if their homes will flood again this year. We request that the Operations and Maintenance budget in-

clude sufficient funds to initiate construction of this Project. The Corps will require $3,000,000 to initiate construction.

The completion of the Yazoo Basin, Demonstration Erosion Control Project, will reduce the need for maintenance funds in future years. The removal of sediment from the waters exiting the hill area of Mississippi into the Delta's streams will help reduce the frequency of maintenance dredging. This will also help The Corps of Engineers in the operation of the flood control reservoirs by allowing the design discharges to take place, reducing the threat of flooding to the eastern portions of the Delta. We request that the appropriation of $17,000,000 be included for fiscal year 1998.

We are grateful for the consideration given to us each year by the Committee and appreciate the opportunity to present our requests to you at this time.

PREPARED STATEMENT OF M.V. WILLIAMS, PRESIDENT, WEST TENNESSEE TRIBUTARIES ASSOCIATION

Mr. Chairman and distinguished members of the Committee, my name is M.V. Williams and my home is in Friendship, Tennessee between the Middle and South Forks of the Forked Deer River. I am the President of the West Tennessee Tributaries Association. It is also my pleasure to serve as Chairman of the Executive Committee of the Lower Mississippi Valley Flood Control Association with headquarters in Memphis, Tennessee. This statement on behalf of the Association presents their views on the fiscal year 1998 Budget for the Mississippi River and Tributaries Project. I will present several items of general interest to all our Membership. Other Members of the Association will present statements that will concern specific items of interest.

Since there are new members of the Sub-Committee I will briefly discuss the Lower Mississippi Valley Flood Control Association which is an Agency composed almost entirely of public bodies having local responsibility for flood control, drainage, bank stabilization and navigation improvements in parts of Illinois, Kentucky, Mississippi, Tennessee, Arkansas, Missouri and Louisiana. Our members are public officials who for the most part are elected by the people. The Association represents practically all of the levee and drainage districts, municipalities, port and harbor commissions and other state agencies in the Lower Mississippi Valley, extending from Cape Girardeau, Missouri to the Gulf of Mexico. These organizations and agencies are political subdivisions of the various states in which they are organized and function. We provide an agency through which the people of the Lower Mississippi Valley may speak and act jointly on all flood control, navigation, bank stabilization and major drainage problems. We have appeared before the Sub-Committee and served the people in the Lower Mississippi Valley for well over sixty years.

In the past the principal reason for our appearance before the Sub-Committee was to provide data to justify adequate appropriations to complete the Mississippi River and Tributaries project as quickly as possible. That has not changed even though this is a unique year and the first time in those 60 plus years that we have not been granted the opportunity to present oral testimony. We are disappointed that this long-standing experience has been terminated this year and we express the hope that this is a temporary condition that will only last for this one year. To extend this restriction to future years will, we believe, be detrimental to the well being of our Country.

We have closely examined the President's Budget Request for fiscal year 1998 and find that it is completely inadequate for the Mississippi River and Tributaries Project. The $266,000,000 that the President has requested is the first time since fiscal year 1982 that the budget request for the MR&T Project has fallen below $300,000,000.

This Association has long held the firm conviction that an Annual Appropriation of $400,000,000 is required to complete the Mississippi River and Tributaries Project in the most economically feasible time. We request that this Committee strongly consider a minimum appropriation for fiscal year 1998 for the Mississippi River and Tributaries project of $350,000,000.

In requesting that such moneys be appropriated for flood control and navigation works of the Lower Mississippi Valley, we are not unmindful of the fact that in these critical times our Nation is being called upon to rectify an economic condition that needs immediate attention. We feel that we are justified in urging appropriations for our project for the reason that the assets and resources of this great Nation must not be neglected during these times. We know of no other appropriation which contributes as much to national wealth and resources as flood control and navigation for the major rivers of this country. Millions of acres which were overflow lands

decades ago are now highly productive and contributing to our national wealth. These lands by reason of their geographic location are the most fertile of the nation. They produce an abundance of food and fiber for the general welfare and prosperity of the country. The inland waterways of the nation provide the cheapest and in some cases the only method to move bulk commodities that are also absolutely essential to the general welfare and prosperity of the country. Moneys appropriated by Congress for flood control and navigation has and will augment our natural resources and improve our economic well-being. The appropriations made by Congress for the Mississippi River and Tributaries project are investments in this nation's future.

The Mississippi River and Tributaries project more than paid for itself in reduced monetary losses in only one flood, but this is not the complete story. The real benefit of this project are the reduction in human suffering, the improved health and the well being of the citizens. All of the approved methods known to us for making economic and environmental project analysis fall far short of fully evaluating these human needs. Since the productivity of the millions of acres of low lying lands adjacent to the main stem of the Lower Mississippi River are totally dependent upon the integrity of the flood control works, any major slow down in the completion of this project will represent economic strangulation to this productive portion of our nation. We are aware of the ever increasing demand on the federal dollar and the many complex problems that the Congress is confronted with, but we believe that this project is economically sound, environmentally necessary, and we urge its completion with all deliberate haste.

In addition to our problems with the inadequate funding in the President's Budget request, we also have a tremendous problem with the purposed policy change contained in the fiscal year 1998 Budget.

For the third time in recent years, the last significant effort was made during the Carter Administration, the Executive Department has proposed in the Budget Request that full funding of Corps of Engineers Construction projects be provided when the project is initiated. This policy, if approved by the Congress, would be a major change in funding of water resources projects. This policy would eliminate many projects for funding and extend the schedule for many projects which are funded. If adopted by the Congress it would preobligate the Appropriation of funds for a few projects over the next 5 years and would not allow for funding of large projects and would force priorities on smaller projects.

The greatest damage from this policy change would be to take the Congress out of its historical role of legislating policy for the flood control and navigation programs that have played a large part in making the United States the greatest Industrial and Commercial nation on the globe—with its resources, its wealth and productive capability that has saved the world in war and sustained it through many years of troubled peace.

The Executive Department is again attempting to supplant this historic Congressional role and assume these police making functions. In past attempts to convert civil works programs to full funding, the Congress in its wisdom has soundly rejected these attempts. We would urge this Congress to do the same, the alternative will be that policy for water resources development will rest with civil servants desk-bound in Washington, ignorant of our needs and unaccountable to our people.

In closing let me reemphasize that federal works projects with proven merit such as the Mississippi River and Tributaries Project represent a sound federal investment which will return to the taxpayers of this country generous dividends. Such federal investments contribute to the economic well being of the Nation by reducing unemployment; adding to the stability and economic growth of agriculture and industry; and providing a flood free environment for the welfare of the people of the Mississippi Valley.

We reaffirm the position we have always held that the physical geography of the Mississippi River is such that flood control interests do not stop at the main river but extend upstream along the adjacent tributary streams and valleys. The Flood Control plan on the Lower Mississippi River therefore cannot be considered adequate or complete until the flood control plans for these valleys, authorized as a part of the Mississippi River and Tributaries project, are completed.

Under our Constitutional form of Government the Citizens as the final authority and for whose protection and welfare our Government exists, are entitled to the best protection from Floods our Nation is capable of devising. We would respectfully request that this committee consider that during its deliberations of the Corps of Engineer's fiscal year 1998 Appropriations.

PREPARED STATEMENT OF BILLY J. FELTY, CHIEF ENGINEER, ST. FRANCIS LEVEE DISTRICT, ARKANSAS

Mr. Chairman and Members of the Committee: My name is Bill Felty. I am Chief Engineer of the St. Francis Levee District of Arkansas. I live in West Memphis, Arkansas which is located at the West side of the Mississippi River in the St. Francis Basin. I am filing this statement in behalf of the Levee and Drainage Districts in the entire St. Francis Basin, Arkansas and Missouri, which depend upon the major drainage channels included in the St. Francis Basin Project for outlets to the complex drainage system in the Basin.

Throughout the entire Lower Mississippi Valley we are witnessing a great industrial expansion and the economy of the area is improving rapidly each year. Agriculture a few years ago was the sole basis for the economy along the Mississippi River and within the Basin, is now sharing its importance with industry. This growth and prosperity could not exist without drainage and flood protection. The first authorization for work in the St. Francis Basin Project was in 1936. Local interests in Missouri and Arkansas have been working on a drainage system along the Mississippi River beginning in 1893 and have cooperated fully with each other in seeking funds and attempting to expedite the work which is so important to the entire Basin. The Basin Projects provide essential flood control and drainage improvements in an 8,400 square mile area. The only outlets for the drainage from the Missouri part of the Basin are through Arkansas and the complex system of levees and channels are of great economic importance to both states. There are a large number of individuals present at this hearing to show their support for the Project.

The Civil Works Budget for fiscal year 1998 for Mississippi River and Tributaries appropriation includes the sum of $5,000,000 for the St. Francis Basin, Missouri and Arkansas. We believe the budgeted amounts are sufficient to provide continued progress toward completion of the St. Francis Basin Project. We also support the appropriations of the budgeted amounts for the other items in the Mississippi River and Tributaries Project, a total of $350,000,000. We feel our needs will be given fair consideration by this Committee and we appreciate the work you do to advance the development of the water resource projects.

PREPARED STATEMENT OF AUBREY J. LAPLACE, PRESIDENT, BOARD OF COMMISSIONERS, PONTCHARTRAIN LEVEE DISTRICT

MISSISSIPPI RIVER AND TRIBUTARIES FLOOD CONTROL PROJECT

Fiscal year 1998 recommendations.—These two items are of indispensable importance to the State of Louisiana. There are serious project deficiencies in the Pontchartrain Levee District. Federal appropriations must continue at adequate levels to move forward.

$29,411,000 for Mississippi River levees

In the Pontchartrain Levee District several reaches of main line levee must be enlarged and slope paved to advance from the current status of partial flood protection. Priority is recommended for two particular reaches, that is, Marchand to Darrow and Remy to Garyville. Both the items, and others, have been delayed from construction due to lack of funding.

Future levee enlargements and slope paving are required in five of six parishes of the Levee District. The Board of Commissioners Pontchartrain Levee District urges the Subcommittees to appropriate at least $29,411,000 in fiscal year 1998 for Mississippi River levees.

$46,790,000 for channel improvement

Main line levees must be protected from caving banks throughout this lower river reach where extremely narrow battures are the last line of defense against levee crevasses and failures. If caving banks are not controlled the only answer is "setback". Simply stated there is no room remaining for levee setbacks in the Pontchartrain Levee District. Revetment construction must be annually funded to prevent levee failures, land losses and unending relocations. This item also benefits the 55-foot deep navigation channel. The Pontchartrain Levee District recommends at least $46,790,000 be appropriated for fiscal year 1998 which concurs with the President's budget.

$343,867,000 for overall MR&T project

THE LEVEE DISTRICT

The Pontchartrain Levee District extends downstream from the City of Baton Rouge to the New Orleans area, a distance of 115 river miles, includes the east (left descending) bank of the Mississippi River, and is comprised of portions of East Baton Rouge, Iberville, Ascension, St. James, St. John the Baptist and St. Charles Parishes. The Mississippi River east bank levee is continuous throughout the Levee District, including the Bonnet Carre Floodway. We serve as the local sponsor for the St. Charles Parish Hurricane Protection Levee, now in the fifth year of construction, designed to protect the Parish, a portion of New Orleans and its International Airport from hurricane tides.

Extensive development of major industries has taken place in the Pontchartrain Levee District and is continuing. Along with industrial growth, our Levee District is experiencing dramatic increase in residential and urban expansions. Substantial portions of the Levee District area are used for agriculture. Three nationally ranked deep-water ports are companions to the Pontchartrain Levee District—the Baton Rouge Port, South Louisiana Port, and New Orleans Port. The New Orleans International Airport is also located within the district.

The District contains numerous pipeline systems which deliver goods to nationwide distribution points. Interstate Highways 10 and 55 and a number of major U.S. Highways traverse the Levee District, along with major railroads. The Mississippi River 55-foot deep ship channel is the western Levee District boundary. Four bridges cross the River in our District.

All these features and many other improvements along with more than one million residents are protected by the Mississippi River and Tributaries Flood Control Project in this Levee District. Only through continuous, effective flood control improvements and maintenance can this area and the Lower River Valley meet requirements to serve national needs for our economy and continued growth.

COMMENTS

The Pontchartrain Levee District has full realization of the necessity of keeping this Subcommittee advised of current and future needs for federal monetary support on vital items of the MR&T Flood Control Project. In 1995 and 1996 the Senate Subcommittee refused to give audience to the Lower Mississippi Valley Flood Control Association seven state delegation. This year we have been advised that oral testimony will be heard from governmental agencies only. This is a great travesty of justice.

The House Subcommittee has likewise, for the first time, announced no oral testimony from our group. What a tragedy. Such actions seriously erode the partnership that has been built between the Corps of Engineers and local sponsors. We trust that this pattern will revert back to the sixty-three year practice of hearing our delegation. Three representatives from the Pontchartrain Levee District are present today desiring to present views to the Subcommittees—they are Commissioner Joseph Gautreau, Vice President; Mike Babin, Project Manager; and Gerald Dyson, Executive Assistant.

NEAR FUTURE IS UNCERTAIN—ITS UP TO CONGRESS

In the search for new ways to accomplish required flood control and other water resources projects, Congress must remain mindful not to jerk the rug out from under its own feet and our own. Without protection there will be few jobs, farms, industries, businesses, voters and related activities. Congress should know that we in the Lower Mississippi Valley do not have the option to say "No". Also it stands that Congress should not have the option to reduce, remove or stop federal responsibility for controlling national water, whether in flood or drought. With respect to Louisiana most of its runoff is generated outside the State area for all its main carrier rivers, including Mississippi, Red, Ouachita, Black, Atchafalaya Floodway, Pearl and Sabine Rivers. In Louisiana we have a comprehensive flood control plan sponsored, operated and maintained by some 23 Levee Districts to handle and provide for safe passage of almost one half the nation's waters. This invokes federal involvement, don't mess up the system.

CONCLUSION

The Board of Commissioners, Pontchartrain Levee District, compliments the Subcommittee on Energy and Water Development for its keen understanding of real needs for the MR&T Flood Control Project and efficient, alert actions taken to ap-

propriate funds for its many complex requirements. We endorse recommendations presented by the Association of Levee Boards of Louisiana, Louisiana Department of Transportation and Development, Lower Mississippi Valley Flood Control Association and Red River Valley Association.

PREPARED STATEMENT OF AUBREY J. LAPLACE, PRESIDENT, BOARD OF COMMISSIONERS, PONTCHARTRAIN LEVEE DISTRICT

ST. CHARLES PARISH, LOUISIANA

The project.—"Lake Pontchartrain and Vicinity Hurricane Protection, St. Charles Parish, Louisiana," authorized by the Flood Control Act of 1965. Construction is now limited to St. Charles Parish, and virtually complete in four other Parishes.

Objective.—An Accelerated Plan has been developed in conjunction with the Corps of Engineers whereby the ten mile levee system first lift and drainage structures can be completed in a five year period, providing protection from hurricane tides to elevation 9.0. Additional levee lifts will be added to elevation 13.5 as consolidation will allow.

Funding requirements for accelerated plan.—Local—Now available at rate of $2,400,000 annually, Federal—$6,000,000 annually for five year period.

Recommended for fiscal year 1998.—$6,000,000 federal appropriation.

PROJECT DESCRIPTION

The St. Charles Parish Hurricane Protection Levee is ten miles in length, has six drainage structures, extends from the Bonnet Carre Floodway to New Orleans International Airport and is situated about four hundred feet north of U.S. Hwy. 61. Construction cost is estimated at $99,000,000 to be financed at 70 percent Federal and 30 percent Local (Pontchartrain Levee District). Project is now 20 percent complete.

THE ACCELERATED CONSTRUCTION PLAN

The Accelerated Construction Plan was developed in cooperation with the New Orleans District, Corps of Engineers and provides completion of the levee first lift with drainage structures in five years. The pace for construction phases is based on physical constraints which allow minimal times for required consolidation, work cannot proceed any faster. When the first lift and structures are completed, immediate protection to elevation 9.0 will be in place, and now there is nothing to prevent extensive, devastating flooding in St. Charles Parish, a portion of Jefferson Parish and New Orleans International Airport. Then additional lifts will be added to raise the levee to elevation 13.5 as consolidation will allow.

FUNDING THE ACCELERATED PLAN

The Full Funding Initiative perfectly fits the Accelerated Plan. This concept of full up-front funding definitely fits this Project, this Accelerated Plan. The Pontchartrain Levee District in the role as local sponsor has the required funds and is anxious to proceed. The St. Charles Parish Council is completely supportive and provides a portion of local funding. Federal funding in the amount of $6,000,000 and local funding of $2,400,000 annually for five years is required beginning in fiscal year 1998. This Project—the Accelerated Plan—can well serve as a demonstration event for the Full Funding Initiative. This opportunity should not be missed. We have an emergency project, we have local funds, the next move is in the hands of the Appropriations Subcommittee on Energy and Water Development. You must act now.

Representatives of the Pontchartrain Levee District appeared at the Subcommittee Staff Office to submit this Statement and answer any questions. They are Commissioner Joseph Gautreau, Project Manager Mike Babin and Executive Assistant Gerald Dyson. You may call either of them or the undersigned at any time for information, (504) 869–9721.

PREPARED STATEMENT OF GOV. MURPHY J. "MIKE" FOSTER, ON BEHALF OF THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT, PUBLIC WORKS AND FLOOD CONTROL DIRECTORATE

MISSISSIPPI RIVER AND TRIBUTARIES PROJECT

The Louisiana Department of Transportation and Development, Public Works and Flood Control Directorate, is the agency designated to represent the State of Louisi-

ana in the planning and orderly development of its water resources. This statement is presented on behalf of the State of Louisiana and contains recommendations for fiscal year 1998 appropriations for work in Louisiana under the Mississippi River and Tributaries Project.

Louisiana contains the terminus of the Mississippi River, which has the third largest drainage basin in the world, exceeded only by the watersheds of the Amazon and Congo Rivers. The Mississippi River drains 41 percent, or 1¼ million square miles, of the contiguous United States and parts of two Canadian provinces. All of the runoff from major river basins, such as the Missouri and Upper Mississippi, the Ohio including the Tennessee and others, and the Arkansas and White, flow into the Lower Mississippi, which empties into the Gulf of Mexico through Louisiana.

The jurisdiction of levee boards in Louisiana includes one-third of the State's total area. However, the importance of this one-third of the State can be seen by the fact that it contains nearly 75 percent of the State's population and about 97 percent of the State's disposable personal income. Traditionally, the levee district areas are water rich and have fallen heir to industrial development that ranks high in the nation. It has been estimated that about 60 percent of the State's agricultural products come from levee district areas. So you can see why Louisiana and its twenty levee districts are so interested in seeing the completion of the Mississippi River and Tributaries Project.

In making the following recommendations regarding construction, studies, and some selected operation maintenance items, the State of Louisiana understands the Administration's need to reduce the Federal deficit, but would hope that Congress and the Administration will honor their prior commitments to infrastructure development and fund our requests.

MISSISSIPPI RIVER AND TRIBUTARIES SUMMARY OF RECOMMENDED APPROPRIATIONS

[In dollars]

Louisiana projects	Budget request	Louisiana request
Construction:		
Atchafalaya Basin	19,100,000	19,100,000
Atchafalaya Basin, Floodway System	3,300,000	3,300,000
Channel Improvements (LA only)	14,708,000	18,708,000
Mississippi Delta Region, Davis Pond	11,500,000	11,500,000
Mississippi and Louisiana Estuarine Area	300,000	300,000
Mississippi River Levees (LA only)	12,670,000	14,670,000
Tensas Basin, Red River Backwater Area	7,006,000	11,006,000
General Investigations: Morganza to the Gulf	1,070,000	1,070,000
Preconstruction, Engineering and Design: Louisiana State Penitentiary Levee	600,000	600,000
Operation and Maintenance:		
Atchafalaya Basin	10,700,000	10,700,000
Atchafalaya Basin, Floodway System, LA	670,000	670,000
Baton Rouge Harbor—Devil Swamp, LA	150,000	150,000
Bayou Cocodrie and Tributaries	92,000	92,000
Bonnet Carre Spillway	1,000,000	1,000,000
Channel Improvement (total MR&T)	56,112,000	56,112,000
Lower Red River—South Bank Levees, Bayou Rapides Drainage Structure and Pumping Plant	378,000	478,000
Mississippi Delta Region, Caernarvon, LA	377,000	377,000
Mississippi River Levees (total MR&T)	7,252,000	7,252,000
Old River Control Structure	4,390,000	4,390,000
Tensas Basin:		
Boeuf and Tensas Rivers, AR, LA	2,807,000	2,807,000
Red River Backwater Area	2,891,000	2,891,000

Note: The projects listed above are only those in Louisiana and directly affecting the State. We realize that there are others in these areas, we endorse the recommendations of the Lower Mississippi Valley Flood Control Association.

Atchafalaya basin—Request: $19,100,000

This project is a main stem component of the flood control plan for the Mississippi River and Tributaries Project. The Mississippi River can safely carry only one-half

of the project flood, or 1,500,000 cubic feet per second, below Old River; the other 1,500,000 cubic feet per second must be discharged through the Atchafalaya Basin. The levees which must confine this flow to the basin are now deficient because they have settled below original design grade due to consolidation of the underlying soils, and the design has been revised upward. This places the lives and welfare of approximately 650,000 people and their property and improvements in 13 parishes in the immediate vicinity of the Atchafalaya Floodway in jeopardy each flood year. The tax assessment records indicate the value of potential flood losses to be approximately $8 billion, not including public improvements. Over the past half century, we have supported the Mississippi River and Tributaries Project and have agreed that construction of flood protection works should start upstream and progress downstream. As a result, the Mississippi River and Tributaries Project is now more than 90 percent complete in sites upstream from Louisiana, while the levees in the Atchafalaya Basin can contain approximately only 90 percent of the project flood. Work on this project has been underway since 1928 and isn't scheduled for completion until the year 2010. We urge your support for funding this effort to the full capability of the Corps.

Channel improvement—Request: $18,708,000

Channel improvements and stabilization provide protection of the levees and the development behind them, as well as preventing unsatisfactory alignment where the river's bank is unstable. We are requesting an additional $4,000,000 ($2 million each for the Vicksburg and New Orleans districts) for fiscal year 1998 to keep the program moving forward. The funds we are requesting will provide for the dredging and revetment work necessary to accommodate increased flows caused by upstream improvements.

Mississippi River levees—Request: $14,670,000

The Mississippi River and Tributaries Project above Louisiana is about 90 percent complete, but in Louisiana to a much lesser extent. Because of the improvements upstream, increased flows are a major problem in Louisiana where the project is lagging behind the construction in the upper valley. We request funds for levee enlargement work within the Fifth Louisiana Levee District where there is a deficiency of 4 to 7 feet on main-line Mississippi River levee. It is also requested that Federal funds be provided to purchase rights-of-way for this critical work as the Levee District is in an economically depressed area and does not have a tax base capable of producing the funds necessary for both maintenance and rights-of-way.

Louisiana State Penitentiary levee—Request: $600,000

The Louisiana State Penitentiary Levee is the only section of Mississippi River levee in Louisiana that is not currently constructed to Federal standards. It was authorized under the Mississippi River and Tributaries Project in 1986 and re-authorized in 1990. We urge your support in funding this project and request that specific language be included in the appropriations bill to direct the Secretary of the Army to construct this project before an emergency situation arises during a major river flood.

Morganza, LA to the Gulf of Mexico—Request: $1,070,000

This study area of approximately 4,000 square miles lies in the corridor between the Mississippi and the East Atchafalaya Basin Levees and is part of the alluvial floodplain of the Mississippi River. These levees intercepted the drainage which now must flow approximately 125 miles to the Gulf of Mexico. The area is affected by backwater flooding from the Atchafalaya Basin and is also affected by tides. This is a very important project to the State and we urge your continued support for funding.

Mississippi delta region project, Davis Pond—Request: $11,500,000

Davis Pond Freshwater Diversion Project is necessary to aid in the fight against coastal erosion and land loss. The State of Louisiana's commitment to this project is demonstrated by our agreement to provide 25 percent of the cost of construction, operation and maintenance of the Davis Pond structure despite Congressional project authorization at 100 percent Federal cost.

Bayou rapides drainage structure and pumping plant (Lower Red River, South Bank Levees)—Request: $478,000

The Bayou Rapides Drainage Structure and Pumping Plant is authorized under the Lower Red River, South Bank Levees of the Mississippi River and Tributaries Project. An additional $100,000 is requested to begin plans and specifications. This will enable the Corps to begin construction in fiscal year 1999 and keep within the

18 months allowed for major maintenance projects. We urge your support for funding and request that specific language be included in the appropriations bill to direct the Secretary of the Army to construct this project.

LOCAL CONTRIBUTIONS FOR FLOOD CONTROL IMPROVEMENTS

Historically, Louisiana has always done its part in cooperation with the Federal agencies concerned with flood control. The Louisiana State Board of Engineers, the forerunner of the Department of Transportation and Development, Public Works and Flood Control Directorate, was created in 1879, the same year as the Mississippi River Commission, to coordinate the planning and construction of the required flood control facilities to protect the State. Since that time, local expenditures for flood control have exceeded $730,000,000. This amount adjusted to 1979 dollars represents expenditures in excess of $5.3 billion. Nearly one-half of the potential flooded area of the Lower Mississippi River Valley lies in Louisiana. Local expenditures for flood control have increased with the growth of the valley. This record not only meets, but exceeds any National Water Policy local participation requirement ever put into practice.

CONCLUSION

The State of Louisiana, Department of Transportation and Development, Public Works and Flood Control Directorate, in particular, wishes to commend the Appropriations Subcommittees on Energy and Water Development, and express our appreciation for the foresight and understanding exhibited for water resources projects which are vital to the national interest. We solicit your further consideration of the recommendations presented herein.

PREPARED STATEMENT OF GOV. MURPHY J. "MIKE" FOSTER, ON BEHALF OF THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT, PUBLIC WORKS AND FLOOD CONTROL DIRECTORATE

FLOOD CONTROL, NAVIGATION, HURRICANE PROTECTION AND WATER RESOURCES PROJECTS IN LOUISIANA

The Louisiana Department of Transportation and Development, Public Works and Flood Control Directorate, is the agency designated to represent the State of Louisiana for the coordinated planning and development of water resources, including flood control, navigation, drainage, water conservation and irrigation projects; therefore, this statement is presented on behalf of the State of Louisiana. We are pleased to present the recommendations for fiscal year 1998 appropriations for Louisiana projects. The projects listed herein are in addition to those covered in the statement by the Public Works and Flood Control Directorate for the Mississippi River and Tributaries Project.

Louisiana contains the terminus of the Mississippi River, which has the third largest drainage basin in the world, exceeded only by the watersheds of the Amazon and the Congo Rivers. The Mississippi drains 41 percent, or 1¼ million square miles, of the contiguous United States and parts of two Canadian provinces. In addition to the Mississippi River system, Louisiana contends with other interstate waters—the Sabine on the western border, the Red River from four other states, the Ouachita River in the north central area flowing down from Arkansas, the Arnite River in the southeast area flowing down from Mississippi, and the Pearl River on its extreme eastern border with the State of Mississippi. All of these river systems converge towards Louisiana, passing on to the Gulf of Mexico, draining a figure approaching 50 percent of these contiguous 48 states.

Louisiana also plays a strategic part in providing the country with access to world markets through an inland navigation system that funnels through Louisiana. Approximately 75 percent of all soybeans, animal feed, and corn grown in the U.S. are shipped through Louisiana. And almost 50 percent of all rice and cereals. Louisiana has the highest waterborne traffic by state. The river flood control systems work in conjunction with the hurricane and coastal protection systems to form a total integrated protection system from floods of all types. This integrated system protects the inland navigation system that as Senator Bond has said "is the envy of the world." It also protects the petrochemical industry in Louisiana which has the second largest refining capacity in the country producing approximately 15 billion gallons of gasoline at 19 refineries. Louisiana ranks second in produced natural gas and third for oil production. The pipeline system which supplies much of the country with natural gas and petroleum originates in Louisiana. The petrochemical and oil and gas industries depend almost totally on Federally constructed levee systems to

protect them from floods and hurricanes, and depend on the Federally maintained navigation system for transportation. This infrastructure development which benefits the entire country has contributed to the destruction of our marshes and wetlands which produce a commercial fish and shellfish harvest worth over $600 million and 40 percent of the Nation's wild fur and hides harvest worth over $15 million. This wealth of natural resources cannot survive and propagate for the economic benefit of the State and Nation without on-shore facilities that require protection from major storms and hurricanes. It would be a national loss if these facilities and infrastructure were not protected since Louisiana plays a strategic part in the national economy. But Louisiana alone cannot support the infrastructure on which the country depends. All these facilities in Louisiana that support and contribute to the economic well-being of the country are protected by flood control measures; flood control measures that the Federal Government has appropriately committed itself to provide.

In making the following recommendations regarding construction, studies, and some selected operation and maintenance items, the State of Louisiana understands the Administration's need to reduce the Federal deficit, but would hope that Congress and the Administration will honor their prior commitments to infrastructure development and fund our requests. We feel that water resources projects are probably the most worthwhile and cost effective projects in the Federal budget, having to meet stringent economic justification criteria not required of other programs. We ask that this be taken into consideration in the final decision making process to appropriate the available funds.

[In dollars]

Project	Budget request	Louisiana request
Authorized Studies:		
Amite River—Darlington Reservoir, LA	300,000	300,000
Bayou Tigre, LA	350,000	.....
Black Bayou Diversion, LA	350,000	350,000
Intracoastal Waterway Locks, LA	850,000	850,000
Jefferson Parish, LA	138,000	138,000
Lafayette Parish, LA	600,000	600,000
Mississippi River Ship Channel Improvements, LA	400,000	400,000
Orleans Parish, LA	350,000	350,000
West Shore—Lake Pontchartrain, LA	250,000	250,000
Preconstruction Engineering and Design:		
Comite River Diversion, LA	265,000	265,000
East Baton Rouge Parish, LA	620,000	620,000
Port Fourchon, LA	129,000	129,000
Construction:		
Aloha-Rigolette Area, Red River, LA	1,510,000	3,343,000
Lake Pontchartrain and Vicinity, Hurricane Protection	6,448,000	11,248,000
Lake Pontchartrain Stormwater Discharge	.....	7,400,000
Larose to Golden Meadow, Hurricane Protection	541,000	3,041,000
Mississippi River, Gulf Outlet	2,018,000	3,518,000
Mississippi River Ship Channel, LA	1,793,000	2,993,000
New Orleans to Venice, Hurricane Protection	1,700,000	2,200,000
Ouachita River Levees	.....	5,741,000
Red River Chloride Control	.....	12,000,000
Red River Waterway, LA	9,990,000	18,990,000
Southeast Louisiana Urban Flood Control	6,440,000	52,000,000
West Bank—East of Harvey Canal, LA	2,385,000	2,385,000
Westwego to Harvey Canal, LA, Hurricane Protection	4,300,000	6,300,000

Operation and maintenance—Request: Full Capability

Operation and maintenance of completed projects is essential to achieving the full benefits of the projects. In times of budget constraints it is essential that operation and maintenance not be put off which would hamper the effectiveness of the projects and cause more expensive maintenance at a later date. We urge you to continue funding operation and maintenance to the Corps' full capability. The Mississippi

River, Baton Rouge to the Gulf Project and the Mississippi River Gulf Outlet are major navigation arteries in Louisiana providing access to world markets through Louisiana. Maintenance of these vital arteries is imperative. Currently, there are not enough funds to maintain them, causing major problems for the maritime industry. This will impact the nation's economy. We recommend that the Corps be funded to its full capability in fiscal year 1998 to keep our economy strong.

Ouachita River levees—Request: $5,741,000

The culvert replacement in the Ouachita River Levees is complete. We thank you for your assistance in funding this desperately needed work. What remains is to bring the levees up to standards. We request that specific language be added to the appropriations bill to direct the Secretary of the Army to accomplish this task. These funds would allow for the design and completion of construction for levee enlargement and surfacing the crown. We request that $5,741,000 be provided in fiscal year 1998 for this work which would complete the project.

Mississippi River ship channel. Gulf to Baton Rouge, LA—Request: $2,993,000

The Mississippi River Ship Channel is now capable of providing a 45 foot deep channel all the way to Baton Rouge, Louisiana. The Phase I mitigation construction is underway and we request an appropriation to keep it on schedule, and to continue the design memorandum for the remaining Phase III features. We thank you for your continued support for infrastructure development which keeps our country competitive in the world market.

Lafayette parish, LA—Request: $600,000

Flooding from the Vermilion River in Lafayette Parish in 1993, and since, has caused damages to areas that had never flooded before. The funds requested are to continue the feasibility study.

Westwego to Harvey canal, LA—Request: $6,300,000

Hurricane protection for the West Bank of the New Orleans metropolitan area is urgently needed. We urge the Corps to increase its capability for an accelerated construction schedule for this project. We request a Congressional add of $1,000,000 for a new construction start on the Lake Cataouatche Levee which was recently included into the overall project. This would extend hurricane protection west to the St. Charles Parish line. We urge your support for this addition.

West bank—East of Harvey canal, LA—Request: $2,385,000

The East of Harvey Hurricane Protection Project will modify the Westwego to Harvey Canal Project now under construction and provide greater net benefits realized than from the Westwego to Harvey Canal Project alone. This project will protect over 80 percent of residential structures in the area, which is a potential flood damage reduction of over $2.2 million, and has a benefit to cost ratio of 4 to 1. We urge your support for this project and its early authorization.

Aloha-Rigolette area, Red River, LA—Request: $3,343,000

Construction of this project has begun, but at a reduced construction schedule due to budget cuts. To put this project back on schedule we request an additional $1,833,000 to the Administration's request of $1,510,000 for a total of $3,343,000 to complete the project. We urge your support.

Red River waterway—Mississippi River to Shreveport, LA—Request: $18,990,000

Navigation is now possible to Shreveport, however, the project still has many additional items to complete. The accelerated construction schedule mandated by your funding recommendations in previous years has saved taxpayers of the United States millions of dollars on the construction of the Red River Waterway Project. We urge the continuation of this policy by providing an additional $9 million for fiscal year 1998 based on the previously approved schedule.

Southeast Louisiana urban flood control—Request: $52,000,000

In 1996 Congress authorized all economically justified work described in previously completed reports by the New Orleans District Corps of Engineers. A five year construction schedule was approved. To maintain this five year schedule an additional $45,560,000 is required and requested.

Lake Pontchartrain and vicinity, hurricane protection—Request: $11,248,000

The additional funds of $4,800,000 are requested for work in St. Charles Parish. The local sponsor has requested that this portion of the project be expedited and has the necessary funds to cost share.

Red River basin chloride control project—Request: $12,000,000

With the Red River Waterway Project bringing navigation to Shreveport, the water supply needs of the area will increase. Reducing the chloride content of the Red River, which is technically and economically feasible, would make the Red River usable as an economical water supply. The construction of the Red River Chloride Control Project will enhance further economic development in the Red River Valley and make the Navigation Project prove even more economically feasible than previously anticipated. We ask that funds continue to be provided in future years until this project is completed.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

The passage of the Coastal Wetlands Planning, Protection and Restoration Act has been a positive force for Louisiana. This legislation is not only assisting the Nation and Louisiana in protecting and restoring precious wetlands of national significance but it has also freed up Corps' funds for other much needed flood control and navigation projects. The State of Louisiana commends the Corps on its cooperation in coordinating the beneficial use of dredged material for coastal preservation.

CONCLUSION

We wish to express our thanks to the Appropriations Subcommittees on Energy and Water Development of the House and Senate for allowing us to present this brief on the needs of Louisiana. Without reservation, practically every single project in Louisiana which has been made possible through actions of these committees has shown a return in benefits many times in excess of that contemplated by the authorizing legislation. The projects which you fund affect the economy of not only Louisiana, but the nation as a whole. The State of Louisiana appreciates the accomplishments of the past and solicits your consideration of the appropriations requested for fiscal year 1998.

PREPARED STATEMENT OF REYNOLD S. MINSKY, PRESIDENT, BOARD OF COMMISSIONERS, FIFTH LOUISIANA LEVEE DISTRICT

A situation in the State of Louisiana which has the potential to cost lives and virtually billions of dollars in damage to private and commercial property. To prevent this from happening, it is essential that the U.S. Army Corp of Engineers, Vicksburg District be allocated funding for proposed levee construction projects on the mainline Mississippi River Levee in north Louisiana.

U.S. Army Corps of Engineers' projects designated State Line-Wilson Point. LA. Item 503–R and Wilson Point-Point Lookout LA, Items 480–489–R, designed to upgrade levee heights in the most deficient areas, will require approximately $32 million for construction. Another $68 million will be required to bring the remainder of the mainline Mississippi River Levee in the Fifth Louisiana Levee District to grade.

A stretch of the mainline Mississippi River Levee in East Carroll Parish, Louisiana, has been determined to be an average of six feet deficient in height. In reality, some sections of this area are as much as seven to nine feet deficient, making it the lowest stretch of mainline Mississippi River Levee in Arkansas or Louisiana, with only one location comparable in Mississippi.

Of this 26-mile stretch, the area of greatest deficiency is located directly north of Lake Providence, Louisiana. Should the Mississippi River overtop the Levee at this location, it will destroy the town of Lake Providence, where flood waters would be seven to ten feet in depth within six hours. Tallulah, Newellton and St. Joseph, Louisiana would be destroyed within days. Approximately one-half of the State of Louisiana will flood as waters push into the Atchafalaya and Ouachita rivers. According to information compiled by the Vicksburg District, Corp of Engineers and featured in a Louisiana Public Television report entitled "Chocolate Tide", within seven days of a levee failure at Lake Providence, the airport at Monroe, Louisiana will be underwater.

To eliminate the potential danger the Vicksburg District, Corp of Engineers proposed the levee construction projects entitled State Line-Wilson Point LA, Items 501–506–R, and Wilson Point-Point Lookout LA, Items 480–489–R. One project currently under construction will require another (unfunded) $2.8 million to complete. Two projects are in the planning stage for 1997. The remaining proposed levee enlargement projects have virtually been halted by lack of funding and legal action designated *Mississippi River Basin Alliance* vs. *Corps of Engineers,* a lawsuit filed by the Sierra Club Legal Defense Fund. One construction item, "State Line-Wilson

Point", Item 503–R, proposed for the 4.1 mile stretch of levee that is most deficient in height, is addressed directly in the Sierra Club lawsuit and has been "put on hold" with no projected construction date.

Demands being made by the Sierra Club suit are cost prohibitive and impossible financially to comply with. Without intervention or reasonable compromise regarding these demands, the litigation has the potential to prolong construction in this vulnerable area until it is too date.

Additionally, budget cuts at the federal level have reduced funding for these proposed levee enlargement projects. By letter dated March 19, 1996, Colonel Gary Wright, District Engineer, Vicksburg District, Corp of Engineers advised, "* * * the District expects to award only one contract in the years 1998–2000, and completion date of the (MRC) project to be extended * * * to 2029." The Mississippi River Levee Project was allocated a total of only $33.3 million for the five year period 1997–2001.

The proposed federal budget for fiscal year 1998 includes $266 million to fund the Mississippi River and Tributaries Project, the flood control and navigation program on the Lower Mississippi River, and $247.3 million for construction, investigations, and operations and maintenance for other work that does not come under the MR&T program. One of the main features of President Clinton's proposed budget is to fully fund construction work and new starts beginning with the fiscal year 1998 budget; however, listings of locations for those projects under that provision of the budget do not show any in Mississippi, Louisiana, or Arkansas within the Vicksburg Corps of Engineers' District.

Only weeks ago America watched flood waters overtop levees, roads, and reservoirs, and rage into homes and businesses in California and Washington, leaving death and destruction in the wake. One week ago we watched as flood waters raced through Ohio and Kentucky, again leaving a trail of death, livelihoods destroyed, and thousands displaced. We saw scenes that repeated those witnessed in the northwest in 1995, and in Missouri in 1993.

Even as I speak today, the Mississippi River continues rising and is projected to reach record heights along the Levee in north Louisiana. All relevant factors taken into consideration, potentially, within the next 90 days the Mississippi River could reach levels unrecorded since 1927.

We must also consider that the area of Louisiana targeted for greatest danger from a swollen Mississippi River has also been recognized nationally as having the lowest income per capita in America. Most homes and belongings in this area are not covered by insurance of any kind. Even with advance warning, many families would not have the means to remove themselves from harm's way.

You have an obligation to do all you can to prevent further catastrophe from the Mississippi River, especially when the cost of prevention is so little, yet the potential for destruction so high.

As members of the Board of Commissioners for the Fifth Louisiana Levee District, we represent and speak for the people of northeast Louisiana. We are not alarmist, we are realist. In reality a very real, and increasingly present, danger exists if this section of the Mississippi River Levee is not enlarged to proper height at the earliest possible date.

On behalf of the Fifth Louisiana Levee Board and the people of Louisiana, I urge you to make funding and enlarging of the Mississippi River Levee in Louisiana a number one priority in future funding. If not too late already, we can prevent history from repeating itself. We can insure that America will not watch as half of the State of Louisiana is washed away. We can protect our people. It will just take all of us working together.

We desperately need your support in this matter and respectfully request that construction projects proposed for the Mississippi River Levee in Louisiana, as planned for fiscal year 1998, be fully funded.

NEW YORK/NEW JERSEY WATER RESOURCE PROJECTS

PREPARED STATEMENT OF RALPH COX, MARITIME DIRECTOR, MASSACHUSETTS PORT AUTHORITY

Mr. Chairman and members of the Subcommittee, I appreciate the opportunity to submit testimony for the Hearing Record for the fiscal year 1998 Energy and Water Appropriations Bill. My name is Ralph Cox. I am Director of the Maritime Division of the Massachusetts Port Authority (Massport). I would like to start out by thanking this Subcommittee for its support last year and for the $553,000 that was included in last year's Energy and Water Appropriations Bill. The purpose of my testi-

mony this year is to request continued federal assistance for the Boston Harbor Navigation Improvement Project.

The Port of Boston is one of the oldest international ports in the nation, having served U.S. commerce for over 300 years. The Port's primary activities are related to the transport of bulk cargo, particularly petroleum and scrap metal, and containerized freight. In 1995, the Port handled over 1.1 million tons of containerized cargo, which represented 87 percent of our business. The Port of Boston is the largest port in New England and serves over 13 million residents of the six New England states.

The Boston Harbor Navigation Improvement Project is designed to deepen three tributary channels of Boston Harbor to depths of 40, 40 and 38 feet, respectively. Specifically, the plan calls for deepening the Reserved Channel and the Mystic River to 40 feet. This is necessary so that larger deep draft vessels, which are currently used in the international container business, can be fully accommodated. Currently, deep draft vessels may incur several hours of tidal delay in order to call on the Port. Without dredging the harbor, shipping lines will be forced to continue to wait for the high tide. This will ultimately result in a significant reduction of direct vessel calls on the Port. As is often the case, weather conditions cause delays in vessel transit across the Atlantic Ocean. These delays often result in vessels bypassing Boston altogether. This increases freight handling costs, which are then passed on to the citizens of New England in the form of higher prices for various products.

In addition, the Chelsea Creek will be deepened to 38 feet so that nearby transfer facilities will be able to accommodate the deeper draft oil tankers which are used to carry petroleum to locations throughout New England. Today, heavily loaded oil tankers must also wait for the tidal change, or be "lightered" by off-loading petroleum onto barges. As you might suspect, this transfer process is highly inefficient and substantially more costly. While every precaution is taken to ensure safety, lightering does add considerably to the risk of an oil spill within Boston's inner harbor.

To remedy the aforementioned problems, the Boston Harbor Navigation Improvement Project was conceived in 1968 and provided for by Congressional resolution. The necessity of deepening Boston's navigation channels received further support from Congress in the form of an authorization within the Water Resources Development Act of 1990. In its report, the House recognized that the timely completion of the project was critical to the maintenance and growth of the Port. By extension, increased efficiency at the Port will also contribute significant economic growth to the Commonwealth of Massachusetts and the entire New England region.

The Boston Harbor navigation project has approached the final approval stage after many years of effort and time consuming environmental reviews. There has been close cooperation between environmental advocates, dredging proponents, and regulatory agencies. An innovative and environmentally sound solution to the disposal of contaminated dredge material has been achieved through anticipated use of in-harbor containment cells. Rather than being dumped at sea or placed in local landfills, contaminated sediments will be placed in deep cells below the existing navigation channels and capped with clean material. Clean sediments will be disposed of at sea or beneficially used onshore.

Special precautions will be taken during both dredging and disposal to minimize the impact of the project on water quality and marine life. The project will employ a closed "environmental bucket" to remove the dredged material and will utilize various environmental protection measures during dredging and disposal, as appropriate. The project will also hire an independent contractor, in addition to the Corp's resident engineer, to monitor all dredging and disposal sites for their impact on migratory fish. Dredging work at Conley Terminal, representing the first phase of the project, will begin in May. Dredging for the rest of the project will begin in August or September.

Mr. Chairman, we were pleased to learn that $3.92 million was included for Boston Harbor within President Clinton's fiscal year 1998 budget submission. However, while we are sensitive to the budget constraints with which this Subcommittee is faced, Massport and the Army Corps of Engineers are prepared to complete this project in eighteen months. Therefore, we are requesting that this Subcommittee continue a history of strong congressional support for this project by providing $8.687 million in fiscal year 1998 funding. This level of funding will enable us to complete the majority of the dredging work during fiscal year 1998, and will also enable us to keep the project on schedule and budget.

In addition, Massport is also requesting that the Subcommittee support the Corps' request for $16.5 million in operation and maintenance funding to begin the maintenance work in Boston Harbor. It is necessary for the maintenance and dredging work to be conducted simultaneously, and we would therefore urge your support for both the improvement and maintenance dredging requests.

In closing Mr. Chairman, I would like to state that both Massport and the Commonwealth of Massachusetts are fully committed to this project. Specifically, the Commonwealth has committed $15 million through a Seaport Bond Bill and Massport has committed $5 million, $2 million of which has already been spent on permitting and environmental studies.

Mr. Chairman, thank you again for the opportunity to submit testimony for the Hearing Record. Massport is very grateful for this Subcommittee's past support for this project, and we are looking forward to continuing our work together.

PREPARED STATEMENT OF JOHN P. CAHILL, NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION

I'd like to take this opportunity to share New York State's interests in Congressional appropriations under the Water Resources Development Act, in particular focusing here on meeting needs associated with the Port of New York and New Jersey.

As you know, the Port of New York and New Jersey is important to the local and regional economy. In 1995, the Port handled 120 million tons of cargo, valued at $93 billion. It is responsible for 193,000 jobs, 90,000 of which are located in New York or are filled by New York residents. New York State is the third largest exporter state in the country—$34 billion to 200 countries.

According to the Port Authority of New York and New Jersey, significant amounts of container cargo are already being diverted to other ports on the east coast, such as Halifax and Norfolk, due largely to the fact that the Port channels in New York harbor are not deep enough to handle modern container vessels. In order to accommodate these vessels, the Army Corps of Engineers estimates that 60 million cubic yards of material must be removed from the harbor between now and the year 2001. It is estimated that 75 percent of that material to be dredged is contaminated, unsuitable for ocean disposal.

The State of New York is working diligently to develop viable disposal options for both the short term and the long term. On October 7, 1996, the States of New York and New Jersey released a "Bi-State Dredging Plan" which, among other things, committed a total of $130 million directly to the search for disposal alternatives for the Harbor's dredged material. Nevertheless, at this time no viable alternatives to ocean disposal are available, and New York needs assistance from the federal government to develop realistic and environmentally compatible disposal alternatives.

The needs outlined below reflect an emphasis on environmentally sound management of dredged material from the Harbor. I leave it to our partners in the Port Authority of New York and New Jersey, the U.S. Army Corps of Engineers, the U.S. EPA, the City of New York, and the many other stakeholders of the dredging forum to articulate further the capital program needs for dredging, channel deepening, and Port development. To the degree these efforts will continue and increase demands for dredged material disposal capacity, we look for funding support to address these needs under an environmentally sound strategy.

In this regard, the Governors of the States of New York and New Jersey have committed to the pursuit of multiple options to enable a comprehensive approach to meeting our disposal and management needs for dredged materials. This includes:

—identification and reduction of the sources of contamination that constrain the options for beneficial use and environmentally benign disposal of dredged material;

—initiatives to develop sediment decontamination of technologies that will enhance the prospects for beneficial use of Harbor sediments;

—development of both inwater and upland disposal capacity with responsible siting and phased development linked directly to progress in the cleanup of contaminated sediments;

—research and development to continuously improve technologies and methods for management of sediments; and

—initiatives to restore habitat in the New York Harbor ecosystem, as well as enhance habitat from the impacts of ongoing and future projects.

All of these activities directly relate to enabling the successful maintenance and development of New York Harbor to maintain its premier status as a major shipping port in the world while providing for the future environmental health of the Harbor. None of these activities should be narrowly viewed as only water quality improvement initiatives that should be otherwise funded under the Clean Water Act. Instead, water resources development, and the economic benefits that accrue from it, are directly dependent on the success of all of these initiatives.

SEDIMENT CHARACTERIZATION, CONTAMINANT SOURCE IDENTIFICATION TRACKDOWN AND CLEANUP

New York State is committing $14 million of its $65 million funding, associated with the joint dredging plan signed by the Governors of New York and New Jersey, toward a 5-year technical program to identify and track down the sources of contaminants of concern in the Harbor and to control those sources. Measurable progress toward annual contaminant reduction goals will allow effective planning for the most appropriate disposal capacity needs in the future. We request matching funds from the federal government to provide a comparable federal commitment toward these objectives. This will allow us to expand and accelerate our cooperative efforts to achieve the earliest possible benefits of a restored Harbor.

Related to these efforts, the USGS has been funded under WRDA to conduct sediment transport studies in the Hudson and Mohawk Rivers and New York Harbor regions. This effort has produced enlightening results regarding sources of sediment loads into the Harbor. This data correlated with other sediment contaminant data will ensure that our trackdown and source control efforts are successful and appropriately targeted. We strongly recommend continued support to USGS to continue this important work at full funding.

The return on investment in these efforts will be substantial in reducing the volume of contaminated sediments and their cost for disposal. The current disparity in disposal costs between clean and contaminated sediments ranging to well over $100 per cubic yard easily justifies the investments in contaminant reduction for a Harbor that requires 4 to 6 million yards of maintenance dredging annually.

DECONTAMINATION AND BENEFICIAL USE OF DREDGED MATERIALS

The beneficial use of dredged materials as a resource rather than their disposal as a "waste" is unquestionably a priority objective for the management of sediments throughout New York State. In order to achieve this objective, the appropriate physical and chemical properties of these materials must be demonstrated as suitable for their intended use. This may require special treatment, handling or testing.

The ongoing decontamination technology demonstration program which WRDA has previously funded at $10 million over three years, based on a partnership between U.S. EPA, U.S. Army Corps of Engineers, U.S. Department of Energy (Brookhaven National Laboratories), the two states, and private industry must be expanded. As technologies have begun to demonstrate feasibility, funding is critical to full scale demonstration and private sector sponsorship.

The variable characteristics of Harbor sediments and the range of contamination they exhibit in the Harbor will likely warrant a treatment train that combines a number of technologies to provide an effective suite of processing and decontamination to ensure optimum beneficial use opportunities.

We support EPA's estimated need of $30 million to provide seed money for design plan and specifications to attract private sector investment on the range of technologies now showing best promise from the pilot study work being conducted. Several technologies have demonstrated some level of promise towards this end. This would also address meeting testing and costs for state regulatory approvals of upland beneficial use of sediments.

New York State is willing to provide $5 million local share towards these efforts, in accordance with the Bi-State Dredging Plan.

CONTAINMENT FACILITIES

Significant time, effort, money and experience will be required to optimize the benefits of sediment decontamination and beneficial use. These efforts and those to reduce contaminant sources will not completely eliminate the need for significant disposal capacity for sediments, particularly over the near term. Inwater containment facilities have the potential for both significant environmental impacts as well as benefits. For this reason, rigorous siting studies must be conducted to support appropriate placement of these facilities. This applies to both nearshore and offshore containment.

Similarly, New York State shares the conviction of other stakeholders in the Harbor that any development of containment facility capacity should be linked to progress in reducing the contamination in the Harbor. This demands phased development of such facilities. Such phasing, however, can add substantially to both design complexity and costs in lost economies of scale. We support full funding to the Army Corps of Engineers to complete appropriate siting studies, design and construct containment facilities, and offset the cost differential attributable to phased facility development.

Nearshore containment facilities, i.e., interpier fills, also require seed money for plans, specifications, and application development to attract private sector investment and beneficial use development of filled areas. This same need for private sector incentive also applies to the development of upland disposal capacity facilities. This concept of public/private partnerships to attract private sector investment for near shore containment facilities is not unlike the CDF partnerships provided last year under the Water Resources Development Act for Great Lakes dredging activities.

Technologies for both upland and inwater management of sediments continue to evolve. Research and development (R&D) funds are needed to continue to "push the envelope" on best management practices for such facilities. Upland disposal of dredged material on any large scale requires significant research on the required monitoring of the physical and chemical behavior of contaminants placed in such facilities. Funding to support these monitoring programs should be available as an incentive to private sector sponsors of such facilities. Similarly, R&D funds to further the work of the Corps of Engineers on deployment and placement technologies for subaqueous disposal of dredged materials should be continued in order to demonstrate that these technologies are both environmentally safe and feasible in challenging settings.

HABITAT RESTORATION

The federal government should provide 100 percent funding for habitat restoration projects being developed in partnership between the Corps of Engineers, NOAA, and the states for degradation and losses from historic dredging and disposal practices, and for habitat enhancements that could be made incidental to further containment facility development. In addition, the Bi-State Dredging Plan provides for up to $20 million for habitat restoration, creation, and other dredged material management initiatives for which New York State seeks 50 percent matching funds in feasibility investigation and 75 percent matching share in construction costs. This would be consistent with other ongoing habitat restoration initiatives being conducted in concert with the Corps of Engineers for the Hudson River, Jamaica Bay and Western Long Island Sound.

On behalf of Governor Pataki and the State of New York, I thank you for the opportunity to present our recommendations to the Committee. We would be pleased to make staff available to answer any follow-up questions the Committee may have in regard to any of the above recommendations. Thank you.

PREPARED STATEMENT OF SHARPE JAMES, MAYOR, CITY OF NEWARK, NJ

Mr. Chairman and Members of the subcommittee, thank you for giving me the opportunity to submit testimony about a project under your jurisdiction which is very important to the people of Newark, New Jersey and the surrounding region. The Passiac River Streambank Restoration Project, known as the Joseph G. Minish Passaic River Waterfront Park and Historic Area, is an important part of the overall economic and transportation development plan of the City of Newark.

The project was authorized at a level of $75 million in last year's Water Resources Development Act, and has been fully planned by the Army Corps of Engineers with last year's appropriation of $900,000. The streambank restoration and bulkhead replacement, which is the first phase of the overall project, is now ready to begin construction. An appropriation of $10 million is requested so that this integral element in Newark's revitalization can move from detailed plan to construction.

This investment in Newark's future will help us to improve the economic status of our nation's third oldest major city. The development of the riverfront now is a critical element in the overall plan for Newark's downtown revitalization. This linear park will serve as a visual and physical linkage among several key and exciting development projects. It is adjacent to one of the oldest highways in the nation, Route 21, which is undergoing a multi-million dollar realignment. The planned Newark-Elizabeth Rail Link, which will connect Newark's two train stations, and ultimately, Newark International Airport and the neighboring City of Elizabeth, will provide users with access to mass transportation. The riverfront development will complement and provide a visual and physical connection with the new, $170 million New Jersey Performing Arts Center, which will open in the Fall of 1997. Further east along the riverfront, the City of Newark and Essex County are moving ahead with plans to construct a minor league baseball and soccer facility at Riverbank Park, along with an enhanced replacement playground facility, also accessible from the riverfront walkway.

The riverfront will be the nexus of these activities, creating a vibrant downtown center that will provide economic development opportunities for the citizens of Newark and our region. Visitors from throughout the nation are expected to come to visit our revitalized city, and participate in the exciting growth and development taking place. There is tremendous potential for Newark's riverfront to mirror the success of other riverfront developments throughout the country, and Newark stands ready to accept the challenges such developments present.

We have a once in a lifetime opportunity to coordinate several major development activities into a virtually seamless development plan. The appropriation of $10 million which I am requesting will serve to incorporate the Army Corps of Engineers' construction into our overall economic development plan to reinvigorate Newark. I urge you to support this appropriation request.

In closing, I would like to extend my thanks to the entire New Jersey Delegation for its ongoing support, especially to subcommittee Member Rodney Frelinghuysen for his advocacy of this critical project. The time and attention of this subcommittee are deeply appreciated.

PREPARED STATEMENT OF HON. CHARLES A. GARGANO, CHAIRMAN AND CEO, STATE OF NEW YORK, EMPIRE STATE DEVELOPMENT CORPORATION AND FRANK M. MCDONOUGH, DIRECTOR, MARITIME RESOURCES, STATE OF NEW JERSEY, DEPARTMENT OF COMMERCE AND ECONOMIC DEVELOPMENT AND LILLIAN C. BORRONE, DIRECTOR, PORT COMMERCE DEPARTMENT, PORT AUTHORITY OF NEW YORK AND NEW JERSEY

As representatives for the States of New Jersey and New York, and the Port Authority of New York and New Jersey we support the U.S. Army Corps of Engineers (Corps) fiscal year 1998 budget request, believing that in most cases it provides the appropriation of sufficient funds for projects related to the Port of New York and New Jersey. We particularly note our support for the budget request of $1.25 million for the New York & New Jersey Harbor, NY & NJ feasibility study. This study, authorized in WRDA 1996 and strongly supported by the administration will determine the feasibility of dredging federal channels to depths as great as 50 feet in order to ensure an efficient, world-class navigation infrastructure for international and domestic commerce that is projected into the next century. In addition to our above endorsement we have identified nine additional sums for essential projects that we respectfully ask you to consider.

The amounts requested below are what we believe necessary to continue and advance existing construction and maintenance navigation projects and provide for much needed studies, based on our ongoing partnership with the Corps. Where applicable, we and other sponsors are prepared to provide the local share of funds as required. All told, we recommend an additional federal appropriation of $3,300,000 in funds for Federal Navigation Projects in fiscal year 1998. Listed below are the projects requested for the State of New York and the State of New Jersey:

Construction:	
Kill van Kull and Newark Bay Channel, NY&NJ	$500,000
NY Harbor and Collection of Drift Project, NY&NJ	600,000
Studies:	
NY & NJ Channels Arthur Kill, Howland Hook	500,000
NY Harbor Anchorages Red Hook Flats Anchorage	100,000
Port Series	.....
National Dredging Study	.....

Listed below are projects requested for the State of New Jersey:

Construction: NY Harbor and Adjacent Channels—Port Jersey, NJ	600,000
Studies: NY Harbor and Adjacent Channels—Claremont Channel, NJ	400,000
O & M: Ward Point Bend	600,000

Construction

Kill van Kull, Phase II & Newark Bay Channels, NY & NJ.—Kill van Kull, Phase II & Newark Bay Channels, NY & NJ is a harbor deepening project authorized for construction on the Fiscal Year 1985 Supplemental Appropriations Act (Public Law 99–88) and WRDA 1986. The channels at issue serve the busiest and largest container facilities on the Atlantic Seaboard and we have heard a consistent message from the steamship lines that service the Port Newark and Elizabeth Marine Terminals on Newark Bay and from the harbor pilots that the completion of the project to 45 feet is an absolute necessity. The full benefits of the authorized 45 feet naviga-

tion project have been postponed due to construction delays. We believe it is imperative that Phase II engineering and design be completed as soon as possible so that construction can commence immediately. The project sponsor will be prepared to provide local share subject to a Project Cooperation Agreement being negotiated. We are requesting an appropriation of $500,000, over the budget request, to initiate construction in the last quarter fiscal year 1998.

New York Harbor and Collection of Drift Project, NY & NJ.—The New York Harbor and Collection of Drift Project, NY & NJ (Waterfront Clean-up)removes sunken hulls and decaying shore structures that are the sources of dangerous and costly harbor drift which also runs afoul of our beaches. The project provides the economic benefit of safe navigation. The Corps of Engineers has estimated that nearly 18,000 commercial, public and recreation vessels collide annually with drift in our port causing damage to propellers, shafts and hulls. The annual associated repair costs and other economic losses average greater than $53,000,000. This project was authorized most recently under WRDA 1988 with an annual authorization of $6,000,000. We are requesting an appropriation of $600,000 for this critical project and that the Secretary be directed: to continue construction of the Brooklyn 2A and Passaic River Barge reaches; and to complete Limited Re-evaluation Reports for the Brooklyn 2B, Arthur Kill (NJ), Shooters Island, Bayonne, and Kill van Kull (NY) reaches.

Studies

New York & New Jersey Channels, Arthur Kill Channel, Howland Hook Marine Terminal, NY.—The Arthur Kill Channel, Howland Hook Marine Terminal project was authorized by WRDA 1986, WRDA 1992 and WRDA 1996. The channel improvement includes deepening the existing 35 foot channel to 41 feet from its confluence with the Kill van Kull Channel to the Howland Hook Marine Terminal, and selected widenings and realignments of the channel for safety. The Port Authority has invested $35 million to modernize this terminal and, with New York City, approximately $18 million was spent for the berth dredging required to put this terminal in service. The marine terminal currently employs 275 people on peak days and is expected to grow to 650 to 800 by 2000. In addition the States of New York and New Jersey, the City of New York and the Port Authority are working to reestablish rail service to the terminal in the next year. The $500,000 additional appropriation request that we make for the Arthur Kill Channelcovers the initiation of pre-construction engineering and design for a 45 foot channel as authorized in WRDA 1996.

New York Harbor Anchorages, Red Hook Flats Anchorage, NY.—The Red Hook Flats Anchorage is part of the New York Harbor and Adjacent Channels project. It was constructed to accommodate ocean going cargo ships and tankers. The capacity within this anchorage is inadequate to accommodate today's vessels. The anchorage was designed by the Corps of Engineers in the early 1960's for a vessel averaging 525 feet in overall length and with a draft of 30 feet. Today's ships are almost 1,000 feet long with drafts of 40 feet or greater, therefore requiring additional space and depth beyond that allowed for in the original anchorage design. In order to provide safe navigation and maintain our bi-state port's capability to accommodate current and future vessel needs we request that $100,000 be appropriated to commence a feasibility study for the deepening of Red Hook Flats. The Corps has the authority to undertake this study under a Congressional resolution adopted by the Senate Committee on Environment and Public Works on December 5, 1980. The States of New York and New Jersey support this project, have expressed an interest to fund the non-federal share.

Port Series

We request that the Secretary be directed to accelerate the survey of the NY/NJ port facilities, Port Series (Number 5), under the national Port Series report program into fiscal year 1998 instead of the currently programmed time frame for fiscal year 1999. Out of seventy-two ports for which there are port series, only seven ports pre-date 1988, the year in which the NY/NJ Port Series was last published. Among the largest ports in the nation the NY/NJ Port Series is by far the oldest. The data collected in the Port Series is critical to the Corps' work on the New York & New Jersey Harbor, NY & NJ Navigation Study.

National Dredging Study.—The National Dredging Study, which we hope will be concluded in two years, is an important, but uncompleted, resource to forecast national dredging needs and to assess regional infrastructure investment. The results of the study are critical to decisions sought from the New York and New Jersey Harbor, NY & NJ Navigation study regarding channel deepening requirements in the Port of New York and New Jersey. We request that the Secretary be directed

to complete work initiated under Section 402, Water Resources Development Act (WRDA) 1992.

NEW JERSEY

Construction

New York Harbor and Adjacent Channels (Port Jersey), NJ.—The Port Jersey Channel in Bayonne, New Jersey presently serves 8 shipping lines at Global Terminal. This facility handles over 300 vessel arrivals annually with approximately 280,000 twenty-foot unit containers. More than 600 terminal employees with an annual payroll of $25 million, and 3,000 indirect jobs depend on this facility for their livelihood. As a privately owned terminal, Global pays approximately $10,000,000 in federal, state, and local taxes annually. In addition the channel also provides access for the U.S. Military Ocean Terminal and the Port Authority Auto Marine Terminal. The U.S. Military Ocean Terminal, which will remain in service under Army control until 1999 and then be turned over to the City of Bayonne, is being evaluated for a number of maritime and commercial re-use options. Because of the importance of the facilities, the State of New Jersey has designated disposal sites and is prepared to enter into an appropriate project cooperation agreement. Therefore, we request that the Secretary be directed to complete a Limited Re-evaluation Report, initiate Plans and specifications, execute a Project Cooperation Agreement and other related activities in order to initiate physical construction in fiscal year 1998. This channel was authorized for construction by WRDA 1986. Since the Mud Dump was the anticipated disposal location and that site will be closed September 1, 1997, we request that Congress stipulate that any increase in project cost due to the unavailability of the Mud Dump Site not be subject to the cost limitations provided by Section 902, WRDA 1986. We request $600,000 in appropriations for this project, which was authorized for construction in 1986.

Studies

New York Harbor and Adjacent Channels (Claremont Channel), NJ.—Located on the Hudson River in New Jersey, Claremont Channel has an average depth of 27 feet mean low water. A project to deepen Claremont Channel to 42 feet mean low water was authorized for construction in WRDA 1986. Although authorized to 42 feet, the Phase I modified project will provide shipping economies with a 34 foot channel, which would be sufficient for vessels already having adjusted their operations to meet current conditions through lightering and use of tidal flows. Two scrap metal exporting companies and a crushed stone aggregate terminal are the major users of this channel. Scrap metal exports have averaged over 1.5 million longtons per year and are our region's number one export. Meanwhile, the crushed stone transshipments approach 4 million tons annually. Combined, these three firms employ 300 persons directly and provide nearly 3,000 indirect jobs through suppliers, and support to longshore services. We request a $400,000 appropriation to conclude the Limited Re-evaluation Report, initiate Plans and Specifications, and execute a preconstruction engineering and design work for improvements to the Claremont Channel. The State of New Jersey has expressed an intent to fund the non-federal share and is prepared to identify an upland disposal site for the dredged material.

Operations & Maintenance

Ward Point Bend.—Ward Point Bend, at the southernmost point on Staten Island is shoaling such that the depth is currently 32 feet. The channel at this location needs a depth of 35 feet. Ward Point Bend serves the petroleum industry and acts as a secondary route both to and from Howland Hook in Staten Island and Port Newark/Elizabeth Marine Terminals in New Jersey. We have discussed this need with the New York District and the Sandy Hook Pilots who agree that this is a critical navigation safety and access concern. We are requesting an appropriation of $600,000.

CONCLUSION

A major feature of the budget request is the administration's full funding initiative. The idea that is advanced would fully fund new construction projects in the bill with the intent to complete those projects within 5 years. While there is some merit to committing up front the project funding, as well as precedent in public works financing, it presents a major problem for navigation projects. For example, large projects such as those planned for the Port of New York/New Jersey could be disadvantaged due to their size and cost. Budgeting for these projects according to the full funding method means that only a relatively small number of projects can

be started in any given year. How would a large project costing several hundreds of millions of dollars be handled? First, given the limitations on construction spending it likely would crowd out many other projects from being included or be crowded out by the understandable need for the Corps to fund a variety of projects. It might also cause projects to be segmented in order to make a large project fit both budgetary constraints and the five-year project schedule requirement.

In short, it concerns us that such a well-intended approach would slow the initiation of projects, cloud the commitment of the federal government to valuable projects and result in the completion of potentially unusable segments. Rather, Congress and the administration should collectively work to ensure that navigational capital improvement spending, rather than limited by artificial budget process constraints, is increased to support the many construction projects that could be initiated and to speed delivery of the economic benefits inherent in infrastructure improvements.

Lastly, we should note our concern about the subcommittee's new limits on hearing witnesses. We have long appreciated the willingness of the Subcommittee Members to hear our petitions for project funding. While it is a long and no doubt tiring process for the Members and staff, we value the opportunity it gives the Port and hope that next year the Subcommittee will consider returning to holding hearings for public witnesses.

PREPARED STATEMENT OF VERNON A. NOBLE, CHAIRMAN, GREEN BROOK FLOOD CONTROL COMMISSION

Mr. Chairman and Members of the Subcommittee: My name is Vernon A. Noble, and I am the Chairman of the Green Brook Flood Control Commission. I submit this testimony in support of the Raritan River Basin—Green Brook Sub-Basin project, which we request be budgeted in fiscal year 1998 for $3,700,000 in construction general funds.

The Commission was established in 1971, pursuant to an Act of the New Jersey Legislature, following disastrous flooding which took place in the Green Brook Basin in the late Summer of 1971. That flood caused $304,000,000 in damages (April 1996 price level) and disrupted the lives of thousands of persons.

In the late Summer of 1973, another very severe storm struck the area, and once again thousands of persons were displaced from their homes. $482,000,000 damage was done (April 1996 price level) and six persons lost their lives.

Thanks to the efforts of New Jersey's Representatives and Senators in Congress, the Corps of Engineers was authorized by Congress in 1986 to design a solution to this problem of flooding. The floods of 1971 and 1973 were only the most recent in a long series of severe floods. Flooding in this Sub-Basin dates back to the late 1800's when they were first recorded, and has become more damaging as the population of the area has grown.

The Green Brook Flood Control Commission is made up of appointed representatives from Middlesex, Somerset and Union Counties in New Jersey, and from the 13 municipalities within the Basin. This represents a combined population of almost one-quarter of a million (248,084) people.

The Members of the Commission are all volunteers, and for 26 years have served, without pay, to advance the cause of flood protection for the Basin. Throughout this time, the Corps of Engineers, New York District, has kept us informed of the progress of the project, and a representative from the Corps has been a regular part of our monthly public meetings.

Thanks to the vigorous support of New Jersey's Congressional Delegation, the Congress in 1986 authorized a comprehensive flood control project for the protection of the entire Green Brook Basin at a then established estimated cost, in 1985 dollars, of $203,000,000.

In 1987, Congress adopted Legislation which included a provision making it clear to the Corps of Engineers that protection is to be designed for the entire Green Brook Basin, rather than only the lower portion of the Basin, as had one time been studied by the Corps of Engineers.

We believe that it is essential that the Green Brook Flood Control Project be carried forward, and pursued vigorously to achieve protection at the earliest possible date. This project is needed to prevent loss of life and property, as well as the trauma caused every time there is a heavy storm.

We urgently request an appropriation for the project in fiscal year 1998 of $3,700,000.

New Jersey has strongly reaffirmed its support for the project to provide full protection for all of the people of the Basin. In January 1992, the New Jersey Legisla-

ture passed a Bill, which was signed by the Governor, establishing a program to plan for the non-Federal share for this and other water resources related projects. New Jersey has programmed budget money for its share of the project for fiscal year 1998.

The more quickly the construction of this project is completed, the less will be the total cost, and the sooner the project will provide protection.

Economics and costs are of course important, but personal human tragedy, and the loss of life, is more important.

During the past 12 months the New York District of the Corps of Engineers has released their Draft General Reevaluation Report and Supplemental Environmental Impact Statement, dated December 1996. This GRR/SEIS has been endorsed by the New Jersey Department of Environmental Protection. It has also been supported by a Resolution adopted February 5, 1997 by the Green Brook Flood Control Commission, and by a Resolution adopted February 4, 1997 by the Freeholders of Somerset County, New Jersey, where the construction is scheduled to begin in 1998.

We urgently request that the Congress provide an appropriation of $3,700,000 in construction general funds for the Green Brook Flood Control Project in fiscal year 1998.

Thank you, Mr. Chairman, and Members of the Subcommittee, for the opportunity to submit this testimony to you.

PREPARED STATEMENT OF THE WORLD WILDLIFE FUND

On behalf of World Wildlife Fund's (WWF) 1.2 million members, we appreciate the opportunity to submit testimony on the fiscal year 1998 Energy and Water Appropriations bill. We believe that this bill provides an opportunity to accelerate a bipartisan effort to better integrate environmental and economic objectives in water resources planning.

In this age of deficit reduction and broad public support for natural resources conservation, the Army Corps of Engineers must develop more cost effective and environmentally sensitive strategies for achieving both its traditional missions, such as flood control and navigation maintenance, and its more recent environmental protection mission. In reaching out for innovative approaches to its work, the Corps will rely increasingly on relationships with both public and private sector partners. Calling on the skills of agencies such as the Natural Resources Conservation Service, Fish and Wildlife Service and National Park Service to help design water resource management projects that encompass a wide range of objectives and which are environmentally and economically sustainable, the Corps can greatly increase the efficiency and effectiveness with which it accomplishes its missions. By incorporating input from a range of non-federal partners into these projects, the Corps can build a broader base of support and perhaps avoid the need for costly environmental mitigation and restoration requirements in future years.

Several projects authorized in the Water Resources Development Act of 1996 provide the Corps with opportunities to achieve this vision of public/private partnership and multiple objective planning. These include the Redwood River basin in Minnesota, the Upper Susquehanna River basin in New York and Pennsylvania, and the Everglades and South Florida Ecosystem Restoration project in Florida.

Redwood River Basin, Minnesota (WRDA 96, Sec. 543)

WWF requests that the Subcommittee include an additional $750,000 in fiscal year 1998 for the U.S. Army Corps of Engineers to participate in the Redwood River basin project.

Flooding in the Redwood River basin has resulted in agricultural, urban, and residential damages, particularly in the town of Marshall, Minnesota. Wetland drainage could be a major contributing factor to increased flood peaks and flood damages in the basin. Prior to agricultural drainage, roughly 43 percent of the basin was wetland. Approximately 19 percent of these former wetland acres are depressional and have potential value for stormwater storage. Over 82 percent of the watershed is in agricultural use, indicating extensive wetland drainage for agriculture. Prior to drainage for agriculture, many of the wetlands in the Redwood River watershed were closed basins that stored water during rainfall events and did not contribute directly to flows in the Redwood River.

Two flood control projects that were planned for the basin have not yet been constructed because of public opposition and environmental impacts. One of these, which would be constructed by the Corps, would divert water from the Redwood River to an adjacent river basin during periods of heavy flows. The residents of the other basin do not want to accept the water. The other project is a dam which was

originally contemplated by the Corps, but which lacked sufficient economic benefits to justify federal funding. This dam would periodically flood both farmland and a wildlife preserve.

The Redwood and Minnesota Rivers also are heavily polluted by suspended sediments, fertilizers and pesticides that largely run off of agricultural land. The State of Minnesota has initiated a "Clean Water Action Partnership" to involve communities in the clean up of the Minnesota River basin. The Redwood-Cottonwood Rivers Control Area (RCRCA), a county level joint powers board, is currently conducting a project to improve water quality in the Redwood River basin. This project involves landowners in the installation of soil and water conservation practices and the restoration of wetlands.

Wetland restoration and the installation of soil and water conservation practices could significantly reduce flood damages and generate other benefits including enhanced water quality in the Redwood basin. The Redwood watershed is also in the prairie pothole region of the upper Midwest, one of the most important waterfowl breeding areas in the United States, and therefore a high priority for wetland restoration. Other potential benefits of a restoration approach to flood damage reduction include reduced soil erosion and increased groundwater recharge and water supply.

The Natural Resources Conservation Service and RCRCA are building on the RCRCA's clean water project by developing a water management plan for the Redwood River watershed that would use wetland restoration and soil and water conservation practices to reduce flooding, improve water quality, increase wildlife habitat, and provide other benefits. WWF is helping to coordinate the Redwood River Water Management Project and is providing technical assistance. Other partners in the project include the Minnesota Board of Water and Soil Resources, the Minnesota Pollution Control Agency, the Minnesota Department of Natural Resources, and The Wetlands Initiative, a non-profit wetland restoration organization.

The agencies are currently developing a hydrologic model for a small sub-basin within the Redwood River watershed. This model will be used to estimate the potential reductions in peak flood flows that would result from small retention projects, such as wetland restorations and soil and water conservation practices. They will then extrapolate the results of the model to other portions of the Redwood basin above Marshall, Minnesota using a Geographic Information System. Based on the extrapolation, we will develop guidelines and recommendations for installation of these practices. We will then seek sources of funding through existing local, state, and federal programs to install the recommended practices and monitor the effect on flood peaks and water quality. Once the Redwood project has been well established, the project results can be used in planning and implementing watershed management strategies for the Minnesota River basin and areas with similar landscape features in the upper Mississippi River basin.

The success of this project is dependent on the participation and leadership of local landowners. In order to provide opportunities for direct landowner participation, RCRCA, the Caddo Lake Institute in Texas, and WWF are undertaking a project that will train landowners in monitoring water quality and hydrology in the Redwood River basin. The monitoring activities will be only one component of community participation in the Redwood project. It is our intent that local landowners will play a major role in developing and implementing the water management plan, as well.

The Corps of Engineers' St. Paul District has expressed interest in the Redwood project, but their participation has been extremely limited due to lack of funds. The project would benefit greatly from the involvement of the U.S. Army Corps of Engineers. In particular, the Corps' modeling and GIS expertise would improve the technical team's ability to model the demonstration watershed and extrapolate the results to other parts of the Redwood and Minnesota River basins.

Upper Susquehanna River, New York and Pennsylvania (WRDA 96, Sec. 567)

WWF urges the Subcommittee to provide an additional $500,000 for the Juniata Watershed in Pennsylvania and $500,000 for the Susquehanna River upstream of the Chemung River New York for flood damage reduction, water quality improvement, and wildlife habitat creation in the Upper Susquehanna River Basin in Pennsylvania and New York.

The Susquehanna River is the largest river in the U.S. east of the Mississippi. It contributes over half of the freshwater flow to the Chesapeake Bay and is therefore considered the "lifeblood" of this important estuarine system. The Susquehanna basin is suffering from a number of environmental problems that can be addressed through strategic watershed restoration and management, including non-point source pollution, flood damages, and declines in biodiversity.

The Corps' Baltimore District would use the requested funding for the first year of the project to accomplish a series of coordination and data collection activities with federal, state, regional and local agencies and the public. This data collection would be accomplished through individual meetings and public workshops with emphasis placed on coordination with local and regional conservation districts, planning agencies, and environmental organizations. The information collected would be used to define specific problem areas and potential solutions that have regional and local interest and support.

Following the assessment of problems and potential solutions, the Corps and partner organizations would identify the costs and outputs of a full range of non-structural solutions required to achieve the project objectives. The result of this analysis will be a comprehensive strategy that outlines projects and actions needed to address water resource issues in the Upper Susquehanna River basin and identifies non-federal partners. Funding under this authority in future years will be used to implement pilot projects to test the cost and effectiveness of various approaches for application in a basin-wide program.

Everglades and South Florida Ecosystem Restoration (WRDA 96, Sec. 528)

The South Florida ecosystem restoration project is of major importance to the environmental community because of its unique role in preserving the biodiversity of North America and because of the example that it sets for the world. While touted primarily as an environmental restoration project, the benefits of this project to Florida's economy are enormous. The hydrologic processes of the South Florida ecosystem must be restored to provide water flows of sufficient quantity and quality to support the Everglade's abundant wildlife, the water supply of the burgeoning lower east coast, and the aquatic life of Florida Bay. These functions, in turn, are essential to support the tourism, fishing and diving industries of South Florida.

WWF supports the Administration's request for full funding of the $75 million Critical Restoration Projects authority [sec. 528 (b)(3)]. Projects funded under this section could reduce total federal expenditures on restoration by addressing ecological and hydrologic issues as they are identified, rather than waiting for the completion of a feasibility study and for authorization and funding of a preferred alternative. Delays in implementation of critical projects could lead to further encroachment of exotic plant species and declines of endangered native species, resulting in costlier, future eradication and recovery costs.

WWF enthusiastically supports continued funding for the restoration of the Kississimme River. The Administration requested $3 million for this effort in fiscal year 1998. The Jacksonville District actually needs approximately $11.5 million over the next fiscal year for Kissimmee River restoration, however. We urge the subcommittee to add the difference of $8.5 million to the Kississimee project budget. This funding is crucial to the initiation of contracts, performance of design and monitoring work, and continuation of construction activities such as degrading existing levees and modifying the outlet structure to Lake Kissimee.

We also are concerned about the outstanding federal obligation to fund Stormwater Treatment Area 1 East. It is our understanding that the South Florida Water Management District has provided $15 million for land acquisition for this project, and may provide as much as $10 million in additional funding to complete the land purchase. This project was authorized in Section 315 of WRDA 96, which explicitly states that STA 1 East is to be constructed entirely at federal expense. We also are aware that it has been suggested that some of the money provided by the 1996 Farm Bill be used to fund construction of STA 1 East. We oppose this use of Farm Bill money for two reasons: first, acquisition of lands in the Everglades Agricultural Area and the East Coast buffer zone constitute our top priorities for this money; and, second, because construction of STA 1 East was included in legislation authorizing activities within the Corps of Engineers. For that reason, we believe that it is appropriate for the funding to come through the Corps' budget. We encourage Congress to provide up to $25 million to reimburse the South Florida Water Management District for its outlays for STA 1 East.

World Wildlife Fund appreciates the opportunity to submit our views on the energy and water budget for fiscal year 1998. We look forward to working with the Subcommittee on the Energy and Water Appropriations bill. Thank you.

OHIO RIVER VALLEY WATER RESOURCE DEVELOPMENT PROJECTS

PREPARED STATEMENT OF R. BARRY PALMER, EXECUTIVE DIRECTOR, ASSOCIATION FOR THE DEVELOPMENT OF INLAND NAVIGATION IN AMERICA'S OHIO VALLEY

Mr. Chairman and Members of the Subcommittee: I am R. Barry Palmer, Executive Director of DINAMO, the Association for the Development of Inland Navigation in America's Ohio Valley. DINAMO is a multi-state, membership based association of business and industry, labor, and state government leaders from throughout the Ohio Valley, whose singular purpose is to expedite the modernization of the lock and dam infrastructure on the Ohio River Navigation System. Our organization receives no money from the Federal Government. Largely through the leadership of this subcommittee and the professional efforts of the US Army Corps of Engineers, we in the Ohio Valley are beginning to see the results of 15 years of continuously hard work in improving our river infrastructure. However, the efforts in moving towards expeditious construction of improvements of lock and dam replacement projects in the Ohio Valley and the nation must not be sidetracked by the proposed policies for full funding and advance appropriations as set forth in the President's fiscal year 1998 Civil Works Budget for the US Army Corps of Engineers. We urge the Appropriations Committee to reject these proposed policies and restore the millions of dollars deleted from the President's budget in this and future years for lock and dam modernization on the Ohio River Navigation System. Lock and dam modernization projects already authorized for construction in the Ohio Valley would now take at least forty years or more to complete under these proposed policies and budget projections. In fact it is questionable whether some of the projects authorized but not yet funded for construction would ever be built.

We ask this distinguished subcommittee today for funding of lock and dam modernization objectives in the Ohio Valley in accordance with the full capability of the US Army Corps of Engineers. Attached is a letter from Colonel Alexander Jansen, Ohio River Division Commander, US Army Corps of Engineers, stating the Corps of Engineers capabilities. For fiscal year 1997 DINAMO is requesting funding for each project as follows:

Recommendations for fiscal year 1997:

For the Robert C. Byrd Locks and Dam modification project, formerly the Gallipolis Locks and Dam on the Ohio River, OH/WV, about $14,800,000 for continued construction.

For the Winfield Lock Replacement on the Kanawha River, WV, $11,200,000, for continued construction.

For the Olmsted Locks and Dam, replacing Locks and Dams 52 and 53 on the Lower Ohio River, IL/KY, $105,500,000, for continued construction. The lock contract was awarded last year for about $224 million and is scheduled to be completed in three more years. Continued design and engineering of the remaining elements of the project will also be required.

For improvements to Monongahela River Locks and Dams 2, 3 & 4, PA, $20,300,000, for continued construction. The Ohio River Division Commander reports that about $5,500,000 can be carried over from fiscal year 1997, reducing the appropriation request to $14,800,000.

For the McAlpine Lock Project on the Ohio River, IN/KY, about $10,400,000 to continue construction, but notably for initiation of site preparation and wharf improvements that will lead to construction of the new 110 feet by 1,200 feet lock addition.

For the Marmet Lock Replacement on the Kanawha River, WV, authorized for construction in the Water Resources Development Act of 1996, a total of $8,000,000 and a "new construction Start", in order to initiate real estate acquisition and complete Design Memorandums, initiating Plans and Specifications on the main construction contracts and initiating archeological field work.

For the Kentucky Lock Addition on the Tennessee River, KY, $6,100,000 to continue Pre-Construction Engineering and Design and provide for a "new construction start" by initiating two construction contracts. This project was authorized for construction in the Water Resources Development Act of 1996. About $4.7 million would spent to continue design work, including completion of the tower relocation and boat ramp relocation plans and specifications; continued lock, railroad relocation, and powerhouse access road relocation design memoranda work; and initiation of work on the structural properties and environmental design memoranda. About $1.4 million would be dedicated for construction of the relocation of the TVA transmission towers and relocation of a boat ramp.

For the Ohio River Mainstem Study, including studies related to modifications of Uniontown, Newburgh, and Cannelton Locks and Dams, $8,800,000. This level of funding is needed to complete the feasibility studies leading to an authorization report enabling construction of additional capacity for the Uniontown, Newburgh, and Cannelton Locks and Dams, Ohio River, IN/KY. Also the Corps of Engineers needs to initiate studies to determine where additional improvements may be needed in future years along the Ohio River Navigation System.

It is essential, given the manner in which inland navigation infrastructure is viewed in the budget, that this Committee fund major components of the Monongahela River Locks and Dam 2, 3, and 4 and the McAlpine Lock Addition and provide new starts for the Marmet replacement and the Kentucky Lock Addition.

Currently the Administration has taken large sums of money out of the inland navigation construction program in the next five fiscal years and allocated these monies for other purposes. For example, in the next five fiscal years, $258 million has been taken away from the Lower Monongahela project. The allocation for fiscal year 1998 is $2.7 million, while the capability of the Corps of Engineers is $20.3 million. At McAlpine, nearly $170 million has been reallocated for other purposes. The Administration recommends $1.7 million, while the Corps of Engineers capability is $10.4 million. Simply put it is essential that the Congress keep these projects funded on an optimal level.

You will note, Mr. Chairman, that we are requesting $8,000,000, and a "new start" for construction funding for the Marmet Lock Replacement. Also we urge your support for a "new start" for the Kentucky Lock Addition and $6.1 million or prepare for construction of major components of the new facility. Both the Kentucky Lock Addition and the Marmet project were authorized for construction by the Water Resources Development Act of 1996 and are at the point in their development where the Corps of Engineers could initiate acquisition of real estate and complete initial construction contracts.

The existing Marmet Locks and Dam is located in a highly populated area, and the proposed Marmet Lock has significant social impacts. An estimated 129 acres of real estate would be acquired in West Belle, including 71 acres of vacant land. Included would be 234 residential and 10 commercial units. Although alternative lock plans which would reduce the impact on the nearby residential communities were studied by the Corps, all other alternatives either do not provide satisfactory navigation conditions or have a much higher cost. Hence, design of the new lock plan has focused on limiting real estate acquisitions to the minimum necessary for construction.

A community advisory committee, led by Congressman Bob Wise, has been keeping the community informed of developments in the Marmet study. It is our understanding that there is a general consensus among the residents that the new lock is essential to the local industrial base and to insure jobs in the region. Most affected residents plan to relocate within a few miles of their present location, and most of the businesses expressed a desire to reopen in the general area. Many affected residents are concerned about further delays and are anxious for land acquisition to begin. DINAMO is sympathetic and appreciative of the concern of affected residents and comes to the committee today to ask for help in expediting the necessary real estate plans related to the project.

Presently, the future funding of lock and dam modernization for the nation could not be worse. Nearly $4.8 billion of lock and dam modernization projects on the Ohio River Navigation System alone has been authorized for construction by the Congress. About $800 million has already been invested in the region's waterways. It appears, however, that the Administration plans to spend no more than $100 million annually for future lock and dam modernization. The nation presently requires a $250 million annual level of investment on our nation's inland navigation infrastructure. At the projected level presently about $1 billion will be spent on upgrading our nation's navigable waterways in the next decade, when the requirement will be $2.5 billion.

Currently the Inland Waterways Trust Fund has a balance of $270 million and is receiving about $130 million annually from a 20 cents per gallon tax on diesel fuel for towboats operating on America's inland navigation system. Monies in the Inland Waterways Trust Fund are used to fund 50 per cent of a lock and dam modernization project, to include major rehabilitation and replacement. So given the "users taxes" currently levied on towboat operators to fund half the cost of lock and dam modernization projects, the monies flowing into the Trust Fund are more than adequate to fund an annual program of improvements pegged at $250 million. Under proposed policies and the Administration's low priority to major infrastructure improvements on America's waterways, present balances in the Inland Water-

ways Trust Fund will continue to grow and be used in large measure to offset the nation's budget deficit.

But the Congress can and should reverse the aforementioned scenario. An appropriate way to bring inland navigation construction out from behind the moon is to fund major components of projects already under construction and to provide new starts for construction projects already authorized. The value of these investments has already been proven.

Finally, Mr. Chairman, I would like to conclude by restating the importance of the investments made on our nation's waterways, investments in people, investments in infrastructure, investments in America. The inland waterways are both a model and a methodology for what works. It has been this nation's investment in inland navigation that has allowed the interior regions to compete with other regions on a more level playing field. For instance, the coal in the West Virginia mountains has always been there. But without transportation this coal is valueless. Transportation to market gives value to coal, ores, and raw materials. The less that transport to market costs, the more value it adds—an vice-versa.

Commerce, like water, flows along the lines of least resistance. Production and industry have gravitated to the areas and along the routes of lowest costs. The industrial and agricultural development that has occurred along the inland waterway system of interior America has benefited this Nation beyond measure.

On behalf of the Board of Directors and members of DINAMO, we thank you for the opportunity to talk about the importance of expediting these urgently needed improvements.

PREPARED STATEMENT OF PENNY RYERSON, PORT MANAGER, PORT OF TOLEDO, OR

The Port of Toledo was incorporated May 10, 1910. Toledo, Oregon is located six road miles east of Newport, Oregon and fourteen river miles up Yaquina River from Newport. Toledo is a timber dependant community and as a result of the downfall of the timber industry, is a depressed area.

All ports are aware of the budgetary pressures under which the appropriations' subcommittee and your colleagues must operate in considering the spending need of the nation. Claims competing for a fair share of the fiscal year 1998 budget far exceeds what reasonably can be provided.

Port, large or small, are a valuable asset to any community. They have the capability to diversify from water related projects, promote and develop new businesses to their communities. Also, they can contribute toward national and international trade.

In addition, once the proposed projects are completed and ports become self-sufficient, ports would be in the position to help relieve the government from the continued request for funding.

Ports are able to create jobs, enhance the economic base for their community, put displaced workers back into the work force with higher paying jobs and with health benefits. Also, they are instrumental in strengthening the family unit.

Oregon ports have voiced concerns on the importance of maintenance dredging for Coastal ports as well as for the Columbia River. The Port of Toledo continues to support the federal operations and maintenance dredging program for Oregon Ports.

A continued O & M program ensures further economic growth of the coastal communities. The port values the subcommittee's ongoing commitment to enhance local economies.

Port manager Ryerson has been aware from her journey's to Washington, D.C. for the past two years that the Corp. Of Engineers have been talking about eliminating the shallow draft ports from the Corps. Dredging budget.

The Port of Toledo comes before this subcommittee to request support for the continued maintenance dredging of shallow draft ports. Attached to this written statement are the home-based vessels that utilize the Port of Toledo facility to have much needed repairs and maintenance. This does not include the local fishermen that use the boat repair facility. These vessels generate approximately $15,000 or more per week per vessel in our small community. Having repairs done in our community by these vessels takes sometime three to four months. Each vessel that stays in our community for repairs generated approximately $60,000 per month to our community and surrounding communities.

Toledo at one time had six mills. With the downsizing of the timber industry the community has only one mill which is Georgia Pacific. Without dredging our Yaquina River these vessels will be unable to use our repair facilities.

Without Congressional support for continued maintenance dredging for shallow draft ports this community already depressed will be unable to move forward. Not counting the amount of people that will be out of work as the timber workers.

The State of Oregon is trying to contend with funding for all ports, but is unable to accommodate all ports because of the passage of Measure 47. The larger ports being prioritized are Port of Portland, Port of Coos Bay and Port of Newport.

The Port of Toledo receives its funding from the tax payers. We are trying hard to diversify to generate our own income. With a port budget of $197,010 it would be impossible for our port to do a cost sharing with the state for dredging.

Shallow draft ports are aware of the importance of the deep draft ports, but feel that we are as important in our own small way for our community.

I would like to thank the subcommittee for allowing me to address my concerns.

PREPARED STATEMENT OF THE LAKE SUPERIOR AUTHORITY

Testimony to the Energy and Water subcommittee in support of an appropriation for $9 million ($4.5 million per year over two years) for Lake Superior Center.

The Water Resources Development Act, passed by Congress in 1996, authorizes the U.S. Army Corps of Engineers to assist in the construction of Lake Superior Center—A Center for freshwater education and a forum for scientific communication and cooperation to impact future treatment of all freshwater bodies.

The focus of Lake Superior Center is to increase the awareness of the public to one of our nation's truly great natural treasures—the Great Lakes. The Center will play an important role in our state, region and nation in several ways: as the world's only facility dedicated to showcasing our nation's freshwater resources; in educating the public, policy-makers, researchers, and students on their use and preservation; and, in ensuring these resources are available for future generations. It will integrate freshwater science, economics, and social education to provide as total an understanding as is possible about the functions and factors affecting the future of America's most precious resource. There is no other facility in the country duplicating this goal.

There are only three places in the world with major concentrations of the earth's available freshwater resources, the United States Great Lakes, Lake Baikal, and the African rift lakes. The Great Lakes contain approximately 20 percent of these resources (one-half are located in Lake Superior alone). Because they are in the U.S., the Great Lakes with their large volume of freshwater provides an opportunity that others cannot for study, protection, and understanding of the systems and processes that affect these resources and the necessary stewardship they require.

The health of our nation's freshwater resources are a matter of national importance. A ready supply of clean drinking water is necessary to our survival. It is important that we take care to keep water a renewable resource to the extent that drinkable, usable water does not become a scarce commodity. Of all the water on the planet only 2.8 percent of the earth's water is freshwater. We can ill afford to have our freshwater become a scarce commodity.

The American public ranks water quality as their number one environmental concern. Nearly 40 million people live in the Great Lakes region. The commerce, economics, public health and recreation in these cities, towns, and rural areas are dependent on this great inland freshwater system. 73 percent of the nation's steel is produced in the Great Lakes basin. Grain, iron ore and other commodities are transported to nearly every state in the nation via the nation's largest freshwater port in Duluth, Minnesota. Great Lakes carriers deliver the coal that powers most of Minnesota, Wisconsin, Michigan and other Great Lakes states. Many U.S. communities rely on water directly from the Great Lakes for their agricultural and manufacturing processes.

Surface water is a finite resource, continually cycling through the processes of precipitation, transportation, storage, and evaporation.

The same water we use today has been used by others for centuries. While filtration can aid in maintaining clean water, it cannot remove all contaminates.

In some cases, such as with Lake Erie, the systems retention rate is approximately 3 years. In the case of Lake Superior, located upstream of the entire Great Lakes chain, it is over 200 years. The results of a contaminated Lake Superior would be devastating. Where contamination has previously occurred in our freshwater systems, Congress is forced to react to these problems at great costs. Oftentimes, the result is additional federal regulation and mitigation.

Regulation and enforcement agency leaders realize that an informed public can be helpful to their mandate to develop and implement policies to protect natural resources and likewise, business leaders realize that promoting voluntary protection

results in decreased costly regulations. With so much dependence on this highly concentrated, finite resource, we need a Center capable of educating the public and students of all ages about the ongoing stewardship of these resources. Lake Superior Center will stand as a national beacon for the protection of freshwater resources for future generations. It will provide the vehicle by which private citizens, businesses, scientists, students, and environmentalists can come together and become the caretakers for this resource and will serve as an intermediary to translate basic scientific research to the public.

Lake Superior Center offers the preventative medicine rather than the surgical solution. The ultimate result will be a reduction of costly environmental mitigation and a reduction in the need for restrictive legislation that encumbers expensive monitoring and enforcement components.

Concern over availability of freshwater resources continues to rise across the U.S. Last March, in the agricultural communities in our western states the nation's largest water agency began trading water rights electronically—creating the first true market for the buying and selling of freshwater in Central Valley, California. Understanding basic water processes are paramount to dealing with issues of scarcity, contamination, flowage and proper management.

Lake Superior Center will provide the scientific education needed for our nation's youth and public to have a positive impact on these resources and the knowledge base to promote the development of sustainable uses and business practices. Currently, over 150 citizens from Minnesota, Wisconsin, Michigan, and Ontario participate in Lake Superior Center's voluntary stewardship program monitoring water clarity.

The lack of scientific education opportunities for our nation's youth provides even more reason for an institution such as Lake Superior Center. The Center augments the public school system as a place where students can learn from hands on lab work and field study programs. In addition to providing programming concerning the science of freshwater, the Center will also focus on the physical and human geography of the Great Lakes.

Already educators from around the Great Lakes have designated Lake Superior Center the official clearinghouse and regional subcenter for freshwater education. The Center is able to bring an important educational component to schools and communities around the Great Lakes through a number of vehicles developed by trained educators and staff. As an informational clearinghouse, students will learn from renowned scientists associated with organizations engaged in the study of freshwater. The Center currently offers K–12 education programs, lectures, colloquiums and seminars, teacher training, and has produced the first-of-its-kind lesson and resource guidebook for K–12 teachers throughout the Lake Superior region. Broadcast capability from the Center will allow an even greater number of people ready access to the in-house programs and information.

Lake Superior Center will provide the final link in the chain to maximize federal investment currently existing in the area by providing the place for scientists and organizations to interpret their research information to the general public and students. Some examples of these federal investments include: the nation's only Freshwater Quality EPA Laboratory (located on Lake Superior), the Sea Grant programs of Minnesota, Wisconsin, and Michigan, the National Parks of Pictured Rocks, Apostle Islands and Isle Royale, The Great Lakes Indian Fisheries Commission, and programs of the U.S. Fish and Wildlife Service, the National Oceanographic and Atmospheric Administration, the National Forest Service and the Army Corps of Engineers. All are current or potential partners with Lake Superior Center.

Researchers increasingly stress the importance of this technology transfer to the general public so that the knowledge gained in laboratory and in the field can provide a basis for critical thinking and improved decision-making. Lake Superior Center provides for the interpretation of the highly technical work produced by those agencies in an understandable form. The Center's people friendly and engaging programs will attract a broad audience and bring an opportunity for national attention to focus on the positive work the government agencies focusing on freshwater issues.

Funding Request

Lake Superior Center was incorporated in 1989 as a 501(c)3 not-for-profit entity. In 1990, the State of Minnesota established the Lake Superior Authority to develop, own, operate (through mutual agreement with the not-for-profit entity), and maintain the Lake Superior Center. The Lake Superior Center Authority is a five-member body appointed by the Governor of Minnesota. It has a $16 million appropriation from the Minnesota legislature, which is contingent on private match and on being recognized for its national significance and contribution by a financial commitment from the federal government.

Lake Superior Center needs to complete construction of its 62,000 sq. ft. facility by 1999. Timing for the project is critical to lever commitments from the State of Minnesota, City of Duluth and private individuals, and to complete the project within its $33.8 million budget.

When the Center originally approached the federal government for funding seven years ago (in 1990), members of Congress requested the Center develop public and private matching sources.

The Center is proud to report that it has now raised over 70 percent of the $33.8 million goal from the State of Minnesota, the community in which it is located, and private sources. We now ask the federal government to provide the final $9 million needed to complete the project. These funds would cap the government commitment to the project. Once completed, the Center will be self-supporting and will not require ongoing operating funds from Congress or the Corps of Engineers.

The Center is requesting this one-time investment to release the following commitments:

[In millions of dollars]

State of Minnesota	16
City of Duluth	5
Private funding sources [1]	3.8
Total	24.8

[1] $3.7 pledged-to-date; $100,000 anticipated by end of Congress. (Additional private support for the Center has been raised for operations and programs totally $2,500,000 from 1990 to present not included in the $33.8 million project total bringing total private investment in the Center to date to $6.2 million.)

The Center has received broad support from private business, individual donors, and community and private foundations at various gift levels from major gifts to memberships. Private contributors include: First Bank System, John S. and James L. Knight Foundation, Burlington Northern Santa Fe, the USS Great Lakes Fleet, Lakehead Pipeline, Merrill Lynch, Minnesota Power, the Blandin Foundation, Northwest Area Foundation, Norwest Bank, Piper Jaffray Inc., Environment Canada, National Environmental Education and Training Foundation, I Hubbard Foundation, Minnesota Education Association, and many others.

The timing is critical. The Center must break ground as soon as possible to meet its completion date of June, 1999, and ensure the timely release of state funds and private pledge payments. A positive response from Congress at this time will not only leverage its current investment in programs and agencies located on the Great Lakes but will lever matching funds of over $24 million. The final funding distribution for the $33.8 million will be: 47 percent state, 15 percent city, 11 percent private, and 27 percent federal.

International Connections

Lake Superior Center will be an important link internationally to other bodies of freshwater and illuminates the value of the United States as they relate to these worldwide resources. Since its inception Lake Superior Center has been working with Canadian organizations and agencies to bring about mutual partnerships. Such as joint programming with Environment Canada and the International Joint Commission. Teacher training and in-school programs have been presented in Canadian schools and volunteers from Canada participate in the Center's water quality monitoring activities.

The Center has initiated other international connections in Russia. Lake Baikal, located in eastern Siberia, is the largest freshwater lake by volume and depth. Lake Superior is the largest freshwater lake by surface area.

The vastly different physical configurations' historical development and political systems give rise to fascinating contrasts that provide additional study opportunities toward the understanding Lake Baikal and the Great Lakes.

Our scientific community has long-term associations with the Russians that are being elevated in importance and our foundation community is now demonstrating interest. Russian leaders at various levels firmly believe in the power of public awareness in shaping their new nation. Lake Superior Center has already been helpful in connecting Russian leaders with their counterparts in the U.S. and in Canada to address topics such as models for management of a watershed that contain many governmental units; creation and management of national parks; and tourism and recreational uses that preserve the integrity of the resource. We look forward to continuing involvement, helping where we can within our capacity.

A future opportunity awaits us with the great rift lakes of Africa. They are a major part of the surface freshwater story of earth with large freshwater resources

concentrated in a compact region of eight lakes. A new University of Minnesota initiative, the Large Lakes Observatory headed by Dr. Tom Johnson will bring new levels of research capacity to these and other large lakes. Dr. Johnson has extensive knowledge of the African lakes, and as Lake Superior Center board member is ideally suited to help develop these international connections with African Rift Lakes research. Eventually the Center plans to be a connecting point for scientists and engineers from around the world coming to workshops and seminars showcasing the national vision and commitment to the preservation of Earth's most precious natural resource.

Summation

The worlds only Center focusing on awareness and understanding of our valuable freshwater resources will be an important resource for future generations and will ultimately reduce the cost of federal mitigation and regulation.

The timing is now—all of the pieces are in place and ready to go—it is a one-time investment without ongoing fiscal commitments.

Lake Superior Center has developed the partners, raised the money, and begun implementing important education programs. Now it just requires a portion the federal appropriation of which we are authorized, to complete it.

Everyone benefits: educators, students, business, conservationists, researchers, and the general public.

It is rare that one organization is able to bring these diverse groups together under one banner.

Lake Superior Center offers the federal government an opportunity to help the nation better understand freshwater. What better time than now? What better place than at the headwaters of the Great Lakes system?

Thank you for considering this important investment in our nation's future.

PACIFIC NORTHWEST WATER RESOURCE DEVELOPMENT PROJECTS

PREPARED STATEMENT OF JOHN ETCHART, CHAIRMAN, NORTHWEST POWER PLANNING COUNCIL

Mr. Chairman and members of the subcommittee, my name is John Etchart, and I am chairman of the Northwest Power Planning Council. I appreciate the opportunity to submit written testimony in support of the Clinton Administration's fiscal year 1998 budget request for several programs under the jurisdiction of the Energy and Water Development Subcommittee. The Council was established by Congress in 1980, and created as an interstate compact by the states of Idaho, Montana, Oregon and Washington. Its purpose is to develop a 20-year regional electric power plan to ensure for the Pacific Northwest an adequate supply of power at the lowest possible cost. The plan is designed to ensure that the region only acquires resources it needs and that it acquires the lowest-cost resources first. The Council also was directed to develop a major program to rebuild fish and wildlife resources that have been harmed by hydroelectric development in the Columbia River Basin. The Council carries out its responsibilities under the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act), Public Law 96–501.

Congress recognized in the Northwest Power Act that the resources of the Columbia River Basin are important to the region and the nation. Both the Council's power plan and its fish and wildlife program were developed under the mandates of the Act, in which Congress provided direction and the framework for the Council as a policy and planning body. Three federal agencies under the jurisdiction of the Subcommittee, the U.S. Army Corps of Engineers, the Bureau of Reclamation, and the Bonneville Power Administration, all administer programs that are critical to the Columbia River Basin. The Council works closely with all three agencies in fulfilling its statutory responsibilities to develop its regional power plan and implement its Columbia River Basin Fish and Wildlife Program. The relationship among the Council and the agencies is unique and reflects Congress' desire to provide an effective management structure for the resources in the basin. Through this arrangement, the federal agencies and the four Northwest states share funding, implementation and regulatory responsibilities in the management of the basin's power and fish and wildlife resources.

Because of these shared and sometimes overlapping responsibilities, the Council has a continuing interest in the budgets of the three federal agencies. The Council's fish and wildlife program is funded by a combination of revenues from electricity sales and federal appropriations. While a significant portion of the fish and wildlife program is funded by Bonneville, the other federal agencies also are requesting to

commit appropriated funds well in excess of $150 million in the basin in fiscal year 1998. A large portion of these funds, especially those appropriated to the Corps and Bureau of Reclamation for construction, operations and maintenance, will be repaid by the region's electric ratepayers through Bonneville.

Electricity Restructuring and the Fourth Northwest Conservation and Electric Power Plan

In accordance with the Northwest Power Act, the Council is in the process of reviewing and updating its power plan. The Northwest Power Act requires the Council to review the power plan at least every five years. The purpose of the plan, as required by the Northwest Power Act, is to assure the region of an adequate, efficient, economical and reliable power supply. Historically, the plan has incorporated a broad and detailed review of electrical resources that balance sometimes competing attributes. Actions derived from this careful review have charted the least expensive (both in economic and environmental terms), yet most flexible course the region can take down the uncertain path of resource acquisition to meet demand for electricity in the future. The fast-approaching changes in the electricity industry require the Council to take a new approach in the development of its latest power plan.

The draft version of the Council's most recent, and fourth, power plan was adopted by the Council on March 13, 1996, and was made available to the public for review and comment. Because of the Comprehensive Review of the Northwest Energy System, initiated by our four governors in January 1996, the draft contains few recommended actions or policy decisions. It is instead a reference tool, containing background on the industry and its current restructuring, as well as analysis of some of the major issues that must be addressed as the Northwest advances toward its new energy future. Because of the need to be consistent with the recommendations of the Comprehensive Review, progress in completing the new plan was delayed for several months while the Review's steering committee completed its work. A revised draft plan, incorporating elements from the final report of the Comprehensive Review, will be released for another round of public comment this spring before the final plan is adopted this summer.

Columbia River Basin Fish and Wildlife Program

The Council's fish and wildlife program complements its power plan and is designed to protect, mitigate and enhance fish and wildlife, and related spawning and rearing grounds of the Columbia River Basin that have been adversely affected by the construction and operation of hydropower facilities. Unlike the National Marine Fisheries Service, which has specific statutory authority to recover Endangered Species Act-listed salmon runs in the Snake River, the Council's focus is much broader. The Council's mandate under the Northwest Power Act is to protect, mitigate and enhance all populations of fish and wildlife that are affected by the operation of hydroelectric facilities in the Columbia River Basin.

The Council last amended the program in December 1994. As required by the Northwest Power Act, measures in our program are based on the best available scientific knowledge and were developed with broad public involvement.

Currently, the Council is considering amending its fish and wildlife program. One primary impetus for this is a scientific report on the program that was released last year. In March 1995, the Council asked the Independent Scientific Group (recently reconfigured and renamed the Independent Scientific Advisory Board) to review the science underlying the Columbia River Basin Fish and Wildlife Program and to propose a conceptual foundation for that program. The scientists spent more than a year and analyzed more than 4,000 pieces of literature before drawing the conclusions contained in the prepublication report that was issued last September. The report describes an approach to fish recovery that would emphasize the ecosystem inhabited by the fish at every stage in their life cycles. This approach, deemed "the normative ecosystem," would shift recovery efforts toward restoring the kind of conditions that nurture salmon and steelhead and other fish and wildlife in less-developed habitat. At the same time, the report acknowledges that development has occurred and will continue, and fish and wildlife recovery measures will require policy calls on the trade-offs among ecological needs and the cultural and economic needs of society. The report stresses the importance of a continuum of habitats from freshwater streams, through the estuary and out into the ocean. It also suggests that core populations of salmon in particularly healthy habitat, such as the Hanford Reach in Washington state, can be used to recolonize adjacent habitat areas where salmon are in decline. The report is out for public comment, after which it will be finalized by its authors.

Concurrent with the public review of the Independent Scientific Group's report, the Council is preparing a draft paper that will explore questions about the frame-

work and conceptual foundation of the Council's fish and wildlife program. Finalizing the scientists' review and developing a framework will help prepare the way for the formal amendment process, which may begin later in the year.

The Northwest Power Act imposed responsibilities on federal river, land and power agencies to act in a manner consistent with the Council's power plan and fish and wildlife program or to consider the plan and program in their decision-making "to the fullest extent practicable." The ability of federal agencies to meet their objectives under the Act is tied directly to their funding levels and budget priorities.

U.S. ARMY CORPS OF ENGINEERS

The Council continues to support the Corps' Columbia River Fish Mitigation Program. The primary focus of the program is to reduce the mortality of juvenile salmon and steelhead as they migrate down the Snake and Columbia rivers to the ocean from their spawning grounds. While significant sums of money have been appropriated for the program over the past decade, and many improvements have been made, much work still remains. The Corps' fiscal year 1998 budget proposal for the program is $127 million, and includes funding for several critical studies and activities that are crucial to recovering, rebuilding and maintaining the anadromous fish runs in the Columbia River Basin. The budget includes adequate funding for continued testing and installation of new or improved juvenile bypass and related transportation facilities at the mainstem dams: Lower Granite, Little Goose, Lower Monumental and Ice Harbor dams on the Snake River, and McNary, John Day, The Dalles and Bonneville dams on the Columbia. The Council supports the Corps' full budget request of $127 million.

Juvenile Fish Passage Improvements

In 1987, the Council helped develop a consensus among private and public utility interests, Indian tribes, fish and wildlife interests and the Bonneville Power Administration on the need for expedited completion of new and improved fish bypass facilities at all the mainstem dams. This regional consensus resulted in an original schedule for completing these facilities by 1994. Unfortunately, several unforeseen factors have made the original schedule impossible to keep. Escalating costs and unexpected, dramatic declines in the population of several of the basin's anadromous fish runs have contributed to a longer implementation schedule for the program. This has led to new demands on the Corps to develop, test and install facilities not envisioned initially, such as extended-length bypass screens, surface bypass facilities, structural improvements in the projects to reduce dissolved gas levels when water is spilled at the projects to assist the migrating fish, and installation of passive integrated transponder (PIT) tag detectors (electronic devices being installed at some hydroelectric projects that can identify tiny electronic transmitters implanted in the bodies of some of the passing salmon).

The Corps is requesting a total of $58.641 million in fiscal year 1998 for juvenile fish passage improvements. This includes $7.85 million for the completion, maintenance and improvements to extended-length screen bypass systems at Lower Granite, Little Goose and McNary dams. In addition, it includes $10.2 million to complete engineering design and begin construction of extended-length screens at John Day Dam. The Corps also is requesting $24.39 million for work at Bonneville pertaining to the relocation of the juvenile outfall facility and a PIT tag detector. In addition, the Council supports the Corps' request for $2.1 million for completing work on the John Day PIT tag detector facility. The Council believes that making the federal projects safer for juvenile and adult migrating continues to be of the highest priority, and encourages the Subcommittee to continue funding the program at the highest possible level to ensure the planned facilities are in place at the earliest possible date.

Surface Bypass Facilities

The Council supports continued testing, and if beneficial, the development and installation of surface bypass facilities at the mainstem hydroelectric dams. These new systems direct juvenile fish over spillways and may help salmon pass the dams more quickly and avoid the pressure changes that occur when the salmon go through conventional bypass systems. The Corps has included $36.43 million in the fiscal year 1998 budget to design, test and develop surface collection and bypass systems at Lower Granite, The Dalles, John Day and Bonneville dams. The Council supports moving forward at these projects, as proposed by the Corps, and believes that surface collection facilities may offer a more efficient solution to passage difficulties at the dams.

Dissolved Gas Abatement During Spill

The Council continues its support of the development of a full-scale program to ensure that spill is carefully monitored and its effects on dissolved gas levels and fish health are evaluated fully. It is essential that dissolved gas abatement technologies, such as spillway flip lips, be installed expeditiously so that intentional and unintentional spills do not produce excessive dissolved gas levels. These structural improvements also will help keep the gas levels within prevailing state limits. The Council is pleased that the Corps is budgeting $10.3 million for gas abatement studies and $8.97 million for the installation of spillway flip lips at Ice Harbor and John Day dams in fiscal year 1998. The timely installation of gas abatement facilities and the implementation of a comprehensive, science-based monitoring program may help alleviate much of the uncertainty currently surrounding the spill program.

John Day, McNary and Lower Snake River Drawdown Studies

For fiscal year 1998, the Corps is requesting $4.1 million and $3.2 million, respectively, for reservoir drawdown studies on the Lower Snake River and at John Day Dam. The funds requested for the Lower Snake River will be used to gather additional biological information and to continue detailed engineering and economic studies on natural river drawdown alternatives. The activities associated with the John Day study likely will include scoping work and biological studies, although the actual scope, schedule and cost estimate for the study have not been determined. The Council is aware of a considerable amount of controversy surrounding these proposed activities, especially with regard to the John Day study. The Council believes, however, that it is in the public's best interest to proceed with some specific studies so that valuable scientific and economic information particularly regarding the regional regional effects on fish and wildlife, agriculture, local commerce, community stability, irrigation, navigation, and system reliability can be compiled. This will provide a more sound basis for future decisions on whether to proceed with reservoir drawdowns.

With regard to the John Day project, the Council specifically recommends that the Corps focus on the effects of drawdowns deeper than minimum operating pool. According to a letter from Will Stelle, Regional Director of the National Marine Fisheries Service, to the Corps of Engineers dated December 23, 1996, recent science points to deeper drawdown of John Day as having potentially far greater benefits to anadromous fish, and considers drawdown of John Day to minimum operating pool to provide little or marginal benefits. In light of the Corps' having completed a reconnaissance level study on the drawdown of the John Day reservoir to minimum operating pool (Appendix B to the System Configuration Study, Phase I, April 1994), the Council recommends that no additional funding be allocated for further review of this alternative. The Council's current fish and wildlife program, as well as the NMFS Biological Opinion, both call for drawdown of John Day to minimum operating pool after mitigation for the impacts is in place. NMFS has moved away from the minimum operating pool alternative already; the Council may consider amending its program on this point during its next fish and wildlife program amendment process.

The Council also recommends that a portion of the money requested by the Corps for John Day drawdown studies be used to investigate the feasibility of modestly lowering the reservoir behind McNary Dam. Insufficient information exists to determine whether the benefits for salmon from a minimal pool lowering at McNary Dam, which could increase spawning habitat upriver in the Hanford Reach, would be more or less than from a deeper drawdown at John Day. Accordingly, the Council believes that both should be examined by the Corps.

BUREAU OF RECLAMATION

The Council continues its support of the Umatilla Basin Project in Oregon. This is a water exchange project whereby water is pumped from the Columbia River to supply irrigation districts, which then leave water in the Umatilla River to help rebuild salmon populations. The Bureau has included $9.254 million in its fiscal year 1998 budget for continued construction of phase II of the project.

The Bureau is proposing to spend $8.76 million in fiscal year 1998 on the Yakima River Basin Water Enhancement Project. The Council also supports this project, which will employ structural and non-structural water conservation measures to increase the reliability of the irrigation supply and enhance streamflows in the Yakima River. In addition, tribal water supply facilities will be improved and tribal economic development, fish and wildlife, and cultural programs will be enhanced.

The Council also supports the Columbia and Snake River Salmon Recovery Project, which the Bureau is proposing to fund at $13.062 million for fiscal year

1998. The majority of the funds will be used for water conservation and water acquisition (in accordance with state water law) projects in the Columbia and Snake river basins

BONNEVILLE POWER ADMINISTRATION

The Bonneville Power Administration provides electric power (about half of the power consumed in the Pacific Northwest), transmission (about 80 percent of the region's high voltage capacity), and energy services throughout the Pacific Northwest, a 300,000 square mile service area. Bonneville markets the power produced at 30 federal hydroelectric dams in the region, which are operated by the Army Corps of Engineers and the Bureau of Reclamation, and acquires non-federal power and electric energy conservation resources to meet the needs of its customer utilities. Bonneville receives no annual appropriations from Congress, funding the expense portions of its budget and repaying the federal investment in the Federal Columbia River Power System with revenues from electricity sales. During fiscal year 1998, Bonneville plans to pay the Treasury its total annual scheduled payment, which is estimated to be $805 million.

Bonneville is the primary implementor of the Council's power plan and fish and wildlife program. The budget proposed by Bonneville for fiscal year 1998, which includes operating expenses, capital investments and capital transfers, totals $3.467 billion. This is nearly identical with Bonneville's revised estimate of its fiscal year 1997 budget, and is consistent with its 1996 Final Rate Proposal.

Fish and Wildlife

In the fall of 1995, the Administration and Congress agreed on a fixed budget for Bonneville's fish and wildlife recovery efforts in the Columbia River Basin. Under the terms of that agreement, which was further defined and formalized last September in a memorandum of agreement signed by the secretaries of the Army, the Interior, Commerce and Energy, Bonneville will incur costs, on average, of $435 million per year for five years on fish and wildlife activities. These funds fall under a number of different categories, including direct expenditures on fish and wildlife projects, power purchases, reimbursements of appropriated funds to the Corps of Engineers and the Bureau of Reclamation, capital repayment and foregone revenues. For fiscal year 1998, Bonneville estimates that its total fish and wildlife budget will be $421.1 million.

Under the agreement, the portion of the budget related to direct expenditures, reimbursements and repayments is set at $252 million per year. The hydropower portion, however, will vary from year to year depending on winter precipitation. Based on historic water records, the value of lost hydropower in an average year will be about $183 million, bringing the total to $435 million. This is about 12.5 percent of its total fiscal year 1998 budget of $3.467 billion. For fiscal year 1996, Bonneville reported total fish and wildlife program costs of $215.5 million, a significant reduction from the expected average of $435 million. This is largely due to the fact that costs attributed to lost hydropower (foregone revenues and power purchases) totaled only $40 million due to a higher than average snowpack in the basin.

In the Energy and Water Development Appropriations Act for fiscal year 1997, the Committee added a new section, (4)(h)(10)(D), to the Northwest Power Act, which requires the Council to appoint an 11-member Independent Scientific Review Panel to review fish and wildlife projects proposed to be funded through Bonneville's direct program. For fiscal year 1998, Bonneville expects to spend $127 million on this part of its program.

Relying on recommendations from the National Research Council, the Power Planning Council appointed 11 scientists to the Independent Scientific Review Panel earlier this calendar year. Also in accordance with the Act, the Council is establishing scientific peer review groups that will assist the Panel in its review process. The peer review groups and the scientific panel will review proposed projects and make recommendations to the Council no later than June 15 of each year. Recommendations are to be based on a determination that projects are based on sound scientific principles, benefit fish and wildlife, and have clearly defined objectives and outcomes with provisions for monitoring and evaluation of results. The Council must make the scientific panel's recommendations available to the public for review and comment, and also must consider the impact of ocean conditions and determine whether the projects employ cost-effective measures, before making its final recommendations to Bonneville for project funding. The Council is aiming to adopt its final recommendations for Bonneville in late August.

The Council takes seriously the Committee's concern that fish and wildlife funds be spent judiciously. Consequently, we are working with Bonneville and the region's fish and wildlife managers to implement the requirements of section (4)(h)(10)(D),

which will help ensure that Bonneville's ratepayers' funds are spent on projects that have the greatest value in recovering and providing mitigation for the Columbia River Basin's fish and wildlife populations.

Mr. Chairman, thank you for this opportunity to share our views with you. We sincerely appreciate the thorough consideration that this subcommittee has given to the needs of the Pacific Northwest over the years.

PREPARED STATEMENT OF THE COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

Thank you for the opportunity to submit written testimony on behalf of the members of this Commission regarding the fiscal year 1998 budget of the Army Corps of Engineers (Corps) for the Columbia River Fish Mitigation Project (Project), a series of separate construction activities at the Federal Columbia River Power System (FCRPS). Under the umbrella of the President's Budget, the Corps has proposed spending $127 million on the Project in fiscal year 1998, ostensibly to meet their treaty and statutory obligations to protect and restore naturally spawning salmon populations in the Columbia River Basin. The tribes support a funding level of $123 million for fiscal year 1998, but with significant differences as to which projects should be funded. The tribes have prioritized spending for fiscal year 1998 as follows: $37.5 million for Snake River and John Day drawdown; $12 million for surface flow bypass measures at Bonneville and John Day Dams; $29 million on necessary adult passage measures (including temperature control); $18 million for stilling basins as a dissolved gas abatement measure; and $26.5 million for fliplips, optimization of turbine efficiencies, other surface flow bypass measures, and spill efficiency monitoring. These actions are geared towards meeting the tribal objectives of achieving 80 percent juvenile fish passage efficiency, 95 percent juvenile survival per project, and a 50 percent reduction in adult mortality by 2001. It is the tribes intention that, consistent with the Memorandum of Agreement (MOA) completed by several Cabinet members last year (with Congressional encouragement and support), a regional consensus should form the basis for funding the Corps Project for fiscal year 1998. Lacking such consensus, Congress should not fund proposed activities that run counter to tribal goals and objectives.

Commission Mission Statement

The Columbia River Inter-Tribal Fish Commission (CRITFC) was formed by resolution of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes for the purpose of coordinating fishery management policy and providing technical expertise essential for the protection of the tribes' treaty-protected fish resources. The CRITFC's primary mission is to provide coordination and technical assistance to the member tribes to ensure that outstanding treaty fishing rights issues are resolved in a way that guarantees the continuation and restoration of our tribal fisheries into perpetuity. The tribes' Wy-Kan-Ish-Mi Wa-Kish-Wit (Spirit of the Salmon), is a framework plan for Columbia Basin salmon restoration that documents threats to fisheries, identifies hypotheses based upon adaptive management principles for addressing these threats, and provides specific recommendations and practices that must be adopted by natural resource managers to meet their treaty obligations and restore the resource. The tribes' plan, which is in many respects similar to plans developed by the Northwest Power Planning Council (NPPC) and the National Marine Fisheries Service (NMFS), calls for significantly increasing the survival of salmon during their juvenile and adult migrations through the basin's hydroelectric system (FCRPS). The tribes' ultimate goal is to restore a sustainable fishery resource for the benefit of all peoples in the Pacific Northwest and Alaska.

Corps Project Budget Proposal Undermines Long Term Goals and Objectives

The Corps' fiscal year 1998 capital construction budget prioritizes projects on a path that runs counter to undertaking critical projects that are necessary to meet recovery goals and performance standards. The Corps' construction program also risks wasted investments by investing in projects that are inconsistent with ecological and scientific principles and will not be functional under drawdowns. Initiation in fiscal year 1998 of several large projects, such as the Bonneville outfall for the screened bypass system, will set the region in the direction of more screen systems at the same time that more and more serious questions continue to arise about these technologies. If these fiscal year 1998 projects are funded, it will be very difficult to reclaim the tribal direction, and the path recommended in the Independent Scientific Group's report ("Return to the River"), and plan for expenditure of the remaining capital construction funds under the MOA.

The capital construction costs of projects under the federal fiscal year 1998 budget and future operation and maintenance appropriations to support these projects will

be borne by the tribes, the Pacific Northwest and Alaska for many years to come, both in terms of increased impacts to the salmon resource and fisheries and in terms of lost opportunities to fund tribally supported projects such as drawdown, spill efficiency improvements, and adult salmon passage measures. Also, the inappropriate commitment of scarce capital will ultimately impact funding available for watershed restoration measures, tribal hatcheries and on-reservation salmon and resident fish enhancement programs. The fiscal year 1998 Corps' capital construction budget (and the remainder of capital construction budgets through the end of the Memorandum of Agreement (MOA)) should ascribe to the following tribal priorities:

—The tribal objective is to meet juvenile passage performance standards of 80 percent fish passage efficiency and 95 percent survival per project by 2001 and to reduce adult salmon delays and interdam mortality by 50 percent by 2001. The Corps plan does not commit to these performance standards.

—The tribal approach calls for about $350 million over the term of the MOA to implement Snake River and John Day drawdown; the Corps approach calls for about $362 million to be allocated to screened bypass systems and transportation.

—The tribal approach emphasizes adult passage, spill efficiency and meeting dissolved gas and temperature water quality standards. The Corps fails to allocate funds to these critical mainstem passage measures.

Capital Construction Priorities: 1997 through 2001

The tribal approach is founded on hydrosystem objectives and measures in the Spirit of the Salmon and is consistent with the ecological and scientific principles expressed in the Independent Scientific Group's Return to the River. The tribal plan prioritizes funds to (1) drawdowns, (2) actions to meet water quality standards, (3) measures to increase spill efficiency and surface bypass at lower Columbia dams, and (4) measures to assure juvenile and adult passage performance standards are met. Conversely, the Corps has prioritized development of more screen bypass systems and transportation, prioritized additional development of bypass systems at the lower Snake River dams and placed little emphasis on adult passage or water quality improvements.

The Commission's member tribes are seriously concerned that the federal approach will, in effect, "gold plate" the lower Snake River dams, resulting in wasted investment and less incentive to implement recommended drawdowns at these projects. The Tribes are also concerned that the Corps approach at the lower Columbia River dams, which focuses almost entirely on more screen bypass development, will preclude development of spill bypass and adult passage improvements that are necessary to reach the tribal plan performance standards and restoration goals by 2001. The Corps has not committed to any performance goals that their capital construction priorities are intended to meet. At stake is the wise use of about $600 million in federal expenditures toward recovery of Columbia River salmon.

The tribal plan calls for major expenditures to realize drawdown of three of the Lower Snake dams to natural river levels by 2001. Other areas of tribal priority include emphasis on dam structures to improve water quality conditions, such as raised stilling basins to control dissolved gas, and significant adult fishway improvements. The tribal plan also calls for emphasis on increasing spill efficiency and turbine efficiency to reduce salmon mortality.

Specific Project Concerns with the Corps fiscal year 1998 Capital Construction Budget

Three major items in that budget are representative of seriously misplaced capital construction priorities. The following describes the three capital construction projects in dispute between the tribes and the Corps.

Bonneville Screen System Outfall Relocation and Screen System Development.—This Corps proposal would commit $28 million or 22 percent of the fiscal year 1998 budget. The total cost of outfall and screen system development at Bonneville is estimated at $150 million over the MOA term or about 25 percent of the total MOA capital budget for the Corps. The CRITFC filed comments to the Corps' environmental assessment on this project, recommending that other alternatives, such as spill efficiency improvements, dissolved gas abatement, and adult passage improvements be considered in a full environmental impact analysis. The Corps has refused to conduct an EIS and has refused to review spill and surface bypass as alternatives to more screen system development, despite evidence that reach survival and smolt-to-adult returns are much greater for juveniles passed in spill at Bonneville than through screen bypass system or turbines (Gilbreath et al. 1993; Ledgerwood et al. 1989; Dawley et al. 1993). In fact, research indicates that juvenile survival to adults

was greater for juveniles that passed through turbines than through the Bonneville screen system (Gilbreath et al. 1993; Ledgerwood et al. 1989; Dawley et al. 1993).

Instead of outfall relocation and further screen system development, the tribal plan would allocate $28 million over this same period (contrast with the $150 million cost of the Corps proposal) for construction of gas abatement structures in the Bonneville tailrace to allow spill passage performance goals to be met and adult passage improvements to reduce adult fallback and delay.

John Day Extended Length Screen Development.—This Corps proposal would commit $10 million of the fiscal year 1998 budget and require another $10 million in capital construction funds in fiscal year 1999 to complete the John Day extended length screen development. These screens have only undergone one year of testing at John Day Dam. Lamprey, which are not only an important food fish for the Tribes but have cultural significance, suffer substantial mortalities as shown in other tests of these screens. Lamprey numbers are dwindling toward extinction in the Columbia Basin. Sockeye descaling and subyearling impingement are also identified problems in tests of these screens. No empirical observations on impacts to anadromous fish have been made on these screens while they were being tested. These screens run counter to the science presented in the Independent Science Group's Return to the River and the tribes' Spirit of the Salmon. Funds allocated to these screens would be wasted under a John Day drawdown, because the screens would be inoperative.

The tribal plan allocates the money proposed for these screens to adult passage improvements at the lower Columbia River dams and development of spill efficiency and surface bypass systems at John Day Dam.

Lower Granite Surface Collector.—This Corps project would waste $14 million of the fiscal year 1998 budget. The Corps is proposing that an additional $14 million be spent on the project in fiscal year 1999. The prototype system performed very poorly in 1996 and tribal biologists do not expect much, if any, improvement in 1997 tests. The proposed total cost of $28 million (subject to increases) would be wasted investments and could interfere with proceeding with Lower Granite natural river drawdown.

The tribal plan allocates the money proposed for this project toward implementation of lower Snake River drawdowns. The tribal plan calls for surface bypass development at lower Columbia River projects that are not being considered for natural river draw downs.

Other Tribal fiscal year 1998 Capital Construction Priorities.—With respect to surface flow bypass measures, the tribal approach calls for focusing about $12 million towards Bonneville and John Day Dams. These two projects have the worst passage conditions of the Corps dams because the current screen systems are inadequate and total dissolved gas levels limit spill. The Corps approach calls for the majority of surface bypass funding, about $14 million, to be spent at Lower Granite Dam. This money will be wasted when the project is drawn down plus the dam already has two bypass systems in place (a screen system and fliplips for spill).

In addition, the tribal approach would dedicate about $29.5 million to necessary adult passage measures including temperature control; the Corps plan only allocates about $2 million for adult passage. In recent discussions of the System Configuration Team, the Corps has admitted that numerous adult passage problems should be addressed, but no funding has been allocated to those identified problems. Instead, the Corps is issuing a report that will call for more studies.

Finally, for gas abatement measures, the tribal approach calls for stilling basin design and preparation for construction at Bonneville and John Day in 1999–2000; the Corps plan calls for general studies leading only to a prototype at Ice Harbor in 2001.

In conclusion, the Corps must recognize that, under the MOA, it committed to "consult * * * [which means] a significant effort to communicate and discuss the relevant issues with Tribes at the policy level in an attempt to reach a common viewpoint with the Tribes." The Corps' development of their fiscal year 1998 capital construction budget occurred without fulfilling this obligation. It is apparent from their proposed budget that the Corps is not interested in making a change in their course, a course of destruction that has already cost the region several salmon stocks and that will cost us hundreds of millions of dollars more without effectively—or efficiently—providing the region any reasonable benefits in our salmon recovery effort. The tribes respectfully ask that you provide the Corps with alternative budget guidance from their proposal before you, restricting the expenditure of any funds until actual consultation has occurred between the tribes and the Corps on these critical issues. Thank you for your careful consideration of our testimony. Please contact us if you have any questions, we can provide additional information at your request.

PREPARED STATEMENT OF KEITH LEAVITT, PORTS DIVISION MANAGER, OREGON ECONOMIC DEVELOPMENT DEPARTMENT

Mr. Chairman and members of the subcommittee, I am Keith Leavitt, Ports Division Manager for the Oregon Economic Development Department. I appreciate the opportunity to testify on behalf of the State of Oregon about the proposed fiscal year 1998 budget for the United States Army Corps of Engineers. My testimony today discusses several aspects of Corps activities, including: our support for the Corps of Engineers Operations and Maintenance activities; the proposed Columbia River Channel Deepening project; and importance to Oregon ports of maintaining the Corps of Engineers Hopper Dredge Fleet

Continued Operation and Maintenance Dredging

Operation and maintenance dredging work on the navigation channels of the Columbia River and Oregon coastal channels and harbors is critical to our state's waterway infrastructure. Maintenance of the navigation channels directly affects our access to regional, national, and international markets. If our waterways are not kept at functional projects depths at all times, we face substantial negative economic impacts—on shippers, manufacturers, producers, and commercial and recreational fishing interests. There is also the potential for safety issues to arise due to shoaling on coastal bars and in channels.

While the Administration appears to have retracted its previous plans to reduce or terminate the Federal role in maintenance dredging of shallow draft ports and harbors, the Corps now advises it will "prioritize" projects and recommend funding levels accordingly. Congress must continue to reject proposals that limit the Federal role in maintenance dredging of the shallow draft ports and harbors which are critical to their local and regional economies.

Columbia River Channel Deepening Study

The Columbia River is the second largest gateway in the world and the nation for grain exports, the largest in the nation for wheat exports, and the second largest export port on the West Coast. In order to maintain the flow of goods on the lower Columbia River (worth $14 billion in 1995), channel depth must be increased to serve the larger ships which now call in Portland and other Columbia River ports. Currently, ships requiring 42 feet or greater draft do call at these ports but not at full operating efficiency because they have to time their sailings only to high tides and/or sail with less than full loads.

The proposed channel deepening project is an important piece to our region's economic future. The project feasibility study formally began on July 1, 1994 and is scheduled for completion in 1999. We believe the study will show that the project has clear economic benefit while meeting high standards for environmental protection. We hope Congress will ensure that adequate funds are provided and that the Corps will have the tools to move this study through the environmental and economic review process as expeditiously as possible. This year's funding request is $724,000.

Corps Hopper Dredge Fleet

Columbia River and Oregon coastal ports rely heavily on the regional placement, responsiveness, and capacity of the Federal hopper dredge fleet. The two Army Corps of Engineers hopper dredges stationed in the Pacific Northwest, the Essayons and the Yaquina, as well as the McFarland out of Philadelphia, serve critical roles beyond their ability to carry out the actual functions of channel and harbor dredging. The public fleet provides emergency response capability which has been critical in such natural disasters as the Mount St. Helens volcanic eruption in 1980 and the floods on the Mississippi in 1993 and 1996. Even without natural disasters, emergency dredging is often needed to restore federal navigation channels to allow commerce to pass. Shoaling can occur rapidly and can impact import/export shipping and commercial fishing activities. Quick response to emergency situations is key to upholding trade commitments and to vessel safety. In addition, the dredge fleet serves an important role in cost containment by providing competition in the contract bidding process. While a significant amount of dredging work is contracted out to the private sector, port officials believe that without the public fleet, dredging costs would escalate due to the lack of private sector competition.

During the last Congress, as a result of the mandates in the Water Resources Development Act of 1996, the hopper dredge Wheeler (out of New Orleans) was put on stand-by status leaving the nation's ports with only three public dredges. In addition, the cubic yard set-aside for private dredges was increased by 1 million cubic yards per year. We urge Congress to hold firm in support of the remaining hopper dredge fleet.

Ports are Critical to U.S. Infrastructure

As members of this subcommittee, you are acutely aware that ports are an integral link in our nation's transportation system. Low cost water transportation is an important ingredient in keeping U.S. products competitive in world markets. Funds to upgrade the nation's transportation network should be spent with an understanding that an inefficient port system can create a bottleneck to moving goods to markets. We must make sure that an efficient transportation system starts with the key intermodal transfer—our nation's ports. We want the cost competitive advantage provided when our waterways and ports operate at the same efficiencies as do our highways, rail and ocean carriage of goods.

Conclusion

On behalf of the Oregon Economic Development Department and Oregon's 23 port districts, I thank you for this opportunity to submit comments on issues that impact us greatly.

PREPARED STATEMENT OF GLENN VANSELOW, EXECUTIVE DIRECTOR, PACIFIC NORTHWEST WATERWAYS ASSOCIATION

Mr. Chairman and members of the Subcommittee: My name is Glenn Vanselow. I am Executive Director of the Pacific Northwest Waterways Association. We appreciate the opportunity to present our views on appropriations issues to the Committee. The PNWA membership includes nearly 130 organizations and individuals in Oregon, Washington, and Idaho. PNWA represents public port authorities on the Pacific Coast, Puget Sound, and Columbia/Snake River System; public utility districts, investor-owned utilities, electric cooperatives and direct service industries; irrigation districts, grain growers and upriver and export elevator companies; major manufacturers in the Pacific Northwest; forest products industry manufacturers and shippers; and tug and barge operators, steamship operators, consulting engineers, and others involved in economic development throughout the Pacific Northwest.

PNWA has a long history of working with the Committee and the U.S. Army Corps of Engineers on projects of regional and national importance, sharing the challenge to maintain and develop our transportation infrastructure. Our members wish to thank the Committee for its support of Pacific Northwest transportation, hydropower and salmon enhancement programs and projects.

SUMMARY OF APPROPRIATIONS REQUEST

I will discuss the following issues in my testimony, including:

Navigation Operations and Maintenance.—We support the President's fiscal year 1998 Budget request for operations and maintenance (O & M) of the federally authorized navigation channels in the Columbia and Snake Rivers, Puget Sound and the Oregon and Washington Coasts, but we oppose the downward trend in the civil works budget. We encourage the Committee to increase funding to maintain the Chetco River navigation project at Brookings, Oregon.

Navigation Feasibility Studies and Construction.—We are opposed to the "full-project funding" proposal for new construction and the downward trend in funding included in the President's fiscal year 1998 Budget request for civil works program. We support full funding for the feasibility study of the lower Columbia River Navigation Channel Deepening, the Blair Waterway Navigation Study at Tacoma and the East Waterway Channel Deepening at Seattle, which is proposed to be carried out during O & M dredging.

Minimum Dredge Fleet.—We support maintenance of all four federal hopper dredges in active, operational status, operated by the Corps. We favor eliminating the set aside for private dredges. We are opposed to the placement of the WHEELER on stand-by status. We encourage the Committee to reduce the operating cost by eliminating plant increment and reducing depreciation charges for defense equipment.

Operations and Maintenance of the Region's Hydropower System, Salmon Recovery and Drawdowns.—We support the President's fiscal year 1998 Budget request for construction on the Bonneville Dam powerhouses and operations and maintenance of the region's hydropower system. We encourage the Committee to deny Administration requests to reprogram 1997 appropriations to study drawdown at John Day, and to deny funding in 1998 for drawdown studies in the Federal Columbia River Power System.

Salmon Recovery Decision Authority and Funding.—First, we support efforts to establish priorities for funding and implementation of fish and wildlife recovery projects in the Columbia River Basin Fish and Wildlife Program. Second, we sup-

port continuation of the $435 million annual "cap" on Bonneville Power Administration expenditures for salmon recovery. Third, we support selected salmon recovery actions such as improved and enhanced smolt transportation, surface collection and other smolt by-pass facilities, habitat restoration and protection, and predator control.

Mitchell Act Hatcheries.—We believe that funding for Mitchell Act fish hatcheries should be contingent upon the marking of all hatchery fish.

Hanford Cleanup.—We support funding for programs at the Hanford site, including clean up and reopening the Fast Flux Test Facility.

FULL TEXT OF APPROPRIATIONS REQUEST

Navigation Operations and Maintenance

We would like to thank the Committee for its previous support of navigation O & M (operations and maintenance) in the region's shallow, deep draft and inland navigation system. We support the President's fiscal year 1998 Budget request, but we oppose the downward trend in the civil works budget. We are also concerned about insufficient funding to maintain the Chetco River channel at the Port of Brookings Harbor, Oregon. We support the Port's request for a funding increase at that project.

Navigation is the least cost, most fuel efficient and least polluting mode of transportation. Navigation is the critical link that keeps the Northwest and the nation competitive in domestic and international trade and supports the commercial and recreational fishing industry. It provides significant numbers of jobs and other economic benefits both within the region and nationally. We support maintaining a strong federal role in planning, construction, operation, maintenance and funding of navigation on the inland waterways, deep draft ports and shallow draft ports. We ask the Committee for full funding for ongoing operations and maintenance (O & M) of the federally authorized navigation channels in the Columbia/Snake river system, the Oregon and Washington coastal ports and Puget Sound. Maximizing O & M is a cost-efficient means of fully utilizing the federal government's investment in channel operations.

We urge the Committee to resist those proposals that would drastically reduce Corps funding for basic services, including the maintenance of shallow and deep draft ports and inland waterways. Some 20 percent of the employment in the Northwest states is directly related to international trade. These navigation projects are among the few federal programs that are analyzed to ensure that economic benefits exceed the costs. Eliminating these programs would not be cost-effective.

Navigation Feasibility Studies and Construction

We wish to thank the Committee for appropriating funds last year for construction of the Coos Bay, Oregon channel deepening project and the breakwater extension at Newport, Oregon. We support the President's Budget request for feasibility studies and new construction. We are opposed to the Administration's "full-project funding" proposal for new construction and the downward trend in funding reflected in the President's fiscal year 1998 Budget request for civil works.

The Columbia River deep draft channel is the lifeblood of the Columbia/Snake River System, which serves shippers from 40 states. To protect future growth and development of the River System, we ask the Committee to continue to fund the federal share of the feasibility study of the lower Columbia River Navigation Channel Deepening. This funding would pay for the federal government's share of the study to investigate improving the existing 40-foot navigation channel by increasing the channel depth to 43 feet.

PNWA also supports funding for the Blair Waterway Navigation Study at Tacoma and the East Waterway Channel Deepening at Seattle, which is proposed to be carried out during O & M dredging.

Minimum Dredge Fleet

We encourage the Committee to maintain all four federal hopper dredges operated by the US Army Corps of Engineers by rejecting plans to place the dredge WHEELER on stand-by status, and by eliminating the set-aside for private dredges. We oppose legislation that places artificial limits on the federal hopper dredges by directing increasing amounts of maintenance dredging to private dredges. Federal hopper dredge costs are artificially higher than necessary because of that set aside. We believe that Congress should reduce or eliminate the set aside to increase the efficiency of the Corps hopper dredges. We also encourage the Committee to find ways to make the Corps dredges less expensive to operate by examining recent increases in depreciation and plant increment payments.

We believe that the presence of the federal dredges keeps bids for dredging work competitive and lower in cost. Private dredge contractors perform all new construction and three quarters of annual O & M dredging nationwide. We are concerned that the low number of private industry bids for work in our region could force dredging costs higher were it not for the availability of the federal dredges.

We support the continued operation of the North Pacific Division-based ESSAYONS and YAQUINA to meet Pacific Coast planned maintenance and emergency dredging needs, as specified in the Water Resources Development Act of 1996. The coastal and river ports of the Pacific Northwest rely heavily on the regional placement, responsiveness and capacity of these dredges. To remain competitive in world markets, Northwest ports and their customers rely on the federal hopper dredges for cost-effective and timely completion of dredging requirements.

Today, the Mississippi River is expecting significant loss of channel depth due to flooding. The Corps of Engineers is reported to have serious problems in acquiring enough federal and private medium and large class hopper dredges to meet peak dredging demands to allow ships to take full advantage of the authorized channels. This is not a localized problem. The US Weather Service is forecasting wetter than normal conditions on top of higher than normal snow pack for most of the US. The Corps of Engineers is warning of high flows and high water in the Pacific Northwest. The prospect for more floods this year is high: one more reason we need to keep all four federal hopper dredges in active, operational status in the Pacific Northwest, the Gulf and the East Coast. Shippers and ports cannot afford to wait several weeks for dredging. Trade commitments and vessel safety are at risk.

There are other ways to cut costs and increase the efficiency of the Corps' hopper dredges. The Corps bills deep-draft navigation projects a "daily rate" when it uses one of its four hopper dredges to perform operations and maintenance (O & M) dredging. Included in this daily rate is everything from fuel and crew salaries to plant increment to replace the equipment in the future and depreciation to pay for the equipment.

Prior to fiscal year 1995, the Corps did not collect plant increment for its hopper dredges. The addition of this fee added over $4 million to the cost of performing O & M dredging of projects with the Corps' hopper dredges.

Prior to fiscal year 1993, the Corps calculated depreciation of its hopper dredges over 40 years. In fiscal year 1994 the Corps changed the calculation to 50 years, reasoning that with lessened use, driven by directives to contract more work with private industry, the federal hopper dredges would last longer. However, beginning in 1995, the Corps changed its depreciation calculations again. Prior to 1995, federal hopper dredge charges to navigation projects were reduced, or "discounted," in the amount proportionate to the cost of the military features added during construction. In 1995 the Corps reduced this discount. Navigation projects are paying for depreciation on defense-related equipment, although their current defense role is not clear. This adds nearly $2 million annually to the cost of using the Corps' hopper dredges.

We believe that nearly $6 million could have been saved if the Corps had not imposed plant increment and increased depreciation charges on its hopper dredges. We encourage the Committee to explore the following questions. Does it make sense to save for new dredges while Congress is placing one federal hopper dredge on standby and reducing the work of the remaining dredges? Has Congress made a decision to replace this equipment? Has the Corps reported to Congress on the defense-related role of the federal hopper dredges? Is the Corps planning to include defense-related criteria in its future reports to Congress on the necessity of maintaining the federal hopper dredges of the Minimum Dredge Fleet? Why is the civil works navigation O & M program, funded by the Harbor Maintenance Trust Fund, paying for defense-related equipment on the federal hopper dredges?

A Corps study of the dredge fleet to help set future policy is expected to be released in July. PNWA will inform the Committee of our comments when that study is released.

Operations and Maintenance of the Region's Hydropower System, Salmon Recovery and Drawdowns

We support the President's fiscal year 1998 Budget request for construction on the Bonneville Dam powerhouses and operations and maintenance of the region's hydropower system. We would like to make the Committee aware of current and future need for rehabilitation of turbines at a number of projects, including The Dalles and Ice Harbor projects.

We encourage the Committee to deny Administration requests to reprogram 1997 appropriations to study drawdown at John Day. We also encourage the Committee to deny funding in 1998 for drawdowns or drawdown studies on the Federal Colum-

bia River Power System. We testified last year that we do not believe there is biological justification for drawdowns. This year, we would like to make the Committee aware that in addition to the biological questions, there are serious economic impacts to the region and the nation. Drawdown would eliminate important authorized purposes on the system, including navigation, hydropower production and irrigated agricultural production. The committee also should be aware that we believe that drawdown would reduce the Bonneville Power Administration's revenue generating capacity and jeopardize BPA's ability to repay its debt to the US treasury. The four lower Snake dams and John Day provide 20 to 25 percent of BPA's total energy production.

As the Committee is aware, in December 1995 the National Research Council (NRC) released its study on salmon recovery efforts. The NRC Committee concluded that the transportation of smolts is the "most biologically and economically effective way to help them get past the dams." They said drawdown, except to river grade, was not proven to benefit the fish. "Dam removal and drawdown to river grade would help, but they are too costly." The NRC Committee project director indicated during briefings that "focusing on the hydro system alone will not solve the problem. The Columbia River is only one piece of the puzzle."

Our reading of the Bevan team recommendations in the NRC report indicate that they continue to discredit drawdowns. This is true of the reservoir survival study results in the Williams/Skalski/Iwomoto studies over the last three years which show reservoir mortality is negligible. We do not see any value in continuing to spend time and money on more drawdown analysis or on drawdown implementation, for example, in the Snake River Environmental Impact Statement which is now underway. There is no scientific justification for the massive flow volumes that were called for last year. Likewise, judicious application of spill may help in some circumstances, but large volumes of spill increase nitrogen supersaturation to lethal levels.

Salmon Recovery Decision Authority and Funding

We support continuation of the Committee's decision of two years ago to impose an annual cap on salmon recovery costs. We are hopeful that the Bonneville cost-cap, even though it has some flexibility, will force a prioritization of recovery measures, and implementation of cost effective measures. The cost cap means that the region and the country can no longer afford to add more and more requirements without scientific justification. We support the $435 million annual "cap" on Bonneville Power Administration expenditures for salmon recovery.

We also support the 1996 amendment to the Northwest Power Act, approved during consideration of the fiscal year 1997 Energy and Water Appropriations bill, which establishes a panel of scientists to establish priorities for funding and implementation of fish and wildlife recovery projects in the Columbia River Basin Fish and Wildlife Program. We hope that this, with the Independent Economic Analysis Board, will result in programs that will provide maximum biological benefits to listed salmon stocks and are more cost-effective than the current salmon recovery programs.

While we support efforts to improve the processes governing the region's fish and wildlife programs, we are concerned that some proposals will decrease, not increase accountability. One reason for our concern is that some discussions about "regional control" seem to involve only the federal, state and tribal fish agencies who have a vested interest in higher, not lower, fish and wildlife expenditures. We believe that those who are paying for these programs and those affected by the programs should be part of the decision process.

We also believe it is appropriate to consider a federal cost share for ESA recovery programs. And by that, we mean federally appropriated funds. This makes sense to us for two reasons. The first is that the region is already paying more than any other region in the world for endangered species protection.

Secondly, there are no checks and balances on the federal agencies or the Power Planning Council. They simply demand more each year. Without biological monitoring and without scientific justification, the region's costs have increased at an explosive rate. One way to ensure that the federal agencies employ biologically sound and cost-effective measures is to make them responsible for a significant portion of the cost. Federal government participation in paying for recovery measures would bring far greater accountability to the agencies. The benefits would increase and the costs would go down. The Administration and Congress would have a far greater opportunity to make sure that the agencies provide maximum benefit at the lowest possible cost.

We encourage providing the region with significant decision making authority while including a mechanism for federal cost share.

Mitchell Act Hatcheries.—We believe that Mitchell Act hatchery funding should be contingent upon the marking of all hatchery fish.

Hanford Cleanup.—We ask the Committee to continue to adequately fund the Department of Energy cleanup of 45 years of accumulated defense waste currently stored at the Hanford site. We recognize that defense waste cleanup is a long-term project that will be most cost effective and most rigorously pursued if Hanford is a viable, operating site. Therefore, we strongly urge the Committee to support a complete, ongoing Hanford scientifically and technologically based research and operations program in order to ensure long-term funding for waste cleanup. PNWA also supports a complete and ongoing scientifically and technologically based research and operations program, including the restart of the Fast Flux Test Facility for the joint missions of national defense and medical research and isotope production to meet the demands for more effective cancer treatments.

Conclusion

On behalf of nearly 130 members from throughout the Pacific Northwest, we thank the Committee for giving us this opportunity to review a number of issues important to the environmental and economic prosperity of our region.

PREPARED STATEMENT OF NATHANIEL BINGHAM, HABITAT DIRECTOR, PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS'

WINTER-RUN CHINOOK SALMON CAPTIVE BROODSTOCK PROGRAM

The Captive broodstock program, which we are requesting continuation funding for, arose from the shared concern about the possible extinction of the winter-run of a wide range of stakeholders and agencies. In 1991 the concerned parties formed the Winter-Run Captive Broodstock Committee which formulated and began the program. Utilizing funding provided by Congress (attached budget summary) the committee began the program in 1992. Total annual program costs have averaged $1,250,000/par Rearing facilities at Bodega Marine Laboratory of the University of California and Steinhart Aquarium of The California Academy of Sciences were constructed around juvenile salmon provided from Coleman National Fish Hatchery. Presently the combined facilities of both institutions are holding four year classes of salmon in captivity. Offspring from the captive adult salmon have been successfully released in the Sacramento River.

The captive broodstock program has required and has provided substantial scientific and technical advances in the husbandry, pathology, and genetics of chinook salmon.

In order to conserve the unique genetics of the winter-run, the program has developed a new microsatellite DNA marker technology to determine the parentage and run identity of the captive salmon. These markers are now being further developed and are being used to identify the stock origin of salmon entrained by the State water export pumps in the Sacramento San Joaquin Delta. Thus these markers will have uses in salmon biology far beyond their application to the brood stock program.

This year we are requesting $250,000 from the committee in the Bureau of Reclamation funds. This is half of the $500,000 that we were provided in fiscal year 1997. We have requested that $259,000 be provided for our molecular genetics work by the Bureau of Reclamation Central Valley Project Restoration Fund. The U.S. Fish and Wildlife Service, which administers the water user fee generated fund, has not yet made a decision whether to grant our request. If they do not, then we are requesting $500,000 from the committee.

COMMUNITY BASED COHO SALMON HABITAT RESTORATION PROJECTS

Coho Salmon have recently been listed as threatened in Central California under the Federal Endangered Species Act. It is anticipated that the National Marine Fisheries Service will soon also list Coho in the "Transboundary Evolutionarily Significant Unit" in Northern California and Southern Oregon. This listing is anticipated to impact many users of timber and water resources in California and Oregon. Congress has recently acted to create a new restoration funding source for the Klamath River in its upper basin in Oregon. We are requesting that the committee provide one million additional dollars to The Klamath River Basin Restoration Act program in California.

WINTER-RUN CHINOOK SALMON CAPTIVE BROODSTOCK PROGRAM

[Summary of proposed 10-year budget]

State fiscal year (7/1–6/30) Federal fiscal year (10/1–9/30)	1992–93 1993	1993–94 1994	1994–95 1995	1995–96 1996	1996–97 1997	1997–98 1998	1998–99 1999	1999–2000 2000	2000–01 2001	2001–02 2002	Total
BUDGET REQUIREMENTS											
Steinhart Aquarium	222,600	89,400	173,000	114,000	98,400	116,000	85,400	88,600	93,000	96,600	1,177,000
Bodega Marine Lab	489,700	607,200	565,100	513,400	547,600	697,000	655,400	700,600	712,000	750,000	6,238,000
Genetic Management/Molecular Genetic Analysis	225,000	219,600	230,500	244,900	235,100	259,000	248,000	260,400	273,700	287,600	2,483,800
Genetic Management Subcommittee	41,000	42,000	43,000	24,000	25,000	26,000	26,000	27,000	28,000	29,000	311,000
Coleman National Fish Hatchery Operations and Maintenance	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000
Total budget requirements	1,228,300	1,208,200	1,261,600	1,146,300	1,156,100	1,348,000	1,264,800	1,326,600	1,356,700	1,413,200	12,709,800
FUNDS ACQUIRED AND/OR ADDITIONAL FUNDS NEEDED											
Funds acquired:											
U.S. Dept. of Interior:											
Fish and Wildlife Service	250,000	250,000	250,000	250,000	250,000	250,000	.....	.....	.....	.....	1,500,000
Bureau of Reclamation	300,000	300,000	125,000	300,000	500,000	[2] 241,000	.....	.....	.....	.....	1,525,000
Restoration Fund (Molecular Genetic)	.....	.....	.....	.....	.....	259,000	.....	.....	.....	.....	.....
U.S. Dept. of Commerce: NOAA	500,000	237,500	237,500	.....	.....	[2] 250,000	.....	.....	.....	.....	975,000
State of California:											
Department of Fish and Game	241,300	200,000	.....	.....	.....	.....	.....	.....	.....	.....	441,300
Salmon Stamp	25,000	10,000	10,000	15,000	25,000	25,000	.....	.....	.....	.....	85,000
Department of Water Resources	75,500	176,300	34,200	125,000	[2] 100,000	[2] 123,000	.....	.....	.....	.....	511,000
DWR via NFWF	.....	14,300	200,000	.....	[2] 100,000	.....	.....	.....	.....	.....	314,300
Nongovernmental Funds:											
National Fish and Wildlife Foundation	.....	7,200	121,200	.....	.....	.....	.....	.....	.....	.....	128,400
Category III	.....	.....	.....	300,000	[2] 74,000	200,000	.....	.....	.....	.....	.....
Subtotal—Funds Acquired	[1] 1,391,800	[1] 1,195,300	[1] 977,900	[1] 990,000	[2] 1,049,000	1,348,000	.....	.....	.....	.....	5,854,000
Additional funds needed	[1] + 163,500	12,900	283,700	156,300	107,100	.....	1,264,800	1,326,600	1,356,700	1,413,200	6,855,800

[1] Due to administrative delays, funds acquired may not be encumbered and spent in the same fiscal year.
[2] Preliminary amounts, not yet approved.

PREPARED STATEMENT OF JOHN FRATT, EXECUTIVE DIRECTOR, PORT OF KALAMA, WA

Mr. Chairman and members of the Subcommittee: My name is John Fratt, and I am Executive Director of the Port of Kalama in Kalama, Washington. My remarks today also represent six other lower Columbia River ports in Oregon and Washington because I also serve as President of the Interstate Columbia River Improvement Project (ICRIP), the local sponsors of the plan to deepen the Columbia River.

Your committee has shown strong support for our efforts to improve the Columbia River transportation system over many decades. Let me start by voicing our sincere appreciation for the support your subcommittee has shown in the past.

I am before you today as the representative of the Columbia River Navigation Channel Deepening Project: the seven deep-draft ports located on the main navigation channel of the lower Columbia River. Besides the Port of Portland, these ports include, in Oregon: the Port of Astoria and the Port of St. Helens; and in Washington: the Port of Kalama, the Port of Longview, the Port of Vancouver, and the Port of Woodland. In 1995, more than 2,100 ocean-going ships carrying 38 million tons of cargo valued at more than $14 billion called at the private and public facilities located at these ports. This continues a 20-year trend that has seen cargo volumes double on the lower Columbia River.

Request Summary

On behalf of the seven ports, I am seeking full funding of the $724,000 for fiscal year 1998 for the feasibility study of the channel deepening project on the lower Columbia River. This amount will be matched by local sponsor ports for the next phase of the feasibility study.

Corps of Engineers Operations and Maintenance Budget.—The condition of the Columbia River deep-draft navigation channel has deteriorated due to changes in the channel maintenance program and dredge disposal practices of the Corps. These changes are due to a combination of factors, including budget constraints and restrictions on the timing and placement of dredged materials.

Our request is for a more aggressive advance maintenance program to assure that the authorized depth in the channel is available at all times. A more proactive policy is needed to ensure our ability to meet shipping needs and maritime safety requirements. We are asking the Corps to manage the Columbia River dredging program so that the 40-foot authorized depth is never encroached upon. Your support for an increased Operations and Maintenance (O&M) allocation for the Corps of Engineers will be extremely helpful in this undertaking. This would be an important investment for U.S. competitiveness and jobs.

Supplemental Appropriation Request for Flood-Related Dredging.—We understand a request for $850,000 in additional money for the Corps to cope with flood-related shoaling is under review within the Administration. We want to underscore the need for this additional funding to cope with added work necessary to deal with record water flows this past year. The Columbia River system has experienced back-to-back years with record flooding. For the navigation system, this has meant a tremendous influx of material from rivers and streams and very real problems with shoaling. To assure navigation safety and timely movement of water-borne goods, I strongly encourage Congress to approve the supplemental appropriations request forwarded to you by the Administration.

Corps of Engineers Hopper Dredge Fleet.—My fourth request today is for continued Congressional support for the Corps of Engineers Hopper Dredge fleet. These vessels, which provide timely and effective service on each of our coast lines, are of critical value to the navigation needs of the Columbia River and coastal ports in our region.

In my view, unnecessary and artificial limits on the operation of the federal fleet have hampered the effectiveness of these four dredges and have driven operating costs higher. In addition to requesting funding to assure full operation of the dredges, I would encourage Congress to review the restriction placed on Corps fleet operations.

Funding for the Feasibility Study on the Lower Columbia River

Let me elaborate on the study of the channel project in the lower Columbia River.

There is plenty of discussion these days about improvements to our transportation infrastructure. I can think of no better example—or no better investment—than this improvement to the Columbia River deep-draft waterway.

Nation Needs Columbia River Exports

The ports I am representing here today, the communities they serve, and the economy of the Pacific Northwest rely on the Columbia River system as our main connection to world markets. A navigable river system is the most efficient means

for products from our region and beyond to remain competitive. Economics of scale already are bringing larger, deeper-draft vessels into the Columbia River. All indications are that this trend will continue.

International trade within our region is expected to expand in the next 20 years by two-and-one-half times. International trade supports one-fifth of Washington's work force, an estimated 600,000 jobs. If this region is to realize fully the benefits of future growth in international trade, an efficient water transportation system will remain a key competitive ingredient.

This fact is important from a national perspective as well. Columbia River ports send many more goods overseas than they unload as imports. And products are shipped from many western states, including many outside our immediate region.

The Port of Kalama is one of the nation's leading grain export ports, handling 10.3 million tons of cargo in 1995. And our impacts are felt throughout the nation. As one example, grain production from the states of Nebraska, North Dakota, South Dakota, Minnesota, Montana, Idaho and Oregon cross our docks on the way to international markets.

Given the nation's continuing trade deficit, our contribution to exports is a very positive factor in efforts to balance our trade equation. Also significant is the amount of U.S. Customs fee revenue generated by Columbia River ports each year.

The trend in increasing ship size and cargo capacity in the grain and bulk fields is very clear. Taken together, these shipping trends create a very favorable economic picture for the channel deepening we are proposing. Implicit in this situation, too, is a threat to our transportation role, if we are not able to move ahead with the navigation improvement work in a timely fashion.

We know of only one way to meet this growing demand for transportation capability—to keep up with export opportunities. That is to build and maintain a navigation channel that can handle the larger vessels in use today and on order for the future. We began planning this navigation improvement project with increasing vessel size in mind. Frankly, that reality has caught up with us already. Larger and larger vessels calling at the sponsor ports remind us regularly of the need for this project. Today, many of these vessels are leaving our docks "light loaded" at less than full capacity due to the restricted draft in the channel.

Maximum Capacity Through Innovation

The 40-foot channel and a federally-authorized 55-foot channel at the mouth of the Columbia have been remarkably successful projects. Built on budget, they have served deep-draft vessels safely and with less maintenance dredging than predicted in part because of an innovation called LOADMAX. Initiated by the lower Columbia River ports and completed with the cooperation of the Corps and the National Weather Service of NOAA, LOADMAX has made the transportation system more effective.

LOADMAX allows ships to take advantage of deeper water due to tidal differences on the Columbia. At the heart is a computer system that monitors water levels at seven points along the Columbia. Using this technology, we can predict up to six days in advance how vessels can ride the high tide window all the way from Astoria at the mouth to Portland. Ships leaving Portland on their way to the ocean use the same system in reverse. In effect, ships gain about 3 feet of draft by timing their movements to coincide with tidal fluctuations in the river.

Even with the innovative LOADMAX system, we are beyond our capacity. A deeper channel is needed for the Columbia system to remain competitive.

A 100-Year Partnership

Let me now offer some background on the Columbia River's navigation system and its 100-year partnership between the federal government and local interests.

In 1890, the Portland District U.S. Army Corps of Engineers completed a study defining the work needed to provide a 25-foot channel from Astoria to Portland. A year later, in 1891, the Port of Portland was created by the Oregon legislature, for the sole purpose of dredging the 25-foot channel. Completion of the project came in 1893.

Over the years, this partnership has seen successful authorization and construction of two more channel improvements: deepening to 35 feet, completed in 1950; and construction of the existing 40-foot channel, dedicated in 1973.

Benefits of an Integrated System

The main lower Columbia River navigation channel is one part of a total system. The main channel serves as the system's gateway, accommodating the largest, ocean-going vessels. But those of us on the lower river never forget the importance of the lock and dam system on the river's upper reaches. That this system exists,

and is being improved today, is testament to the wisdom and foresight of this Committee and Congress.

In all, eight locks and dams extend the upriver barge system 465 miles inland to Lewiston, Idaho. This system was completed in 1975. By 1980, cargo volume projections for the year 2000 had already been exceeded.

One purpose of these dams and attendant locks is to serve navigation, allowing tugs and barges to carry products up and down the river. Other benefits include providing flood control, water for irrigation, and generating electrical power for the region. In return, crops—often irrigated with water from these same federal reservoirs—and some manufactured goods are moved by barge to lower Columbia River ports where they are loaded on ocean-going vessels and shipped to world markets.

This integrated system binds Lewiston, Idaho, to Kalama, Washington, and Astoria, Oregon. It ties the farmers and ranchers in eastern Oregon and Washington, or in Idaho and Montana, to the longshoremen and shipping clerks at our lower Columbia River ports.

This Committee demonstrated its recognition of this relationship with recent funding for the Bonneville Lock. The lock removed a bottleneck in river navigation and allows more efficient use of the entire lock system to move a wide variety goods.

Hopper Dredges

Adequate dredging of navigational waterways is an essential part of the transportation capacity provided by the Port of Portland and other Columbia River and coastal ports. Some in Congress are attempting to reduce the number of Corps dredges for this essential work. This would be the wrong move, because reductions in the Corps hopper dredge fleet would not be offset by increases in private dredging capacity, at least in the Pacific Northwest. As a consequence, restricting the Corps fleet likely would lead to higher costs and less service, and case history indicates this is what happens.

A similar concern arises when we review the capacity of the private sector to respond to emergency dredging needs. By emergency, we are not referring solely to something on the magnitude of Mount St. Helens. We also must contend with shoaling or sand wave problems in the Columbia River. Threats from these navigation difficulties could curtail or stop navigation in the channel if ignored. These problems do not always require a large amount of work; they do require very quick response. If Corps dredges serving this region were ever removed, our ability to respond promptly and effectively to these challenges would be greatly diminished. The result: delayed cargo and lost export opportunities.

We agree with the policy of maintaining a Minimum Dredge Fleet of hopper dredges to meet navigation needs. We also believe that this fleet should be operated as efficiently as possible. The set-aside for industry hopper dredges makes Corps hopper dredge cost artificially high. We believe that Congress should reduce or eliminate the set-aside to increase the efficiency of the Corps hopper dredges.

Cost is an important consideration for a variety of reasons. Funding for the Corps O&M budget has remained flat in recent years. At the same time, the cost of completing this dredging work is higher due to new regulations and challenges related to the environment. The result: less money for actual O&M work. On behalf of all ports, we urge Congress to provide sufficient O&M dredging funds to meet the needs of the customers.

Conclusion

In conclusion, Mr. Chairman, we believe the existing Columbia River navigation channel represents a remarkable success story in terms of partnerships—federal, state, and local governments—and, more importantly, in terms of regional and national trade development. Now is the time to start the next chapter in that success story.

PREPARED STATEMENT OF PETER WILLIAMS, GENERAL MANAGER, PORT OF ST. HELENS, OR

Mr. Chairman and members of the Subcommittee: I am Peter Williamson, General Manager of the Port of St. Helens in St. Helens, Oregon, and I am pleased to present my views on the fiscal year 1997 budget for the U.S. Army Corps of Engineers.

From the earliest days of the nation, ports have had the primary responsibility for developing, operating, and financing marine facilities and docks. Today, this marine infrastructure is central to our national and local economies and the linchpin for efficient transportation of goods.

Ports, whether large, or small ports like mine, are the economic engines that generate and support local economic development by providing transportation services, stimulating business activity, and promoting investment and job creation. Ports also must generate revenue in order to be self-sufficient, a responsibility that has become increasingly challenging in recent years.

While local ports attend to the business of port terminal and industry development, we rely on the Corps of Engineers for maintenance of the navigation system and necessary expansion.

FEASIBILITY STUDY FOR THE COLUMBIA RIVER CHANNEL DEEPENING PROJECT

We appreciate this committee's support to date for the Corps of Engineers' study of improvements to the Columbia River deep-draft channel. This project is our region's highest marine priority, and we are requesting full funding from the committee for the feasibility study in fiscal year 1998, the $724,000 requested in the President's budget. As you know, the local sponsor ports provide an equal amount for a 50–50 match.

Greater effort to increase the capacity of this waterway is warranted in light of the preliminary economic analysis completed by the Corps to date. As another indicator of the economic and transportation vitality of our system, we have only to look at the size and volume of shipping traffic in the channel.

In fact, the marketplace demands that we act to increase the capacity of the Columbia River system. We are seeing the evidence in many ways:

—*Increasing Vessel Size*.—In 1981, two vessels with a draft exceeding 39 feet called at Portland. In 1995, that number approached 250. And more larger ships are being designed and built each year.

—*Expanding Trade Volume*.—The Columbia River system is the nation's largest wheat exporting port and the second largest grain port system in the world. We are also home to an innovative container-on-barge system that brings cargo downstream from Lewiston, Idaho, 458 miles inland from the Pacific Ocean.

—*Cost-Effective, Timely Transportation*.—Our customers and the marketplace demand a totally integrated, transportation logistics system. Today, ports in our region provide that competitive advantage to a number of U.S. export firms. Expansion of the Columbia River channel is a key to assuring that same level of service in the future.

—*Integrated System*.—On the Columbia/Snake river system, we connect barge, rail, and trucking with the deep-draft system. Connecting these modes creates a transportation network that works efficiently and effectively for manufacturers and producers throughout our region and around the country.

Mr. Chairman and members of the Subcommittee, I appreciate the opportunity to share the views of the Port of St. Helens on this critically important water resource project. Our nation supports a world-class transportation system, and we pledge our assistance in moving ahead to keep it that way.

Thank you.

PREPARED STATEMENT OF MIKE THORNE, EXECUTIVE DIRECTOR, PORT OF PORTLAND, OR

Mr. Chairman and members of the Subcommittee: My name is Mike Thorne, Executive Director of the Port of Portland. Ports on the lower Columbia River are thriving seaports with extensive bulk, breakbulk, auto, and container businesses. We are the third largest export gateway on the West Coast and the foremost wheat exporter, handling more than 39 percent of all exported U.S. wheat in 1995. The Port of Portland ranks third nationally as an import and export facility for automobiles.

As members of this committee appreciate, all of this activity depends on the policies and actions of the U.S. Army Corps of Engineers (the Corps). A high priority for our region is the plan to deepen the Columbia River deep-draft channel from 40 feet to 43 feet. This is the top priority for the Port of Portland's marine activities. My testimony today will cover the following points:

—Progress on the feasibility study for the Columbia River channel deepening projects and the need for full funding for the study in the fiscal year 1997 budget.

—Strong support for the Corps hopper dredge fleet.

—Strong support for the Corps Operation and Maintenance (O&M).

Let me begin with a "thank you." This committee has shown consistent support for the project to deepen the Columbia River navigation channel and the seven local ports sincerely appreciate your help.

COLUMBIA RIVER CHANNEL DEEPENING PROJECT

As Congress focuses on deficit reduction and economic revitalization and growth, we should not lose sight of the importance of a healthy and efficient transportation system. Ports, as key links in the transportation system, serve as economic engines that create jobs, stimulate private business, promote growth and competition, and strengthen the economy. Investments in seaports, through federal and local user-fee funded development programs, return dividends to producers, shippers, and the public. As you know, ports must perform these services efficiently and with as little impact on the environment as possible. This responsibility has become increasingly challenging in recent years.

Our top priority is to assure that this important transportation and trade center can continue to provide the nation's producers with cost-effective access to the rapidly growing Pacific Rim markets. To do so, the 100 miles of river channel between our terminals and the Pacific Ocean need to be deepened and maintained at the proposed 43-foot level. Thus, we are requesting full funding for the Corps capability in this year's bill, $724,000 in the President's budget for fiscal year 1998 to provide continued funding for the feasibility study process.

At the current channel depth of 40 feet, the Columbia River channel depth is adequate to handle most the ships calling on the river. Yet, larger ships with deeper drafts have already tested the existing channel. Shipping lines have found the depth inadequate, so they have replaced the larger ships with intermediate size vessels for now.

Ships with drafts greater than 38 feet calling at Portland have increased from two per year in 1981 to nearly 250 in 1995, the most recent year with complete statistics. All major west Coast container carriers are building "post-Panamax" vessels with drafts that exceed our 40-foot channel.

Mr. Chairman, completing our project is a national transportation and competitiveness issue. Ports on the lower Columbia River are transshipment centers for export cargo moving on the inland waterway, rail and highway systems. Yet our region's ability to make sure the deep-draft channel functions well with the rest of the system is minimal. These critical miles, from our docks to open water, are proving to be the most difficult miles to improve. Channel improvements are more costly and time consuming to complete, based on the reports we receive from other projects around the country. Even maintenance of existing approved channel depths has been difficult in many cases.

Our appeal today for your assistance is based on regional and national interests. For producers and shippers throughout the Pacific Northwest and around the country, the Columbia River system is an enormous asset. The system faces unprecedented challenges; your leadership is central to meeting those challenges.

In the interest of time, we will not enumerate all of those challenges here today. But I would like to focus on two briefly, as they relate to the need to deepen the channel in the Columbia River. First is the overall growth in commerce on the river system. At Portland, that total cargo base is made up of grains, mineral bulk commodities, breakbulk, containers, automobiles, and other cargo operations.

Led by large volumes of bulk cargo and steady growth in container volumes, the Columbia River system is handling more cargo year after year. These statistics are important from a national perspective because these cargoes come from producers around the nation. Container cargoes here originate in 40 states. Wheat shipments originate in the Dakotas, Nebraska, Montana, Wyoming, Idaho, and Kansas, plus Oregon and Washington. Corn handled at Kalama, Washington, is produced on farms in Iowa, Nebraska, Minnesota, and Texas.

In the auto shipment business, import cars are distributed to 40 states from Portland. And exports, autos built in the U.S. for shipment to countries throughout the Pacific Rim, make up an increasingly significant segment of the business. These export cars mean jobs in plants in Kentucky and Ohio. In summary, you can see our ports serve as the gateway for products from around the country.

This leads to challenge number two. To handle this growth in cargo, Portland and other lower Columbia River ports are being served by larger ships with greater capacity and deeper draft. As these ships continue to call more frequently, the sharp increase in deeper drafts is pushing the need for improvements to the deep-draft channel in the Columbia. The Port of Portland, in its management of the transportation system with partner ports on the lower river, can manage most of these changes very effectively. With our own resources, we are adding crane capacity, expanding our rail systems, improving truck capacity and flow, and acquiring new facilities for further expansion.

One area where we seek this committee's leadership is navigation improvements themselves, the piece of the transportation picture that historically has been a fed-

eral responsibility. Federal support for navigation, the heart of the Corps' mission, is central to achievement of the nation's important economic and international trade goals. We are among our region's most vocal advocates for national policies that will enable the Corps to carry out its mission decisively and economically.

HOPPER DREDGE FLEET: BENEFITS TO MANY REGIONS

How well we look after and plan for the smooth movement of goods and freight into and out of this nation will determine our nation's job growth, our quality of life, and our country's competitive position in the world. The Corps hopper dredges are central to the water transportation system. Benefits from the work accomplished by these dredges are felt well beyond our region. Goods originating from the East, the Midwest, the states bordering Canada, and the entire Pacific Northwest benefit from timely navigation assistance from the Corps dredge fleet. Today, the Port of Portland, other Columbia River ports, and the coastal ports of the Pacific Northwest work as export gateways for the nation. By their focus on exports, these ports provide a very positive contribution to our balance of trade. Strategic investments to assure effective navigation help our customers around the country remain competitive and thrive in a tough global marketplace.

The Corps hopper dredge fleet is essential to our ability to compete. These dredges, in our region the YAQUINA and the ESSAYONS, were built specifically for the work they do. They do this job well. They operate in rough conditions along the Oregon and Washington coasts. Their mobility has them at the scene of an emergency quickly, a crucial feature in our region where the presence of the private dredge fleet is limited. A review of past bidding for Corps work shows the limited number of bids received.

Beyond the dredging work, the Corps fleet provides another important, though less visible, service to the nation's taxpayers. Their presence means more competitive bidding. On the private side, there are relatively few dredging companies with hopper dredge capacity. In the Pacific Northwest, this translates into few bids and less competition for the work. The result can be higher bids and higher cost for the dredging work completed. Having the Corps fleet provides a competitive counterbalance in the market. If this competitive element of the Corps fleet were lost, we believe the costs for dredging will rise for ports and taxpayers alike.

As you know, last year Congress increased the amount of work set aside for the private sector. This means taking the work out of the allotment normally handled by the Corps minimum fleet. Before taking this step again, Congress should review the experience of this set-aside, with these issues in mind: determine how many bids there were on each contract; review these bids against the government estimate; ask whether there were cost overruns or project delays; and finally, be sure to examine carefully the capacities of the private sector to respond swiftly. I urge Congress to look at these questions before making further major changes in the operation of the hopper dredge fleet.

OPERATIONS AND MAINTENANCE (O&M)—THE CORPS OF ENGINEERS

As this year's president of the American Association of Port Authorities (MPA), I am aware that the Corps is not always able to assure the authorized depths in our nation's deep-draft channels. What this means is that shipping lines cannot always count on the channel depths authorized by Congress.

At my own port, the condition of the Columbia River channel shoals to less than 40 feet in some areas. I believe this problem is due to a number of factors, chief among them being budget constraints and restrictions on how actual dredging work is completed.

The result: a less than optimal transportation system. My request is for a more aggressive advance maintenance dredging program nationally so that our deep-draft channels are maintained at authorized depths at all times. Maritime safety needs and shipping requirements could be met if the Corps is directed to take a proactive approach in its maintenance dredging.

I encourage your subcommittee to make the budget resources available to the Corps for improved advance maintenance dredging. Speaking for my region and others, I know this would be an enhancement of U.S. competitiveness in world markets. Keeping our waterways operating at full depth means our gateways to international trade can operate at full capacity.

CONCLUSION

Let me thank you again for your subcommittee's support for navigation needs over many years. You have been leaders in enhancing our ability to move goods and

freight in a cost-effective and timely manner. Your assistance has proved critical in the past and it will be all the more essential in the future.

I would be happy to respond to any questions.

PREPARED STATEMENT OF BYRON HANKE, EXECUTIVE DIRECTOR, PORT OF VANCOUVER, WA

Mr. Chairman and members of the Subcommittee: I am Byron Hanke, Executive Director of the Port of Vancouver, Washington. The lower Columbia River ports, the world's second largest grain export gateway and the nation's foremost wheat exporter, handle nearly 40 percent of all exported U.S. wheat. As a net export shipping system, these Pacific Northwest ports are positive contributors to our nation's trade picture.

Of the 5.6 million tons of cargo handled each year by the Port of Vancouver, 75 percent is export grain. Our annual cargo value is $1 billion. More than 3,000 jobs are directly dependent on the port, providing a local payroll impact of $72 million. Job impacts are much greater when you consider indirect impacts in our community and the areas our transportation system serves.

In this statement, I want to cover two points briefly:

1. Our progress on the Columbia River Channel Deepening Project and the need for full funding requested for the project in the fiscal year 1998 budget. The budget request is $724,000, an amount local ports will match.

2. Our support for the Corps of Engineers hopper dredge fleet.

COLUMBIA RIVER CHANNEL DEEPENING PROJECT

First, I sincerely appreciate this subcommittee's assistance in recent Energy and Water bills. Following your Congressional directives several years ago, the Corps has reduced the estimated cost of the study from nearly $10 million to $6.1 million. That represented a significant cost savings to all taxpayers and the local sponsor ports. I know the six other ports on the lower Columbia River join me in formally acknowledging the very real service performed by this subcommittee and its staff.

Your actions started the study in the right direction, and we have made good progress. Deadline for completion of the feasibility study is November 1999, and we are working hard to complete it on time.

The current channel depth in the Columbia River is 40 feet and we see convincing evidence that a deeper channel at 43 feet is essential to our ability to remain competitive in world markets.

The number of ships with drafts greater than 38 feet calling in the Columbia River has increased from two per year to nearly 250 in 1995. I have attached a chart summarizing the increase in the number of calls by deeper-draft vessels.

I can tell you from my own experience that shipowners pay very close attention to the channel depth in the Columbia. And, we have had new deeper-draft design ships rotated out of calls in the Columbia River due to concerns over channel depth.

Our top priority is to assure that this important transportation and trade center can continue to provide the nation's producers with cost-effective access to the rapidly growing Pacific Rim markets. Thus, we are requesting full funding for the Corps budget request in fiscal year 1998, the $724,000 included in the President's budget, to provide the initial funding for the feasibility study process.

HOPPER DREDGE FLEET: BENEFITS TO MANY REGIONS

As I mentioned earlier, our jobs, our quality of life, and our competitive position in the world depend on how well we look after and plan for the smooth movement of goods and freight into and out of this nation. U.S. Army Corps of Engineers' hopper dredges play a central role in this transportation system. And, Mr. Chairman, the benefits from the work accomplished by these dredges are felt well beyond our region. Goods originating from the East, the Midwest, the states bordering Canada, and the entire Pacific Northwest benefit from timely navigation assistance from the Corps' dredge fleet.

The Corps' hopper dredge fleet is an essential asset in this process. These dredges, particularly the YAQUINA and the ESSAYONS, were built specifically for the work they do. They can operate in rough conditions along the California, Oregon, Washington, and Alaska coasts. Their mobility means they can reach the scene of an emergency quickly.

Beyond the dredging work, this fleet provides another important, though less visible, service by keeping an element of competitiveness in dredging bids. On the private side, there are relatively few dredging companies with hopper dredge capacity.

In the Pacific Northwest, this translates into few bids and less competition for the work. If this competitive element of the Corps fleet were lost, we believe the costs for dredging will rise for ports and taxpayers alike.

As you know, Congress has set aside a specific amount of work for the private sector over the last several years. This has been accomplished by taking the work out of the allotment normally handled by the Corps minimum fleet. I urge Congress to look carefully at this practice before making further major changes in the operation of the hopper dredge fleet. We believe the reduced capacity of the Corps fleet hurts navigation safety and effectiveness around the country.

CONCLUSION

Let me thank you again for your subcommittee's support for navigation needs over many years. You have been leaders in enhancing our ability to move goods and freight in a cost-effective and timely manner. This has proved critical in the past and it will be all the more essential in the future.

Thank you.

PREPARED STATEMENT OF RUSS CRABTREE, PORT MANAGER, PORT OF BROOKINGS HARBOR, OR

On behalf of the Port of Brookings Harbor, Oregon, I would like to request consideration of one funding request and the acknowledgement of priority status for a harbor-of-refuge improvement project for fiscal year 1998: (1) increase the U.S. Army Corps of Engineers, Portland District annual operation appropriation and earmark $500,000 to perform urgently needed maintenance dredging of the Chetco River channel; and (2) recognize a project to replace moorage docks in Boat Basin I and renovate moorage docks in Boat Basin II at the Port oaf Brookings Harbor as having national importance for the safety and welfare of mariners. This testimony addresses the need for both of these requests.

Background on the Port of Brookings Harbor

The Port of Brookings Harbor, located in Curry County, Oregon at the mouth of the Chetco River, is one of the most important job creators on Oregon's South Coast. There are 541 jobs dependent upon Port activity in the community and there are another 423 associated or related to Port activities. This represents about 16 percent of the total economy in the community and about 33 percent of all net earnings. In 1995, there were 8,181 fishing trips that originated from port facilities resulting in bar crossings. A Corps of Engineers economic analysis study showed there was $19 benefit to $1 cost in regional economic development benefits and $3.4 to $1 in national economic development benefits for maintaining the navigation channel. Currently, this economic activity is threatened by deterioration of the Chetco River waterway and urgent need for replacement and renovation of the moorage basins.

Critical Need for Maintenance Dredging of Chetco River Channel

The Chetco River Navigation Channel has a Federally authorized depth of 14 feet. This depth must be maintained in order to accommodate the boats which utilize our facilities.

In March 1945, Congress authorized and appropriated funds for the dredging of the Chetco River Navigation Channel to a depth of 14 feet. Since then, maintenance dredging has been conducted by the Corps of Engineers in most years. In the years 1990–1994, Federal funding was fairly consistent averaging about $314,000 per year. In fiscal year 1996 $470,000 was authorized and appropriated; in fiscal year 1997 the amount authorized and appropriated was increased to $530,000 (fiscal year 1997 dredging has yet to occur, and will likely be conducted in July, as in previous years). However, the amount of material that is being dredged from the channel has increased dramatically. In fiscal year 1996, 17,000 cubic yards were dredged. In fiscal year 1997 the Corps is expecting to dredge more than 34,000 cubic yards—twice as much as last year.

Despite the obvious and increasing need for maintenance dredging of Chetco River channel and the rapidly growing amount of dredged material which needs to be removed annually, the Corps of Engineers has requested only $284,000 for fiscal year 1998 maintenance dredging. Even Corps of Engineers staff have suggested that they do not believe that this amount will be sufficient to maintain the 14 foot depth of the channel. If the channel's depth is reduced, it will threaten the passage of commercial vessel traffic which in turn impacts the viability of the Port and the surrounding community. To avoid this situation, we strongly urge the Subcommittee to

increase the Portland District, North Pacific Division budget and earmark $500,000 for fiscal year 1998 maintenance dredging of the Chetco River project.

Basin I Replacement and Basin II Renovation Project

Over the past year, the Port has undergone significant renovation in order to meet the increasing demands made on the Port by commercial and recreational users. The financing of these projects has largely been burdened by Port users and associated businesses, despite the state and national benefits. Federal agencies, however, have recently stepped forward to provide some assistance through President Clinton's economic timber adjustment program. For example, the Port has secured $650,000 in grant financing to construct a commercial/retail facility at the Port.

The final, and most critical part of this much needed overhaul is the renovation and replacement of the 25-year-old mooring facility. The Port currently has two basins with a mooring capacity of 911 slips. These basins serve as a critical harbor-of-refuge for mariners along Oregon's southern coast. Due to years of deterioration and overuse, Basin I must be completely replaced and Basin II is in dire need of major repair. If efforts to replace/repair Basins I and II are not successful this year, more than 50 percent of the Port's mooring capacity will most likely be shut down due to safety concerns. The basins also have water quality issues due to inadequate seasonable flushing problems and wintertime surge problems. It is easy to image the devastating impact such a closure would have on this rural, struggling community in transition.

The cost of the boat basin project will be $3 million. Securing a low-interest loan in the full amount is not economically feasible as it would require the Port to increase berthing fees by as much as 100 percent, rendering them the highest on the West Coast. At these rates, the Port would be unable to fill many of its berths. A loan in the amount of $1.5 million would result in an increase of 25 percent initially and up to 57 percent over time, an increase we believe our patrons, if provided quality facilities, could bear.

If this project is not funded, and mooring slips are closed (as expected), the economic viability of the surrounding community will suffer a severe setback, as commercial and recreational vessels calling upon the Port of Brookings Harbor will move to other Ports with quality mooring and shore-side services. The Port is working with all Federal agencies possible to assist in securing assistance. The Corps is studying water quality problems through the Water Resources Development Act, Section 1135 Program and a surge problem through the Rivers and Harbors Act, Section 107 Program.

The Port respectfully requests that this project be acknowledged by this committee as having national importance for the safety and welfare of mariners and instruct Federal agencies to participate in its planning and financing.

Conclusion

In sum, the Port of Brookings Harbor respectfully requests the following appropriations be included in the fiscal year 1998 Energy & Water Development Appropriations Bill: (1) an increase in the Portland District, North Pacific Division budget in order to earmark $500,000 to fully fund maintenance dredging of the Chetco River channel; and (2) recognize a project to replace and renovate moorage as having national importance for the safety and welfare of mariners.

Your strongest consideration of these requests is greatly appreciated.

PREPARED STATEMENT OF RON ARMSTRONG, MANAGER, PORT OF GOLD BEACH, OR

Mr. Chairman: The Port of Gold Beach and its five member Port Commission were created by an election held within the Port district on August 30, 1955. The following names identify the present day Board of Commissioners: Scott Boley, President; Gary Combs, Vice President; Doug Danville; Secretary; Ted Ferguson; Commissioner; Ted Burdett, Commissioner. Prior to the election of September 3, 1954, the Federal Rivers and Harbors Act authorized the construction of two jetties at the mouth of the Rogue River. (Attached drawing of vicinity map, jetties and harbor access channel, page 4, figure 1, project location.)

The existing dredging budget for the Rogue River bar channel entrance and the boat harbor entrance is $1,153,000. The 1998 budget was cut 35 percent, leaving $746,000 which is about enough to dredge out the bar. We are asking you to add $407,000 back into the 1998 budget. The boat harbor channel entrance must be dredged every year in order to maintain commerce and trade at our port facility. We anticipate needing at least $334,000 in dredging funds for the boat harbor channel entrance and the rest of the money will be needed to dredge out the Rogue River

bar. In the past, the City of Gold Beach has been a timber dependant community. Since the demise of the timber industry, we have experienced a depressed economy. The Port Commission has worked diligently on economic diversification projects and is now remodeling the Cannery and negotiating leases to establish new businesses on Port property.

The Port Commission is able to create jobs, enhance the economic base of the community and put people back to work. Our economy is still substantially dependent, either directly or indirectly upon marine activities.

Congressional support for continued maintenance dredging for this port and city is necessary in order to maintain a stable economy and enable us to move forward with our existing projects. The Port Commission continues to support the federal operation and maintenance dredging for Oregon Ports. A continuing O&M program insures job retention and future economic growth of not only this community, but other coastal communities, as well. Words alone cannot express how valuable the subcommittee's ongoing commitment is to our local economy.

The Port Commission enjoys a great partnership arrangement with the U.S. Army Corps of Engineers. Last year, their dredge, Yaquina, dredged out the federal navigation channel at the Rogue River bar. Shoaling at the boat harbor channel was contracted out to a private contractor. The Corps also used their dredge, Sandwick, to disperse some of the shoaling in the channel. In 1993, the Corps of Engineers conducted a reconnaissance study of the Port's federal navigation channel into the boat harbor. This study called for relocating the channel 900 feet away from an area of intense shoaling. The COE's report stated the annual operations and maintenance costs of this new channel would be approximately $5,000 instead of $334,000 or more that is now being spent. The Port of Gold Beach has filed an application to obtain grant funds to assist the Corps of Engineers in this channel relocation project. (Attached is pertinent data from COE report and funding source total project page 5, alternate 1 new channel.)

In December 1996 and January 1997, the pile dikes located at the South Jetty at the boat harbor channel entrance were destroyed and washed out to sea during the severe winter storms. According to the COE's 1994 Pile Dike Reconnaissance Report, the pile dikes reduced shoaling at approximately 65 percent at the boat harbor channel. The cost to replace the two upstream pile dikes as presently designed was calculated by this study to be $994,000. The boat harbor channel would still be in the same location with its intense shoaling. This is not cost effective and the Port Commission will continue to work with the COE to relocate the channel before it completely shoals in again.

On behalf of the Commission of the Port of Gold Beach, I respectfully submit this statement before the subcommittee to request support for its continued maintenance dredging of shallow draft ports. The dredging of the federal navigation channel through the Rogue River bar and the federal navigation channel into the boat harbor is essential for businesses dependant on maritime commerce and trade. The Rogue River ranks number three out of the top fifty highest use water bodies statewide. (See attached table, Oregon State Marine Board, 1996)

I believe that some day the boat harbor channel will be relocated as mentioned in my statement, cutting dredging costs from approximately $334,000 to about $5,000 a year. Until this project is completed, I believe we are going to continue to need the $1,153,000 as approved in this year's 1997 budget, again in 1998. We are asking you to add $407,000 back into the Rogue River's 1998 budget.

I want to thank you for giving me the opportunity to submit this written testimony. If anyone has any questions or concerns about this statement, please do not hesitate to contact me or any member of the Port Commission.

PREPARED STATEMENT OF DONALD G. MANN, GENERAL MANAGER, PORT OF NEWPORT, OR

Thank you for this opportunity to provide written testimony to the Committee regarding appropriations for fiscal year 1998 on issues that are important to the Port of Newport, the State of Oregon and our region.

First, we would like to thank members of Congress for their support in recent years for funding improvements to the North Marina Breakwater in Yaquina Bay, including a show of commitment for $500,000 toward repairing the existing structure. I will comment further on the status of this project later in my testimony. The new 180 foot extension to this facility is scheduled to start construction the first of October and will provide added protection to Newport's commercial fishing fleet and to our port docks. Also, we appreciate your efforts to place Weather Buoy 46050,

or the Stonewall Banks Buoy, back in service, providing critical weather information to both commercial and sport fishermen.

About the Port of Newport: Commerce through the Port's Newport International Terminal in recent years has been forest products, primarily private logs to the Pacific Rim and lumber to domestic markets. As is the case with a number of Pacific Northwest ports, log exports across Newport docks has decreased over the past decade. However, the Port has renewed its lease with Caffall Bros. Forest Products and entered into a new lease with a second exporter, Citifor, Inc. Citifor is presently installing a log debarker on Port land to provide a more marketable product overseas. As a result, a modest increase is expected in the near term at Newport International Terminal.

In view of the changing timber markets and declines because of resource availability caused by log export restrictions from public sources, harvest cutbacks for environmental reasons, and an increased domestic demand for saw logs, the Port is aggressively seeking other opportunities such as the import of domestic logs from Alaska, and pulp and chips to supply mills in our region. In addition, a Port representative recently traveled to the Russian Far East on a mission to promote Oregon food products and establish Newport as an eastern service terminal.

To further identify all possible opportunities, as well as constraints, for diversifying cargo and uses at Newport International Terminal, the Port is currently conducting a comprehensive market study. This study is funded through the timber initiative process, old growth diversification funds, state planning and marketing dollars, and local contributions. The findings of the market study will lead to the selection of a preferred plan for redevelopment, and associated preliminary engineering costs are to be included. The outcome of this project will help the Port respond to maritime markets, expand on marine-related uses, and redevelop facilities to meet short and long term needs.

As an active member of the Pacific Northwest Waterways Association, the Port endorses the organization's programs, policies, and goals on issues significant to the Northwest.

Following are transportation issues of particular importance to the Port of Newport, the state and the region:

Public dredge fleet

The Port of Newport strongly advocates preserving the U.S. Army Corps of Engineers minimum dredge fleet at a level that assures the best combination of public investment and private entrepreneurial opportunity, and consistent with federal emergency response capabilities. The Port contends that the reduced days allotted the public fleet does not always afford the Corps dredges to operate at their most efficient level. The Corps has proved to be very responsive to our needs in years past when emergencies arose. The Dredge Yaquina was quickly dispatched in each instance averting possible closure of the entrance channel to deep draft shipping. Therefore, we urge the Committee to make no further reductions in the number of dredges in the public fleet or cut back their days of operation.

Along these same lines, we urge Congress to seek a dependable funding source to pay for the maintenance of channels and harbors. The Harbor Maintenance Trust Fund provides the means to assure such funding to address both routine maintenance as well as unexpected dredging needs. We recognize that the Trust Fund helps to carry a large and growing surplus and that the Court of International Trade has declared the Tax to be unconstitutional as applied to exports. We believe that it is possible to achieve a balance between the need for adequate funding for dredging and a fee that is not overly burdensome on importers and exporters.

North Marina breakwater—Operations and Maintenance

As I mentioned earlier, the new extension to this 50-year old facility will be constructed beginning this Fall. Since 1997 federal appropriations were considered, the Corps investigated the integrity of the existing breakwater at length. They have determined that the 2,600 foot long wooden structure needs to be completely replaced. A 30-day Public Notice, along with the draft environmental assessment, was issued March 13, 1997, detailing the proposed replacement project. It is the Corps' intent to apply the $500,000 in this year's budget toward the purchase of materials. We support this approach and ask for your continued support for the completion of this project. Final costs to complete this much needed O&M project are currently being developed and a request for appropriation to allow work to begin in 1999 is expected. The maintenance schedule could take from one-to-two years to complete.

North jetty repair

The Port would again like to bring this matter to your attention. A Major Maintenance Report done September 1994 recommends a "Jetty Pullback Plan" of approxi-

mately 350 feet from its 7,000 feet full authorized length; estimated repair cost then was $2.9 million. The Port of Newport does not support this recommendation but rather supports the recommended alternative design, or "Composite Design," which would repair the north jetty to its full length. The initial costs of full length repair are considerably higher than the pullback plan, but the long-term costs are closer: $20.9 million "Pullback" versus $27.4 million "Full Length Repair." The $6.5 million difference equates to an annual cost of about $130,000 or $16,250 per vessel call (based on a low of 8 vessels per year). We believe safety should be a prime concern, not only for marine trade but for the commercial fishing industry. Safe passage across this bar at all times of the year is vital to the lives of individuals who are dependent upon the ocean for transportation and income.

Stonewall banks buoy

Newport commercial and sport fishermen are grateful this weather buoy was recently placed back in service. Unfortunately, according to the National Data Buoy Center in Mississippi, field maintenance of this equipment is not funded, and the buoy is expected to only function from 1½ to 2 years. Other than this buoy, the nearest sources for comparable weather information is at the mouth of the Columbia River near Astoria, Oregon, 300 miles west of Astoria, and 250 miles west of Coos Bay. Weather Service officials have said that using the other buoys to predict weather off Newport is like depending on weather forecasts in Portland to determine Newport conditions. State Representative Terry Thompson, a Newport commercial fisherman, has said, "The cheapest way truly is to put that buoy out there, because the other alternatives cost people their lives and cost time and money for search and rescue missions. You won't know directly that buoy helped, but trust me, the fishermen that use it, we know it helps."

In closing, I thank you again for this opportunity to bring before you issues not only important to our immediate Port District but important to maritime transportation in the Pacific Northwest.

LETTER FROM RON NELSON, SECRETARY-MANAGER, CENTRAL OREGON IRRIGATION DISTRICT

CENTRAL OREGON IRRIGATION DISTRICT,
Redmond, OR, March 26, 1997.

Hon. PETE DOMENICI,
Chairman, Subcommittee on Energy and Water Development, Committee on Appropriations, United States House of Representatives, Washington, DC.

DEAR CHAIRMAN DOMENICI: I am writing to respectfully ask for your help in the funding in fiscal year 1998, of Public Law 104–208, Division R. Title III. Sections 301(b)(3) and 301(h) authorizes $1.0 million in fiscal year 1998 to he administered through the Bureau of Reclamation.

The above referenced authorization has established, in Oregon, a private non-profit Deschutes Basin Working Group, d.b.a. the Deschutes Basin Resources Conservancy. The conservancy is made up of a diverse group of directors that are developing non regulatory, market based solutions to natural resource issues.

The law provides for 50/50 cost sharing with landowners or other agencies on voluntary projects that will result in increased water and improved water quality in the Deschutes Basin of Central Oregon.

For the past 17 years I have managed the 10,000 member Central Oregon Irrigation District. During that time I have been involved with various regulatory efforts to address complicated natural resource issues. I have also witnessed failed attempts by the Courts to deal with these same issues.

Beginning in 1992, the Warm Springs Tribe, the Environmental Defense Fund and the irrigation districts started experimenting with pilot projects that have resulted in this legislation.

In my opinion, this legislation offers us the best hope of successfully bringing about improvements in our River Basin while respecting our economic interests in the resource.

You will be receiving much more detail about our group from other interested parties in our area. However, I felt it was important to share with you my interest, and to encourage you to support the funding of this initiative.

Yours very truly,

RON NELSON,
Secretary-Manager.

PREPARED STATEMENT OF CALEB SHIELDS, CHAIRMAN, ASSINIBOINE AND SIOUX TRIBES OF THE FORT PECK RESERVATION

Fiscal Year 1998 Appropriations Request

The Assiniboine and Sioux Tribes of the Fort Peck Reservation respectfully request $240,000 to continue planning of the Fort Peck Reservation Municipal, Rural and Industrial Water System in Montana.

The Tribes appreciate your work by this Subcommittee on the project previously. In fiscal year 1993 and fiscal year 1994, $350,000 were appropriated, and in fiscal year 1992 $210,000 were appropriated. The funds appropriated in earlier years were sufficient to continue the planning investigations through fiscal year 1997. The funds were line items in the Bureau of Reclamation General Investigations budget.

The funds requested for fiscal year 1998 will be used to continue pre-authorized studies of the Project within the Fort Peck Indian Reservation and to incorporate studies from off the reservation. With fiscal year 1997 funds, we are completing into a Final Engineering Report. The Fort Peck Tribes urge the Subcommittee and its staff to inquire of the Bureau of Reclamation respecting the capability of the Tribes to effectively utilize the fiscal year 1998 funds.

Water Quality of Existing Drinking Water Supplies and Needs

The geologic setting of the Fort Peck Indian Reservation is comparable to the rest of Eastern Montana, North Dakota and South Dakota. Specifically, the deep groundwater of the Fort Peck Indian Reservation, flows into a sink that has collected water for eons. This deep water contains chemicals that do not drain away making of a brine several times more concentrated than sea water.

Consequently, the nearer surface groundwater is the source of most community and rural drinking water supplies. However, this groundwater is derived from precipitation that is filtered through marine shales. As result, the quality of this water is worse or comparable to that of the other projects that the Subcommittee is currently funding: Garrison, WEB, Mni Wiconi and Mid-Dakota. We have attached for the Committee's consideration Table 1 which compares water quality of communities within the proposed Fort Peck Project with water quality of communities in other projects authorized or pending before Congress. As Table 1 clearly shows, the general quality of the water as measured by total dissolved solids and sulfates is comparable or worse in the Fort Peck area.

The feature of this Project (within the reservation and outside it) that makes it cost effective is proximity to the Missouri River. The Missouri River is the southern boundary of the Fort Peck Indian Reservation. Our design population of 19,902 persons (13,900 within the reservation) can be served with short pipeline distances extending 75 miles from the treatment plant at the most distant locations. Most of the demand lies within a 30-mile distance from the treatment plant. The Tribes have committed a portion of their water right in the Missouri River to be used for this Project, both on and off the Reservation. The Tribes are willing to contribute this resource to ensure that the citizens of northeast Montana have safe drinking water.

Accomplishments with Prior Appropriations

The Assiniboine and Sioux Tribes are working closely with the Bureau of Reclamation and leaders from the communities and water user groups in Roosevelt, Sheridan, Daniels and Valley counties outside the Fort Peck Indian Reservation in the conduct of the planning studies.

The Tribes have prepared detailed cost estimates to help water users and communities outside the Fort Peck Indian Reservation in an evaluation of the costs of participating in the Project and improving drinking quality.

The total Project cost within the reservation, sized to carry off-reservation water demands, is $114 million. Assuming a cost share of 75 percent federal and 25 percent local, consistent with the Safe Drinking Water Act and comparable projects funded by the Subcommittee, the local cost share would be $5 million and the total Federal cost would be $109 million.

The cost of annual operation and maintenance of the facilities of the Fort Peck Tribes to deliver water to off-reservation communities is estimated at $1.12 per thousand gallons. Off-reservation users will have additional costs to operate and maintain off-reservation transmission and distribution facilities. Those costs are being determined. We are confident that it will compare favorably with Mni Wiconi costs of $1.46 per thousand gallons and Mid-Dakota costs of $2.50 per thousand gallons. Construction and annual operation, maintenance and replacement costs appear low enough to justify enlargement of Fort Peck facilities to carry off-reservation demands.

Fiscal Year 1998 Studies Will Assist Off-Reservation Communities and Rural Water Users

The purpose of the fiscal year 1998 request ($240,000) is for continued planning studies that will incorporate the Fort Peck Indian Reservation and off-reservation cost estimates. Specific technical objectives with fiscal year 1998 funds will be completion of Class I cultural resources inventory; wetlands inventory; incorporation of off-Reservation construction, operation, maintenance and replacement costs; and coordination with all interests to work out implementation details, including funding and cost shares.

Based on the findings of our studies, the Fort Peck Tribes will continue meeting with officials of the State of Montana, local communities and other interests to define the Project off the reservation, given the probable construction costs and the costs of operating the facilities. Public involvement undertaken last year by the Fort Peck Tribes will be continued. Interest in the Project off the reservation is high for the reason that all residents of this area have extremely poor water quality. Communities around the eastern, western and northern boundaries of the Fort Peck Indian Reservation rely on groundwater, which is poor and comparable to groundwater supplies on the Fort Peck Indian Reservation.

The Project will benefit the regional health and economy. Recognizing the importance of the Project, the 1997 Montana legislature appropriated $65,000 to assist with off-reservation cost-estimating and planning of the Project.

Project Authorization Sought

The Montana delegation plans to introduce a bill to authorize this important Project very soon. We are building relationships throughout the region, determining the interest of those outside the reservation and developing final planning studies in an effort to develop a cost effective Project with a cost sharing formula for off-reservation facilities that is acceptable to the Administration, the Congress, the Tribes and the State.

The assistance of the Subcommittee with fiscal year 1998 appropriations in the amount of $240,000 will go far in assisting the Tribes in this worthwhile Project. Not only will the drinking water supplies of the region be markedly improved, the tribal membership will benefit from the employment and earnings during construction, and we can continue work side-by-side with our northeast Montana neighbors to develop a quality Project for the improvement of the health and economy of all.

PREPARED STATEMENT OF RON SIMS, KING COUNTY EXECUTIVE; JANE HAGUE, COUNCIL CHAIR; LOUISE MILLER, COUNCIL VICE CHAIR, METROPOLITAN KING COUNTY COUNCIL, WA

Mr. Chairman, Members of the Subcommittee, this statement is made by Ron Sims, King County Executive; Jane Hague, Chair Metropolitan King County Council; and Louise Miller, Vice Chair Metropolitan King County Council. We appreciate the opportunity to submit this testimony on behalf of King County. Specifically, we would like to request your assistance with the following funding priorities in the Energy and Water Development Appropriations Bill for fiscal year 1998.

First, under the Corps of Engineers, Section 1135, we request your support for an allocation of $400,000 to fund the feasibility phase of the Hiram M. Chittenden Locks Fish Passage Project. King County has agreed to be the local sponsor for this project; it will likely be joined by the City of Seattle, the Muckleshoot Indian Tribe and others as co-sponsors. Over the past year, the County and other local governments, particularly those participating in the Lake Washington/Cedar River Watershed Forum, have worked with the Corps of Engineers to develop alternatives for improving fish passage through the Locks for outmigrating salmonids. Through this cooperative effort it has become clear that some very significant, near-term opportunities exist to reduce injury and mortality rates for outmigrating fish, including steelhead and sockeye, coho and Chinook salmon (the last two of which are under consideration for listing as threatened or endangered species under the Endangered Species Act).

Specific improvements that have been discussed include: installing one or more permanent "smolt slides" at the spillway gates of the Locks; installing a surface water collector or other means to keep smolt from entering the main lock chambers; and, implementing operational and structural improvements to the main chambers and their filling systems to reduce injuries for those smolt that might still pass through them. King County hope to have these improvements made as quickly as possible, and therefore we are seeking a specific allocation for the Chittenden Locks

Fish Passage Project from within the funds made available by the Committee for the Section 1135 program.

Second, under Corps of Engineers, Section 1135, we request your support for an allocation of $1,425,000 for the Bear Creek Fish and Wildlife Restoration Project. The feasibility study is anticipated to be completed in November of this year, and plans and specifications can be completed and construction commenced in fiscal year 1998.

Bear Creek drains 51 square miles in Snohomish and King Counties, and enters the Sammamish River three miles downstream of Lake Sammamish in the City of Redmond. Bear Creek produces the greatest number of sockeye salmon in the Sammamish Watershed. In the 1960s, the Corps of Engineers channelized and riprapped the lower 3,000 feet of Bear Creek as part of the Sammamish River Channel Improvement Project for flood control. Excavated material from the channel filled adjacent wetlands, and now the lower 3,000 feet of the creek is a narrow, fast-flowing channel, no longer suitable for salmon spawning, rearing, and winter refuge.

The Bear Creek 1135 project seeks to recreate a natural stream and floodplain by excavating meanders into the lower 3,000 feet of Bear Creek, and excavating up to ten acres of valley floor to reconnect the stream and the floodplain and reestablish wetlands. Your support for this important project would be greatly appreciated.

Third, under the Corps of Engineers, Section 1135, we request your support for a specific allocation of $750,000 for the Green/Duwamish Ecosystem Restoration Project. This request should not be confused with the on-going Duwamish/Green River Basin Fish and Wildlife Restoration project, which King County also supports and for which the Corps of Engineers is seeking $252,000 in the fiscal year 1998 budget request. The funding requested under the Section 1135 program is an outgrowth of this on-going study; the additional $750,000 is being requested in order to jump-start several of the highest priority fish and wildlife restoration projects that the Corps of Engineers and the County have identified as part of this on-going study. King County believes it is important to initiate work on the highest priority projects in the Green/Duwamish watershed in order to demonstrate on-the-ground successes as quickly as possible. The projects that would be funded in fiscal year 1998 would seek to address the most critical habitat needs in the watershed, and your support would be greatly appreciated.

Fourth, under the Corps of Engineers, Section 205, we request your support for a specific allocation of $100,000 for the Snoqualmie River Flood Control Project in the report to accompany the Energy and Water Development Appropriations bill for fiscal year 1998. The project is being jointly sponsored by the Corps of Engineers, the City of Snoqualmie and King County.

This project seeks to develop a solution to flooding above Snoqualmie Falls, one of the most severe flooding problems in all of King County. Annual average flood damages are estimated at over $1 million, while damages from major flood events, such as the ones we experienced in November of 1986 and November of 1990, can exceed $10,000,000 to $15,000,000. Given the high priority of this project, King County again requests that the project receive a specific allocation by the Appropriations Committee to ensure that the Corps has the necessary resources in fiscal year 1998 to enable the agency to continue to make progress on this important study.

Fifth, under the Corps of Engineers, Section 1135, we request that the Committee allocate $148,000 for the Sammamish River Weir Restoration project. The current weir, which was constructed to provide flood protection from a 40-year springtime flood event, is approximately 12 feet wide and only one foot deep. The shallow depth of flow through the notch during summer low water conditions, combined with the extensive human disturbance from the adjacent park surrounding the weir, have been determined to hinder the upstream migration of fish, especially salmon, that spawn in the upper watershed.

The project calls for the weir to be redesigned to deepen and narrow the notch, concentrating flows to increase the depth and velocity and thereby improve fish passage. A plunge pool will be created in the river below the weir to provide a place for migrating fish to rest prior to crossing the weir. Access to the river will also be controlled and riverbank vegetation will be restored for 1,500 feet upstream. Plans and specifications on the project are expected to be completed in May of this year, and the project will be ready to construct in fiscal year 1998. The total construction cost is estimated at $197,000, and the $148,000 requested will allow full funding of the project and construction to be completed in fiscal year 1998.

Sixth, and finally, under the Bureau of Reclamation, General Investigations, we request your support for an allocation of $300,000 for a study of water reuse opportunities in King County, Washington. The funds would be used to prepare a study of potential indirect potable reuse for the region, including opportunities along the Duwamish River and in the Lake Washington watershed. The study would explore

receiving water quality requirements, corresponding reclamation facility process requirements, alternative treatment technologies, and recommendations for specific reuse facilities. Water reuse has enormous potential benefits, and it is an important new area for the County to consider in the development of a comprehensive water resources plan.

Mr. Chairman, Members of the Subcommittee, on behalf of Metropolitan King County, we would again like to express our appreciation for this opportunity to testify, and ask your support for the County's priorities in the Fiscal Year 1998 Energy and Water Development Appropriations Act.

Thank you for your consideration.

PREPARED STATEMENT OF ZACH WILLEY, SENIOR ECONOMIST, ENVIRONMENTAL DEFENSE FUND

SUMMARY

The Deschutes Basin Working Group, dba the Deschutes Basin Resources Conservancy (DRC), is a non-profit private corporation established in Oregon in 1996. In September, 1996, Congress enacted and the President signed Public Law 104–208, which included S. 1662, the Oregon Resources Conservation Act. Section 301(h) (Division B, Title III) of Public Law 104–208 authorizes $1.0 million per year through 2001. Section 301(b)(3) states that "the Bureau of Reclamation shall pay from funds authorized under subsection (h) of this title up to 50 percent of the cost of performing any project proposed by the Working Group and approved by the Secretary, up to a total amount of $1,000,000 during each of the fiscal years 1997 through 2001."

The DRC is governed by a diverse group of directors from private and public interests from the region. It is a community-based, cooperative endeavor that believes economic progress and natural resource conservation need to work together to achieve success. The DRC seeks voluntary actions based upon contracts and compensation for property and services. The DRC does not seek, nor is it authorized, to impose regulatory mandates through legal or political action.

The Environmental Defense Fund (EDF) is a national non-profit organization with over 250,000 members. EDF is dedicated to solutions to environmental problems using economic and market-based incentives. EDF is supportive of the mission, goals, and governing structure of the DRC. We believe that the DRC's success is critical not only to the future of the economy and environment of Central Oregon, but also to that of many other river basins. The DRC is a unique institutional form of private-public partnership that can, through its successful operation, demonstrate to other river basin communities a means of solving conflicts between economic and environmental aspirations. EDF supports the appropriation of $1.0 million in fiscal year 1998 for federal agencies in the region to cost share with the DRC in funding ecological restoration projects to startup this important new initiative.

BACKGROUND

In 1989, the Environmental Defense Fund (EDF) and the Confederated Tribes of the Warm Springs Reservation began a cooperative project to reconcile on-reservation ecological and economic conflicts. A team was assembled to asses the reservation's environmental problems, to integrate responsibilities within tribal agencies, and to address issues of tribal sovereignty and primacy.

In late 1992, the Tribes and EDF expanded the scope of the project to include the entire Deschutes Basin. It was agreed that the initial focus would be on river flows and water pollution. Flow-deficient stream reaches and excessive water pollutant loads could only be mitigated by identifying and reducing existing water diversions and pollution discharges. At the same time, a high value was placed on being "good neighbors" to other landowners and resources users within the Basin. Positive incentives for changes in resource uses were emphasized instead of costly and divisive political and legal conflicts.

To facilitate discussion with resource users, EDF and the Tribes complied a database on ecological conditions in the Basin. Scattered sources of hydrology, water quality, water rights and uses, land uses and cover, demographics, and economic activities had never been analyzed for the Basin as a whole. Using the tribe's Geographic Information System, these data provided a picture of the Basin's existing and emerging ecological problems. Solutions employing economic incentives, such as water rights and pollution allowance marketing, were introduced and experiences elsewhere in the West were reviewed.

A key forum for this community dialogue—the "Ad Hoc Deschutes Group"—was formed in 1992 by EDF and the Tribes. The group convened occasionally to consider

a broad array of natural resource issues involving instream flows and water quality degradation in the Basin. The irrigation community holds the most water rights and reservoir storage and therefore has the greatest impact among resource users on the pattern and amount of river flows. At the same time, water quality degradation stems from a diverse set of land uses driving nonpoint water pollution. The 14 member Ad Hoc Group had representatives of all economic sectors in the Basin.

An important part of the project was to assure that the federal interests in the Basin are addressed along with those of the tribes, resource users, and local and state governments. Administration and Congressional officials were briefed by a delegation from the Basin in 1994.

The Ad Hoc Group had discussed alternative institutions, existing or new, that could address the Basin's interrelated natural resource issues. The need was recognized for a private organization with ecosystem-determined goals and methods based on positive incentives, consensus, and local governance. Since approximately half of the Basin's land area is managed by federal agencies it was clear that such a private organization would need the capacity to partner projects with the federal agencies to be truly ecosystem and basinwide in scope. In March, 1996, Senator Hatfield introduced S. 1662 authorizing federal agencies to work with this private organization, known as the Deschutes Basin Working Group. Title III of the Oregon Resource Conservation Act of 1996, signed by the President in September, 1996, authorizes the following:

—Federal agencies to work with the private Deschutes Basin Working Group, dba Deschutes Basin Resources Conservancy (DRC)
—Secretaries of Interior and Agriculture to appoint DRC board members for 3 year terms
—Federal participation with DRC in ecological restoration projects on federal and non-federal land and water with 50–50 cost share
—Five year startup authorization of $1.0 Million a year federal fund; 50–50 cost share with DRC
—Emphasize voluntary market-based economic incentives

The Deschutes Basin Working Group, later to adopt an operating name of the Deschutes Basin Resources Conservancy (DRC), has the goal of implementing on-the-ground projects that enhance the quality of the region's natural resources and add value to its economy. The DRC believes that economic progress and natural resource conservation must both be accommodated to benefit the Basin and its residents. The DRC is a community-based, cooperative endeavor. Its dealings are businesslike, seeking voluntary actions based on contracts and compensation for property and services.

The DRC is a unique private-public partnership. It is a private corporation created under Oregon State law and will be a tax-exempt organization under section 501(c)(3) of the Internal Revenue Code. Its board consists of nine members from the Basin's private sector; hydropower, livestock grazing, recreation/tourism, timber, land development, irrigation (2), environmental (2), and two members form the Confederated Tribes of the Warm Springs Reservation. In addition to the private board members there are two board members appointed from the Departments of Interior and Agriculture, two board members representing the State of Oregon, and four members representing local governments within the Deschutes Basin.

The DRC will receive funds through tax exempt donations from individuals, businesses, and corporations, including philanthropic foundations, and from government agencies seeking project development assistance or collaboration. It will seek to develop income from direct sources such as fee-for-service. The DRC will focus on projects in the Deschutes Basin—from tributary headwaters to the Columbia River—that involve long-term physical investments, natural resources management contracts, or individual transactions in tangible assets. Examples might include investments in reforestation or rangeland management that would yield habitat and ecological benefits as well as long-term timber or grazing returns. Individual transactions might include conservation easements on ecologically-valuable property, water rights trading to enhance river flows, or pollution reduction crediting for watershed health improvements.

Federal Appropriations in Fiscal Year 1998 for the DRC—An Investment in Central Oregon, in Federal Agencies' Future Role, and in River Basin Management

The DRC has a foundation enabling it to make a substantial contribution toward meeting the region's economic and ecological challenges. The potential for the DRC to marshal significant and ongoing resources and cooperation is great. The engagement of private sector interests in the design, funding, and implementation of ecological restoration efforts is an important precedent to help relieve federal budgetary requirements under a variety of programs and responsibilities. The DRC's combina-

tion of private and local interests with those of the federal agencies provides an opportunity to explore the cooperative sharing of authorities and responsibilities. The DRC represents a new institutional approach to river basin management that will be applicable to other river basins throughout the nation, particularly in the western regions.

SOUTHEAST U.S. WATER RESOURCE DEVELOPMENT PROJECTS

PREPARED STATEMENT OF RALPH O. CLEMENS, JR., PRESIDENT, COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION

SUMMARY

Mr. Chairman and distinguished Committee members: This statement includes the following:

(A) A plea to exercise caution and due deliberation before reducing funds for our Nation's transportation system;

(B) A request for support in the following areas:

—O&M funding for the Coosa-Alabama Basins as well as Mobile Harbor;

—Funding for feasibility phase investigation of alternatives to improve the reliability of the navigation channel below Claiborne Dam on the Alabama River;

—Reopening the Coosa Navigation Project;

—Resisting any attempt to raise user fuel tax on the Inland River navigation industry;

—Ratifying the Interstate Compacts governing the management of water resources within the Alabama-Coosa-Tallapoosa River Basin and the Apalachicola-Chattahoochee-Flint River Basin;

—Amending the Endangered Species Act of 1973 with reasonable and effective measures to protect our citizens as well as the environment;

—Supporting the Sturgeon Conservation Plan in the Mobile River Basin as developed by the Alabama-Tombigbee River Coalition and the Fish and Wildlife Service.

EXPANDED STATEMENT

Thank you for the opportunity to present to this Subcommittee my perspective on several topics relating to our Nation's waterways system in general, and to the Coosa-Alabama River Basin in particular. As President of the Coosa-Alabama River Improvement Association, I speak for a large and diverse group of private citizens and political and industrial organizations who see the continued development of the Coosa-Alabama Waterway as an opportunity for economic growth in our region as well as the Nation.

Our membership reflects a broad range of callings and professions, each with a well-defined interest in waterway development. Some use the waterway now, either as shipper or tow operator, while others are businessmen, bankers and a variety of other private individuals who have a stake in future economic development for their firms and successors to enjoy. Then there is a larger group of elected Officials and their constituents typical of the twenty-three municipalities and nineteen counties along the waterway who are members of this association. These members are working diligently to develop our waterway into a productive part of the river infrastructure of the State and Nation. Their efforts spring from a desire not only to improve the economic contribution of enhanced transportation available to users, but to provide a means of growth.

As an association of businesses, municipalities and private individuals, we applaud efforts to reduce the Federal deficit through real spending cuts, but we need to be careful when cutting into the transportation infrastructure. Our inland waterways are vital to this Nation's welfare. America's ports, navigable waterways, flood protection, water supply, environmental restoration, hydroelectric, and other water resources programs enhance economic development, national security, and general well-being. These programs serve the national interest in countless ways, returning far more in public benefits than they cost. A top-notch navigation system that is able to meet the demands of both domestic and international commerce is a driving force behind the national economy, accounting for over 2.2 billion tons of the nation's internal and foreign commerce in 1995. Thus, this system links our producers with consumers not only in this country, but around the world. It is incumbent upon the Federal Government to maintain and improve this system of interstate commerce.

Some think tanks are advocating turning the Corps of Engineers' Civil Works Program over to state or private managers. Again, we urge caution and due deliberation in such a move. Having one agency responsible for maintaining water projects on the Alabama River, for example, provides benefits that can't be measured in dollars and cents. Security, responsiveness and historical knowledge are incalculable to users of the river. The Corps' experience and the O&M funding that supports that experience are public investments in infrastructure. Slashing that investment does not automatically translate into private prosperity.

We are concerned that any budget strategy that reduces funding for the operations and maintenance of inland and intracoastal waterways will have a detrimental effect on the economic growth and development of the river system. We cannot allow that to happen. In the Alabama-Coosa River Basin, we must be able to maintain the existing river projects and facilities that support the commercial navigation, hydropower and recreational activities so critical to our region's economy. The first priority then must be the O&M funding appropriated to the Corps of Engineers to maintain those projects. Budget requests for the individual projects follow:

Project	President's budget	Association's Budget request
Alabama-Coosa River, AL [1] (AL River incl Claiborne L&D)	$4,903,000	$5,903,000
Miller's Ferry L&D [2]	5,835,000	5,835,000
Robert F. Henry L&D	3,858,000	3,858,000
Mobile Harbor	17,936,000	17,936,000
Lake Allatoona, GA	4,628,000	4,628,000
Carters Lake, GA	4,500,000	4,500,000
Lower Alabama Navigation Study (AL River south of Claiborne) feasibility study	500,000	
Totals	41,660,000	43,160,000

[1] Includes dredging from the mouth of the Alabama River through Claiborne L&D to Miller's Ferry. Coosa River not included.

[2] Includes $2.27 million to complete generator rewinding.

To attract new business into the Alabama River Basin, we must improve the infrastructure of the river itself, specifically the navigational reliability below Claiborne Dam. Increased reliability is the only way prospective investors will entertain establishing an industry that uses the river transportation. The Corps of Engineers currently maintains a 65 percent to 70 percent reliability through training dikes, reservoir management, and dredging. Of these measures, dredging is the most effective. Forecast requirements for navigation maintenance on the Alabama for fiscal year 1998 exceed the President's Budget request of $4.903 million. We ask the Subcommittee to increase the President's budget line for Alabama-Coosa River to $5.903 million to maintain the channel reliability below Claiborne Dam at its highest possible rate.

The most effective long term solution to improving navigation reliability on the Lower Alabama is a lock and dam; however, a fiscal year 1996 Corps study determined that proposal is not economically feasible. The next best alternative is to improve the training dikes. (Training dikes are levees or barriers built out from river banks to direct the water flow into the navigation channel, thus increasing the depth.) Mobile District is prepared to conduct a feasibility study to determine the interest of the Federal Government in funding the project. Along with continued maintenance dredging and efficient management of upstream reservoirs, improved training dikes are the only way to improve the navigation reliability on the Lower Alabama River. We ask you to insert first-year funding of $500,000 to enable the Mobile district to conduct a feasibility phase investigation of all alternatives to improve the reliability of the Lower Alabama navigation channel.

A major objective of our association is the completion of a navigable waterway from Mobile to Rome, Georgia. The history of the Coosa River Project is well known by this committee, but the proposal is in line with our emphasis on both infrastructure investment and the creation of jobs and economic opportunity throughout our region. The Pre-design Engineering Surveys are complete, so one of the most time-consuming requirements of the project is already on-the-shelf. We are well aware of the restrictive funding for such undertakings in the current environment, but ask the Committee to recognize that the completion of such a project is one of the largest and most rapid generators of jobs currently available. We owe it to the people

of the Coosa-Alabama River Basin, the states of Alabama and Georgia, and the entire region to maintain the vision of completing this waterway.

Another mechanism to make the river system attractive to potential users is to keep the cost of shipping via waterways down. The President's Budget for fiscal year 1998 does not currently include a proposal to increase a user's fuel tax, but we are well aware some in the administration think such a tax is a good idea. We have in the past listed some of the negative aspects of such a proposal, so suffice it to say here that an increase in user fuel tax will have detrimental effect in the short run on consumer prices and trade balance, and in the long run on the federal-private partnership and maintenance of the waterways system. As one of the most efficient modes of transportation this country possesses, the waterway system needs more incentives for investment, not obstacles and disincentives.

The Legislatures of Alabama and Georgia have recently passed an Interstate Water Compact establishing a commission to manage shared water resources in the Alabama-Coosa-Tallapoosa River Basin. That legislation, along with an identical compact negotiated with Florida for the Apalachicola-Chattahoochee-Flint River Basin, will be sent to Congress for ratification during this session. We urge complete support for both compacts, which set down a framework in which to allocate the precious water resources among the States and to settle disputes that may arise. The only alternative to these compacts is a protracted, costly battle in the courts, an alternative nobody wants.

The last issue I wish to address is a plea based on our experiences over the past several years with attempts by the Fish and Wildlife Service to list the Alabama Sturgeon as endangered under the Endangered Species Act of 1973. As you know, in December of 1994, the Secretary of Interior, Mr. Babbitt, decided not to list the Alabama Sturgeon, citing a lack of scientific evidence that the fish was a separate and distinct species or even currently existed in the habitat scrutinized. I won't go into the long, and often bewildering, story that evolved before Mr. Babbitt's decision, but I want to emphasize the potentially devastating effect possible when one agency, such as Fish and Wildlife Service, becomes the prosecutor, judge, jury and executioner of any proposal under the Endangered Species Act. There is no balance in the system. Economic and social factors are not even considered until a listing is made. History has shown us that, despite assurances of "no effect" or "minimal impact" on economic and operational consideration associated with a listing, the opposite has often been the case. The economic and social factors, prepared by a body separate but equal in authority to FWS, must be addressed during the proposal stage, not after a listing is approved. The Secretary of Interior, or whoever makes the final decision, must have all of the pros and cons of a proposal before deciding what is best for the people affected by such a proposal. Therefore, we fully support amending the Endangered Species Act to reflect the provisions I have just described.

In the meantime, the Fish and Wildlife Service, in cooperation with the Alabama-Tombigbee River Coalition, has drafted a Sturgeon Conservation Plan, outside the auspices of the Endangered Species Act, that has the strongest potential to propagate the Sturgeon population in the Mobile River Basin. We strongly support this plan as an example of the compromise required in the environment-economic debate. We ask the Congress to fully fund and support the Sturgeon Conservation Plan as the best way to save the Sturgeon in the Mobile River Basin.

In closing, we request your support in the following areas:

—O&M funding for the Coosa-Alabama Basins and Mobile Harbor;

—Funding for investigating the feasibility of improving the reliability of the navigation channel below Claiborne Dam;

—Reopening the Coosa Navigation Project;

—Resisting any attempt to raise user fuel tax on the Inland River navigation industry;

—Ratifying the Interstate Water Compacts negotiated among Alabama, Georgia, and Florida;

—Amending the Endangered Species Act of 1973 to require an economic analysis during listing and to establish a balance to the prosecution of a listing;

—Supporting the Sturgeon Conservation Plan as developed through the cooperative efforts of the Alabama-Tombigbee River Coalition and the Fish and Wildlife Service.

We sincerely appreciate the opportunity to present our views and to thank you for your strong support of the Nation's waterways.

LETTER FROM W.O. PACE, CHAIRMAN, AUTAUGA COUNTY COMMISSION

AUTAUGA COUNTY COMMISSION,
Prattville, AL, March 17, 1997.

Hon. PETE V. DOMENICI,
Senate Subcommittee on Appropriations for Energy and Water Development, U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: This letter is to inform you that the Autauga County Commission, Autauga County, Alabama, supports the U.S. Army Corps of Engineers request for funding for fiscal year 1998 to operate and maintain water projects in the Alabama-Coosa River Basin. There is a definite need to improve navigation reliability on the lower Alabama River for economic development reasons, i.e., decreasing tonnage on the river because of the meandering of the river, sharp turns and low water below Claiborne Dam; also, there has been a dearth of industries seeking to relocate within the River Basin. Therefore, we need to improve the navigational reliability below Claiborne Dam and maintain and improve training works and dredging. Economic development between Montgomery and Mobile depends on these improvements. The Corps is able to maintain a authorized nine foot channel 65 to 70 percent of the time, but major problems occur during July through September.

Barge costs on the Alabama River are higher than other waterways. Shippers use barges in one direction only, but pay for travel both ways because there is no backhaul available and there is not enough industry in the Basin to warrant two-way shipping. Ninety four percent of tons moved on the Alabama River are downbound. For these reasons, shippers have found other modes of transportation or left the Basin altogether. Adding to the costs the shippers have faced are delays caused by the shallow water depth. Also, after 1991, environmental attacks on sand and gravel businesses shipping by barge were so costly, a lot of these businesses closed. Lowered freight rates provide a better export market, thus helping the trade business. Waterways provide efficient transportation that tends to lower inflation. Congress must support the Interstate Compacts to resolve the two-basin water disputes among Alabama, Georgia, and Florida. Also, if Congress would amend the Endangered Species Act to include reasonable, balanced measures between environmental concerns and economic development instead of such stringent regulations, this would greatly improve economic development.

We would sincerely appreciate your help in this matter that is so vital to the State of Alabama.

Sincerely,

W. O. PACE,
Chairman.

LETTER FROM RANDALL L. GEORGE, PRESIDENT, MONTGOMERY AREA CHAMBER OF COMMERCE

MONTGOMERY AREA CHAMBER OF COMMERCE,
Montgomery, AL, March 12, 1997.

Senator PETE V. DOMENICI,
Senate Subcommittee on Appropriations for Energy and Water Development, U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: This letter offers the strongest support possible of the Coosa-Alabama River Improvement Association's effort to secure funding for a feasibility study of ways to improve navigation reliability on the Alabama River below Claiborne Dam. We know, for a fact, that major companies looking to relocate and/or expand often exclude Montgomery, and, in turn, Alabama, as a direct result of problems on our "navigable" rivers. On several occasions, international industrial companies trying to locate in our state have gone elsewhere because of channel depth and obstruction hindrances.

The U.S. and Alabama need these jobs. We would greatly appreciate your support of the fiscal year 1998 funding needed to find ways to alleviate the problems.

Sincerely,

RANDALL L. GEORGE,
President.

LETTER FROM JAMES T. JORDAN, DIRECTOR, J.T. JORDAN COTTON, INC.

J.T. JORDAN COTTON, INC.,
Centre, AL, March 17, 1997.

Hon. PETE V. DOMENICI,
Senate Subcommittee on Appropriations for Energy and Water Development, U. S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: This letter is to let you know that I support the Coosa-Alabama River Improvement Association's funding request for fiscal year 1998 for the operation and maintenance of this water project.

I also support the regional effort to improve and extend the Coosa-Alabama Waterway. The economic development of river basin between Mobile and Montgomery depends on these improvements.

In addition to the standard operation and maintenance requests, CARIA needs Congress to provide an additional $500,000 to fund a Corps feasibility study of ways to improve the navigation reliability below Claiborne Dam. Last year this request was cut during conference.

We need to strengthen the ability of the Alabama River to contribute to the welfare of the citizens of the Basin.

Thank you so much for you consideration in helping to appropriate funds for this project.

Sincerely yours,

JAMES T. JORDAN,
Director.

LETTER FROM PHILLIP A. SANGUINETTI, PRESIDENT, THE ANNISTON STAR

THE ANNISTON STAR,
Anniston, AL, March 17, 1997.

Hon. PETE V. DOMENICI,
Senate Subcommittee on Appropriations for Energy and Water Development, U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: As part of a collective effort to maintain and extend the Coosa-Alabama Waterway, I wholeheartedly support the Coosa-Alabama River Improvement Association's funding request for fiscal year 1998.

I strongly believe in and support the regional effort to improve and extend the Coosa-Alabama Waterway. This would include improving the navigational reliability below Claiborne Dam, maintaining and improving training works and dredging, which would enhance economic development of the river basin between Mobile and Montgomery.

Also, I believe that lowered freight rates would provide a better export market, thus helping the trade business. I also urge Congress to support the Interstate Compacts to resolve the two-basin water disputes among Alabama, Georgia and Florida, as well as amend the Endangered Species Act to include reasonable, balanced measures between environmental concerns and economic development.

Any support you and your committee can give the Association will be greatly appreciated by everyone involved.

Very truly yours,

PHILLIP A. SANGUINETTI
President.

LETTER FROM JAMIE D. WALLACE, PRESIDENT, SALMA AND DALLAS COUNTY CHAMBER OF COMMERCE

SELMA AND DALLAS COUNTY CHAMBER OF COMMERCE,
Selma, AL, March 17, 1997.

Hon. PETE V. DOMENICI,
Senate Subcommittee on Appropriations for Energy and Water Development, U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: As one of the cities alongside the Alabama River, a part of the Coosa-Alabama System, we are strongly tied to development of this waterway and its continued viability.

For many of the nation's waterways the past several years have seen a leveling off of tonnage; however, with economic indicators what they are and the rising costs

of other type surface transportation we are convinced that water transportation will rebound strongly.

We are pleased to support the funding request of the Coosa-Alabama Rivers System and to ask that additional attention be given to the problems which prevent this system from being as strong an industrial attraction as it logically should be.

Without a reliable channel it is impossible for those of us in the mid-part of the state to sell river commerce to potential users. Projects down river in the Claiborne Dam area and near Mobile must be undertaken to provide relief for those of us up stream. This can be undertaken by increased efficiency of the training works already in the river and by continuing funding for maintenance dredging. It is also crucial that the system can be assured of sufficient releases of water from upstream reservoirs, something not yet possible.

The Mobile District of the U.S. Corps of Engineers is ready to perform the needed maintenance work, but adequate funding is essential for them to do so.

While we are aware that federal funds for river projects are especially tight as you struggle to balance the budget we believe financing of adequate infrastructure for the nation's commerce must have some priority. Thank you for considering this project.

Sincerely,

JAMIE D. WALLACE,
President.

PREPARED STATEMENT OF JAMES M. DECOSMO, MANAGER OF LANDS, RESEARCH AND PROCUREMENT, SOUTHEAST TIMBERLANDS

Kimberly-Clark (K–C), began operations in Mobile following its merger with Scott Paper in December of 1995. Scott Paper acquired the mill from Hollingsworth and Whitney in 1953 who built the facility in 1940. Including the acquisition cost, K–C has invested over $2 billion in the Mobile Plant and support operations and is currently evaluating a proposal to allocate $200 million in Pulp Mill Capital upgrades. These investments represent an average annual capital investment of $50 million in Mobile.

A significant factor in the approval of capital invested in Mobile is the cost of manufacturing pulp, which is approximately 50 percent wood cost. As you may well know, Kimberly-Clark's transportation system is responsible for transporting approximately 80 percent of the wood requirement to Mobile and is a significant component of the existing and long-term fiber procurement strategy.

For the past fourteen years, Kimberly-Clark has continuously utilized the Warrior-Tombigbee Waterway, Coosa-Alabama River System, as well as the Port of Mobile. In 1983, the first year K–C shifted from truck and rail to river transportation, some 1.06 million tons of forest products were transported with two tug boats and forty barges. Due to the efficiencies and reliability of the Waterways, K–C transported in excess of 3.5 million tons of forest products in 1996, 1.1 million of which was exported to International Markets. To sustain marine operations at this level requires over 20 tug boats, 150 barges and over 250 jobs directly related to operations and maintenance.

For K–C to operate on the Waterway requires operating expenses in excess of $13.5 million. These operating expenses are required to support a $28 million capital investment in wholly-owned woodyards and joint venture wood processing facilities.

With this investment in Kimberly Clark's Southern Operations and the dependence on the Waterways, it is paramount that the river channels, locks and dams, bridges, harbors and all other elements of navigation be adequately maintained, upgraded and funded to meet the existing and future demands of the waterways and particularly the Coosa-Alabama River System.

In consideration of the value of the river system and the importance of operational reliability, Kimberly-Clark unanimously supports and recommends funding at $5.9 Million for the fiscal year 1998 Operations and Maintenance budget for the Coosa-Alabama River System and $23.2 Million for Mobile Harbor. In addition, $500 thousand is desperately needed to fund a study and initiate an upgrade to the training works on the lower reaches of the Alabama River. This section of the river has historically proven to be a difficult section to maintain channel width and depth during the summer and fall seasons.

K–C in its entirety has been through significant changes in the last thirteen months with the completion of the Kimberly-Clark and Scott merger. As a result, K–C has transitioned into a multi-billion dollar packaged products company strategically focused on diapers, personal care products, consumer tissue and away-from-

home products. To continue to be the market leader, all facilities and operations throughout the world must remain competitive, from the procurement of raw materials to the satisfaction of each and every customer.

The Mobile operations have been and are committed to continue to be leaders in the K–C world. To help continue a position of leadership and a viable operation, future stability, and growth and development in all facets of manufacturing must continually improve. To remain a sound competitor in a highly competitive industry, it is imperative that the waterways continue to be adequately maintained and upgraded to meet the challenges tomorrow brings. The Warrior-Tombigbee and Coosa-Alabama River waterways are the "Main Artery" that support the Mobile Harbor, Kimberly-Clark's Southern Operations and the thousands of jobs directly and indirectly related to its business. These waterways and ports will play a significant role in K–C's future success.

With these considerations in mind, we ask that you give the requested budgets and appropriations your full support.

Thank you for your help, consideration and support in this matter.

PREPARED STATEMENT OF ROBERT F. HENRY, JR., PRESIDENT, ROBERT F. HENRY TILE COMPANY, INC.

I urge the continued support of navigation on the Alabama River. The Coosa-Alabama River Improvement Association has done an excellent job of pointing out the numerous important benefits of a well maintained Alabama River to the citizens of this region. I concur.

There is the particular need for insuring maximum reliability of the southern portion of the river for navigation.

Please include these needs in the fiscal year 1998 budget.

PREPARED STATEMENT OF JOHN B. CROWE, EXECUTIVE VICE PRESIDENT/GENERAL MANAGER, ALABAMA RIVER PULP COMPANY, INC.

The Alabama River Companies of Claiborne join the Coosa-Alabama River Improvement Association's support of the U.S. Army Corps of Engineers' request to conduct a feasibility study to improve navigation of the Alabama River below the Claiborne Lock and Dam. We feel the $500,000 cost of the study would be a sensible investment in the economic growth of our state.

We recognize that navigational improvements to the lower Alabama River will heighten reliability, decrease costs and increase navigational usage. Training and dredging efforts must be maintained and improvements extended to spur much-needed economic development in the river basin between Montgomery and Mobile.

Growing environmental concerns could halt dredging and adversely impact economic opportunities for our state. The Corps of Engineers must be allowed to continue their job of managing the waterways.

Alabama is blessed with abundant natural resources and the state's economic vitality is greatly influenced by its strong river systems. We must explore ways to best utilize, develop and manage our waterways to strengthen our economy and provide better jobs for our people. We urge you to provide this important project with the necessary funding.

PREPARED STATEMENT OF W.F. JOSEPH, CHAIRMAN, MONTGOMERY COUNTY COMMISSION, MONTGOMERY, AL

The Montgomery County Commission continues to closely follow the development of the Coosa-Alabama River project which was originally authorized by the Congress in 1945. We believe that the benefits which accrue to the citizens of this region, and to the nation, fully justify the complete construction and operation of this economical waterway.

We fully support the testimony provided by the Coosa-Alabama River Improvement Association. For many years this group has represented us and they accurately reflect our feelings of support for this waterway project.

Of particular interest to us is funding to operate and maintain (O&M) water projects in the Alabama-Coosa River Basin.

Also, we feel that the requested appropriation to fund a Corps feasibility study of ways to improve the navigation reliability below Claiborne Dam will enhance the economic development of river basin between Mobile and Montgomery.

We urge your favorable consideration of the recommended appropriations for fiscal year 1998. Adequate funding as requested is necessary to insure that progress is made for further development of the system and to properly operate and maintain the existing portion. Similar information has been sent to Honorable Joseph M. McDade, Chairman, House Subcommittee on Appropriations for Energy and Water Development, U. S. House of Representatives, regarding this matter.

PREPARED STATEMENT OF ROBERT M. CRESWELL, CONSULTANT, CAMDEN, AL

As Reservoir/Resource Manager for the Corps of Engineers during the construction of the recreational facilities along the Alabama River during the period 1969 through 1984, I witnessed the growth of industry and commerce on and near the river and heard the assurances made that the navigable channel would be maintained at 9 feet.

I fully support the Coosa-Alabama River Improvement Association's funding request for fiscal year 1998 since I have also witnessed the delays encountered by tows on the river due to unreliable channel depths below Claiborne Dam during the summer months. This has discouraged new industry along the waterway.

The fiscal year 1998 Federal Budget should include $500,000 for Mobile District, Corps of Engineers to perform a feasibility study to determine the costs to improve the channel below Claiborne Lock and Dam, thus insuring the commitment made to the citizens and industry regarding the 9-foot channel will be fulfilled.

The continued maintenance dredging and operation of the locks, powerhouses and recreational facilities are needed to make good the promises made under the River and Harbor Act.

In addition, Congress should support the Interstate Compacts to resolve the water disputes between Georgia, Alabama and Florida to insure adequate water for the three states in the future.

Likewise, support should be given to amend the Endangered Species Act to include reasonable, balanced measures between environmental concerns and economic development in the area.

Your consideration of the above measures is requested and will be appreciated by residents of this area.

PREPARED STATEMENT OF JOHN P. CAREY, CHIEF ADMINISTRATIVE OFFICER, ALABAMA STATE DOCKS DEPARTMENT, MOBILE, AL

OPERATING AND MAINTENANCE FUNDING, MOBILE HARBOR

Each year as we prepare testimony to your committee, the validity of the partnership between the Federal Government (U.S. Army Corps of Engineers, COE) and the State of Alabama (Alabama State Docks, ASD) is reestablished. The reliability of the Mobile Harbor Federal Project, resulting from the exceptional maintenance program conducted by the Mobile District COE, has enabled ASD and the inland water system servicing Alabama and the surrounding states to experience record levels of commerce. In addition, it has allowed the tidewater communities of southern Alabama to continue to compete at the national and international level for plant expansion and new site location.

ASD is the local cost sharing sponsor for the Project. We are a State Agency, but we are revenue based and receive no State Tax funding. In the seven years since the COE and ASD partnered to deepen the main channel of the Project from 40 ft. to 45 ft., the annual revenues of ASD have increased by over 50 percent to $62 million on a cargo value of $3.2 billion. In a just released study conducted by the Center for Business and Economic Research of the University of South Alabama on the impact of ASD on Alabama's economy, it was determined that almost 120,000 jobs statewide were engaged in producing, transporting or providing export/import services for products that are shipped through ASD. In the early 1990's, a similar study estimated that such services resulted in an economic impact of $1.3 billion.

This latest study sets the total wage impact at $3.0 billion. It is estimated that if all of the tidewater industries in the Port of Mobile were to be factored into this study, the above impacts would be increased by some 20 to 25 percent.

This growth has not come without significant investment and increased expenses. In the past year, ASD had its annual expenses grow to the high $50 million range. We have built approximately $50 million in new infrastructure and have increased our bonded indebtedness by over 50 percent—to an amount in excess of $150 million. In addition, industries which have elected to locate on ASD property are con-

tinuing to construct or expand their infrastructure at a rate in excess of that of ASD.

In testimony last year, we identified two potential opportunities to achieve a cost reduction in the expenditure of federal funds for the maintenance dredging of the Federal Project. One was through a federal legislative change that would allow the COE to investigate alternative dredge material disposal options consistent with environmental concerns. Appropriate language was included in the Water Resources Development Act (W.R.D.A.) of 1996. The Mobile District Office is currently investigating at least one such alternative. The second opportunity was the design and installation of mid-channel sumps to improve the efficiency of the dredging process. Additional federal O and M funding will be necessary to implement this option.

The Mobile Harbor Federal Project has been fortunate to escape the direct impact of catastrophic events since the late 1970's—mid 1980's. As a result, the District has been able to reduce its annual maintenance budget requirement from $22 million (1991) to an average of just under $18 million. We have, however, in two of the last three years, been impacted as a result of flooding on the mainstem of the lower Mississippi River. Specifically, private industry dredges, under contract to the Mobile District and working on our Project, have been diverted to combat shoaling at the mouth of the Mississippi. As this testimony is being prepared, severe flooding is occurring on the Ohio River and will most likely result in maintenance dredging problems that will severely test the capability of the total dredging fleet. The COE must be prepared and allowed to mobilize its hopper dredge fleet rapidly lest the capacity of Gulf Ports such as Mobile are excessively impacted.

Given the above, we respectfully request that the proposed fiscal year 1998 COE budget request of $17.936 million for the Mobile Harbor be appropriated. In addition, ASD is in the process of seeking authorization to extend its 45 ft. channel approximately 1,300 ft. to service a new $100+ million Direct Reduced Iron (DRI) Plant on the 40 ft. channel. Upon authorization, ASD will fund the new construction provided the federal government will reimburse ASD consistent with current cost sharing provisions.

This incremental construction cost is estimated at less than $0.5 million and will produce an annual benefit in excess of $3.0 million. Finally, ASD seeks the funds to establish the mid-channel sumps that the COE anticipates will result in more efficient and cost effective dredging maintenance of the Project. This cost is estimated at approximately $4.5 million. Therefore, ASD respectfully requests that the COE be funded up to $22.5 million for the Mobile Harbor Federal Project for fiscal year 1998.

As was noted earlier, the Port of Mobile is the major (only) deep water port of the State of Alabama and surrounding states serviced by the inland waterway systems. The systems of the Coosa-Alabama, the Black Warrior-Tombigbee, the Tennessee, the Appalachicola-Chattahoochee-Flint, the Tennessee-Tombigbee and Gulf Intercoastal Waterway comprise 1,438 miles of navigable water in the State of Alabama alone. The Tennessee-Tombigbee in particular not only links Alabama to the majority of national inland waterway systems, it also provides the only alternative for water borne commerce when the Lower Mississippi River experiences either flood or drought conditions.

Failure to fully maintain these water systems is critical to interstate and international commerce of mid-America and Southeastern Gulf States. It is essential that waterways be funded at the fiscal year 1998 COE budget request level. In addition, the Tennessee-Tombigbee funding level must be no less than its fiscal year 1997 budget level.

The Alabama State Docks again thanks your Committee for its long history of support of our Community, State and the Southeastern United States as we compete in the international market place and enhance the quality of life of the citizens of the State of Alabama and the region.

PREPARED STATEMENT OF SHELDON L. MORGAN, WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION

SUMMARY OF THE FISCAL YEAR 1998 REQUEST

The following is a summary of the funding requests for the U.S. Army Corps of Engineers for fiscal year 1998 to meet the needs of the Warrior-Tombigbee Waterway, and which we ask the Committee to approve:

Warrior-Tombigbee Waterway:	
Operations and Maintenance Funds included in Corps' Budget Request (3 percent under fiscal year 1997 funding)	$16,200,000

Funds for Additional Capability for O&M, not included in Corps' Budget Request	4,000,000
Total O&M Funds Required	20,200,000

Other needs allied to the Warrior-Tombigbee are:

Mobile Harbor—Supporting request of the Alabama State Docks:	
Operations and Maintenance	$18,200,000
Reimbursement for advanced funds to Corps for channel extension	500,000
Additional capabilities for channel sumps	4,500,000
Total	23,200,000

We wish to highlight the item identified above as "Additional Capability". Since funds for this item would not normally be included in the Corps' Budget request, it is not likely that the committee has been informed of the essentiality of funding for this particular Additional Capability. In the absence of the Corps fiscal year 1998 budget information at this time we are requesting the additional funds for continuing projects. We emphasize the need for additional O&M Capability funds if we are to have an adequate current year program, and to support on-going projects designed to improve safety and efficiency and to reduce future costs to the Federal Government. Projects to be funded from this request are continuing projects under the 20 year long range plan for improving the BWT, including certain equipment needs for handling emergencies, three remaining vital upland disposal sites which, when implemented, will help reduce annual dredging costs, mooring cells, a long range study of the waterway and other improvements.

Written statements of support are attached.

I am Sheldon L. Morgan, President of the Warrior-Tombigbee Development Association. Our members represent a broad cross-section of shippers, carriers, and the general business community in the Warrior-Tombigbee basin in Alabama, and nine other states. The Association began in 1949 to work for the redevelopment of the Warrior-Tombigbee Waterway System. Construction of its original 17 locks and dams began in the late 1870's, and completed in 1915. The navigation system provided by these locks and dams had gradually deteriorated and, following World War II, the annual tonnage had leveled off at 2.5 million tons, due to the condition and limited capacity of the obsolete locks. The Association began in 1950 to work with Alabama's Congressional Delegation and the Army Corps of Engineers to plan for modernization. Five new locks were built between 1954 and 1975. The last remaining old structure (Oliver Lock and Dam) was replaced in 1992—the first under the Water Resource Development Act of 1986. The Warrior-Tombigbee Waterway now has modern and standard sized locks throughout its length. These six new locks replaced the seventeen old, turn-of-the-century locks, and today, this system represents a most noteworthy example of the positive impact of the Federal water resource development program. The most persuasive evidence of the validity of this project and the wisdom of those who made it possible comes from the record compiled during and following the investment in its redevelopment. During the economic studies which justified these investments, it was projected that by 1980, the Waterway would carry some eight million tons annually, producing a positive benefit to cost ratio. These levels were reached in 1966 and, by 1980, twice the projected tonnage was being moved. Traffic has since reached 25 million tons annually, a level three times that which had been projected. Clearly this has been a valid investment in infrastructure.

Subsequently, due in large part to the federal investment in this waterway, several billion dollars have been invested by industry, agriculture and other non-Federal agencies, providing thousands of jobs. For example, the Alabama State Docks, as a result of a $300+ million expansion program, now offers the most advanced export coal handling technology available in this country, along with similar improvements for handling grain, bulk materials, steel and forest products. It is interesting to note that the investment by this one local agency exceeds the total Federal investment in building all the locks and dams on the entire waterway, including the new Oliver Lock. We are asking for the continuation of federal investments which have paid off many fold. The coal handling facility was recently expanded, representing an additional $14 million investment.

This Waterway must continue to be efficient and reliable if its users are to remain competitive in world markets. Shipments of ore, steel, and related products have increased because of the new and modern U.S. Steel facilities in Birmingham, and a

new British Steel mill at Tuscaloosa which is already being expanded. The efficiency and modernization of the waterway have been important factors in U.S. Steel's continuing investments to modernize its Fairfield mill. Fairfield is now again one of the bright stars in the USX crown. Recent investments substantially exceed $1 billion. The new British Steel mill surpassed $100 million in initial investment, and an additional $154 million is now underway. This mill utilizes the river southbound for export, as well as northbound for raw materials and domestic sales of finished product. Hence there is a favorable impact on the balance of payments which will be further enhanced by the current expansion. British Steel is constructing a $100 million Direct Reduction Iron Plant at Mobile to ship production on the Black Warrior-Tombigbee to Tuscaloosa Steel.

Major facilities for mining, manufacturing, forest products and marine equipment account for well over another $1.5 billion in recent investment. A new underground coal mine alongside the Warrior River has begun operation with a planned annual production rate of some four million tons. This will be among the largest underground mines in the United States. It is a world class facility and its low sulphur coal will move through an adjoining barge loading facility. Coal also moves out of Kentucky to electric generating plants on the BWT. There are new facilities at the Port of Mobile, which handle more forest products than the total handled by all other Gulf Coast ports. The efficiency and reliability of the waterway are key factors in the development and competitiveness of these facilities, upon which thousands of jobs depend.

These are but examples of how this waterway is so central to the economy of this entire area, impacting both domestic and international markets. Attached with this statement are letters further highlighting this importance. These represent a broad cross-section of the economic heartbeat of an entire region. Throughout these statements you will find repeated references to the importance of confidence in the waterway to the willingness of business and industry to continue to invest in our area and of their customers to depend on its reliability for the movement of their products. Please note the wide range of interests represented by these statements: financial institutions; public utilities; port facilities; coal mining, both deep and surface; manufacturers; suppliers; marine interests; petroleum and chemical processors and general business.

We are hopeful the President's recommendation for O&M funds plus some add-ons for additional capability be provided for the Warrior-Tombigbee Waterway to help us catch up on deferred projects. This would be realistic funding which we will support as absolutely essential to day to day activities of the O&M program, and with good management it will allow for the continuation of several on-going projects which are near the point of culmination, following several years of investigation, design and now beginning the actual work. These projects address long-standing problems and have required extensive research and coordination and reflect excellent teamwork by the Corps and the industry. But for the support of this committee, they would not be nearing reality. I wish to emphasize that this level of funding is the minimum essential level.

Mr. Chairman, we look forward to working with this Committee. You should be advised that industry and the Corps of Engineers in the Mobile District have developed a true partnership and enjoy the finest of professional and mutually supportive relationships. From this have come both short and long range programs which have provided a basis for orderly progress toward keeping the Waterway efficient and reliable. The funding requirements to which I have referred stem from work we need to continue now under these programs. I respectfully repeat that the performance of this waterway in successfully handling a level of tonnage some three times the projections made during its design, attest to your foresight and support of this Committee.

To summarize and close our testimony, the Warrior-Tombigbee Waterway is a classic example of the positive aspects of the Civil Works Program. The Congress has seen its potential and has supported its development. And now the project continues to demonstrate its worth. Investment and expansion continue locally.

During the severe drought in 1988, this waterway operated normally and with the Tennessee-Tombigbee connection provided an alternate route for cargo unable to move otherwise. There are large, national carriers now operating regularly on the Warrior-Tombigbee and Tennessee-Tombigbee as a result of their 1988 experience.

This appeal by the Warrior-Tombigbee Development Association for funding Operations and Maintenance of the Black Warrior-Tombigbee Waterway System by the Congress for fiscal year 1998 is being made without knowledge of the President's budget recommendations. Normally, the Administration's budget will have been presented by the time the Subcommittee holds its hearings for public testimony. Since this is not the case, it is necessary to consider the historical records of the Corps

of Engineers in maintaining navigation in past years as well as the important infrastructure projects which have been deferred for one reason or another. Those projects deferred are elements of a long range strategic plan by this Association and the Corps developed over time to improve the efficiency and safety of the Waterway.

The Warrior-Tombigbee Development Association request for Operations & Maintenance funding in fiscal year 1998 for the Black Warrior-Tombigbee Waterway in the amount of $16.2 million. This is 3 percent under fiscal year 1997 funding (an administration goal) for the normal O&M work, this is the minimum to keep navigation capability at a nominal level. However, additional capability of the Corps is important to the continuing improvements that have been deferred. These include upland disposal sites, mooring cells, certain equipment at locks, a long range study of future needs and demands and other vital improvements totaling $4.0 million. Therefore, our request is for a total of $20,200,000 for fiscal year 1998.

PREPARED STATEMENT OF JAMES A. VANN, JR., PRESIDENT AND CHIEF EXECUTIVE OFFICER, ALABAMA ELECTRIC COOPERATIVE, INC.

BACKGROUND INFORMATION

Alabama Electric Cooperative, Inc. (AEC) is a wholesale power supplier for 21 member-owners located in central and south Alabama and northwest Florida. The member-owners serve over 300,000 consumers. AEC operates the Charles R. Lowman Power Plant, located at Milepost 89.5 on the Tombigbee River, as well as a compressed air energy storage plant, the McIntosh Plant which impacts the amount of coal required at the Lowman Plant. Also, AEC has a site on the Black Warrior-Tombigbee River which is a possible location for a future base-load fossil fired generating plant.

STATEMENT OF INTEREST AND SUPPORT

AEC joins the collective effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway because of the lower fuel transportation costs which the waterway provides to AEC's Lowman electric generating plant. The Black Warrior-Tombigbee Waterway (BWT), the Tenn-Tom Waterway, and the Port of Mobile are vital to our delivery of coal economically and efficiently to this plant, which is located on the Tombigbee River near Jackson, Alabama. During calendar year 1996, we shipped 1,103,919 tons of coal via the BWT and for 1997 we have purchased in excess of 1,200,000 tons of coal which will be delivered via the Tenn-Tom Waterway and the BWT.

Because delivered coal cost is such an important factor in our ability to maintain competitive rates to our member systems, AEC supports the Warrior-Tombigbee project and level funding in the Corps of Engineers' budget request. In addition, AEC supports the critical needs identified by the Corps which have been deferred for the past two years.

In addition to the dependency which AEC has upon the BWT, there are benefits to our region and our end customers as a direct result of a viable BWT waterway and the Port of Mobile. These systems provide an invaluable link between our region and the world markets. As such, they stimulate the region's economy, provide jobs and help reduce the trade deficit.

SPECIFIC BENEFITS OF THE WARRIOR-TOMBIGBEE WATERWAY AND THE PORT OF MOBILE TO AEC

The amount of coal moved to AEC's Plant Lowman by barge on the BWT for the past five years is as follows:

Year	*Tons*
1992	1,114,742
1993	866,731
1994	1,077,485
1995	874,044
1996	1,103,919
Total	5,036,921

The savings in transportation costs represented by the above tonnage exceeds $25 million compared to AEC's next viable option of delivery via rail.

AEC plans to move a minimum of 1.2 million tons of coal via the BWT in 1997, and we project our usage of the waterway to remain at this level or increase in the next ten years. We have evaluated imported coal on several occasions, and the eco-

nomics have been improving. Thus, we see the potential for the use of the Port of Mobile in conjunction with the BWT in delivering coal for our future needs.

STATEMENT WITH REGARD TO APPROPRIATION AMOUNTS

AEC supports near level funding ($16.2 million) for Operation and Maintenance in the Corps of Engineers' fiscal year 1998 Budget. We view this as a minimum requirement in that this level of O&M funding is necessary to cover the minimum expected needs within the Mobile District for fiscal year 1998. Further, this amount represents a 2.5 percent reduction in the requested amount from the previous year's budget request by the Corps.

In addition, the Corps has the opportunity to move forward on projects which have been deferred over the past two years. Since there are no new construction needs for the BWT, AEC supports funding of these projects which total $4,000,000.

AEC also supports the appropriation of adequate O&M funds of $23.2 million for Mobile Harbor.

CONCLUSION

We appreciate the opportunity to submit a statement on behalf of our member owners in central and south Alabama and northwest Florida pertaining to the benefits of the BWT waterway and the Port of Mobile. AEC and its member owners fully support the Corps of Engineers' 1998 budget request for $16.2 million in operations and maintenance funds for the BWT waterway, $23.2 million for Mobile Harbor O&M, as well as the appropriation of an additional $4 million in funds for deferred projects which the Corps is in a position to complete. While we are well aware of budget constraints, we believe these projects should be funded at these levels to assure a viable transportation system. With the money that has already been spent in construction of the BWT transportation system, proper funding for operations and maintenance is, in our view, prudent management of what is undoubtedly a national asset.

LETTER FROM ROY F. ETHEREDGE, SENIOR VICE PRESIDENT, ALABAMA GAS CORP.

ALABAMA GAS CORP.
Birmingham, AL, January 30, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy & Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I am writing you in support of fiscal year 1998 funding for the Corps of Engineers for the Black Warrior-Tombigbee Waterway and the Mobile Harbor. The Warrior-Tombigbee Waterway is vital to the economic health of Alabama. Our basic industries such as mining and heavy metals depend on an efficient water transportation system. Adequate funding for operations and maintenance is important in order to avoid interruptions to the flow of river traffic.

Several projects have been deferred by the Corps the past 3 years due to lack of funds and we encourage you and your committee to consider an additional $4,000,000 for these activities, i.e., upland disposal dikes and mooring cells.

We support the Warrior Tombigbee Development Association's request for appropriations in the following amounts:

[In millions of dollars]

Corps of Engineers O&M Budget	16.2
Request for additional capabilities	4.0
Funds for Mobile Harbor	23.2

Thank you for your consideration.

Sincerely,

ROY F. ETHEREDGE,
Senior Vice President.

PREPARED STATEMENT OF LYNN SHERRILL, VICE PRESIDENT OF OPERATIONS, CROUNSE CORP.

Maintenance and improvements to the Warrior-Tombigbee Waterways and Mobile Harbor are a matter of vital interest to our Company. Crounse Corporation has, since 1990, barged approximately one million tons of coal per year from the Upper Ohio Valley to locations on the Black Warrior River and Mobile, Alabama area.

In 1995, we began moving coal from the upper reaches of the Black Warrior to destinations in the Ohio Valley and hope this becomes a steady movement. We have found the Warrior-Tombigbee Waterway to be our highest cost operating area, and can ill afford to have the system deteriorate below its present level, because of reduced maintenance funding.

LETTER FROM RONALD C. DANSBY, PRESIDENT, INLAND DIVISION, KIRBY CORP.

KIRBY CORP.,
INLAND CHEMICAL DIVISION,
Houston, TX, February 26, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy Water Development,
U.S. Senate, Washington, DC.

DEAR CHAIRMAN DOMENICI: This letter is sent to you on behalf of Kirby Corporation. We are a major diversified water carrier that provides service to the public through the transportation of all types of bulk liquid and dry cargoes. We have 2,000 afloat and shore based employees. Our area of operations is the inland waterway system of the United States and the Gulf of Mexico. We have operated on the Warrior Tombigbee system for many years. Kirby is one of the largest users of the Tennessee-Tombigbee Waterway since its inception. Our major customers include the Monsanto plants at Decatur, Alabama, Amoco, and Novacor.

We join with President Sheldon Morgan of the Warrior-Tombigbee Development Association in urging your support of the U.S. Corps of Engineer's budget. We feel the additional funds are necessary to keep the system reliable and efficient.

I am aware that you face many hard decisions in seeking to balance the budget. Please remember that in 1988 this country experienced one of the worst droughts in history. The Mississippi River reached its lowest level in recorded history. Barging came to a virtual standstill on that waterway. During that critical time, Kirby was able to shift its tows that nominally operate down the Mississippi River to the Warrior-Tombigbee system; thus preventing many of our customers from running out of products and closing down their plants. In the course of that one summer alone, it was calculated the economical savings paid for the entire Warrior-Tombigbee project. This country can ill afford for this waterway to deteriorate.

We appreciate your consideration of these budget requests that are of such vital importance to our company and industry.

Very truly yours,

RONALD C. DANSBY,
President, Inland Division.

PREPARED STATEMENT OF JAMES C. LUDWIG, PRESIDENT, DOMESTIC SALES, DRUMMOND COAL SALES, INC.

The Drummond Company, Inc., as one of the largest coal producers in Alabama, has a vital interest in the continued availability and use of the navigable waterways in Alabama. Our company (and many others) and the economic viability of the Southeast has been positively impacted by the Warrior-Tombigbee System and the Port of Mobile. This must continue.

The company's Shoal Creek Mine, has its principal shipping outlet at Mile Post 372 on the Black Warrior River. The success of this project (one of the newest and largest underground mines in the U.S.); our other existing mines and barge loading facilities now so heavily dependent on water transportation to be competitive; and the numerous associated jobs for Alabamians would be jeopardized absent the availability of an efficient, well maintained, and fully operational waterway system.

As you consider the funding needs of the Corps of Engineers, we strongly urge appropriation of at least $16.2 million for fiscal year 1998 for the day to day Operation and Maintenance of the Warrior-Tombigbee system and to continue the needed improvements in the approaches to the bridges and Jackson and Naheola. We also support adequate O&M funding for Mobile Harbor. Lastly, and in addition to the above, we urge appropriation of an additional $4,000,000 for projects that have been deferred.

PREPARED STATEMENT OF G. EDISON "ED" HOLLAND, JR., VICE PRESIDENT, POWER GENERATION/TRANSMISSION AND CORPORATE COUNSEL, GULF POWER CO.

Gulf Power Company is an investor-owned electric utility serving approximately 331,000 customers in the Northwest Florida area. Our Company utilizes coal for over 95 percent of its total generation requirements. Coal consumption for 1996 totaled about 5,000,000 tons. More than half of this coal was delivered using waterborne transportation.

Historically, Gulf Power has moved millions of tons of coal over the Tennessee/Black Warrior/Tombigbee Waterways or through the Alabama State Docks at the Port of Mobile. Currently, we are shipping a major portion of our requirements through the Port of Mobile. The flexibility of receiving our fuel supply over these waterways is an essential element in providing our customers with reliable electric service at the most economical cost.

Since Gulf Power depends on these waterways, we support the Black Warrior-Tombigbee Development Association in its effort to obtain funding for maintenance of the waterway system, and ask that you give full consideration to the testimony of the Association.

Specifically, we would ask that you approve the Corps of Engineers (Corps) operating and maintenance budget request of $16.2 million for the Black Warrior-Tombigbee Waterway for fiscal year 1997.

We also support adequate funding for maintaining the Mobile Harbor ($23.2 million), and funding needed for improvement projects to optimize waterway efficiency. The Corps has deferred $4.0 million in such project funding over the past three years.

The availability of these waterway systems doesn't just benefit Gulf Power Company's fuel procurement program. They significantly contribute to the economic viability and future industrial growth of our service area and the entire region. We believe it is in the national interest to maintain their integrity, and hope you will support their funding.

LETTER FROM WILLIAM CARR, PRESIDENT AND CHIEF OPERATING OFFICER, JIM WALTER RESOURCES, INC.

JIM WALTER RESOURCES, INC.,
Birmingham, AL, February 5, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I would like to thank you for the opportunity to make a statement to your Subcommittee. Please accept this letter as my statement.

The Mining Division of Jim Walter Resources, Inc. currently mines 8 million clean tons of coal per year. Of that amount, nearly 60 percent of our production is exported. All of our export production goes through the Port of Mobile. Our payroll for 2,315 employees last year was in excess of $114,000,000 and taxes withheld and/or paid were in excess of $31,000,000. It is obvious from these facts and figures that this Company relies heavily on our waterways and port facilities and that they are of the utmost importance to this Company, its employees and the economy of the State of Alabama.

I strongly support the Corps of Engineers budget request for $16.2 Million in Operations and Maintenance funds for the Black Warrior-Tombigbee for fiscal year 1998, along with the request for $4 Million for the Corps to undertake projects which have been deferred over the past three years. I also support the appropriation of funds for Mobile Harbor, in the amount of $23.2 Million. Our waterways and port facilities provide economic prosperity to Alabama that is worthy of your support. Further, I support the statements and testimony to be given by Mr. Sheldon L. Morgan, President of the Warrior-Tombigbee Development Association. I believe that the value of improved efficiency and reliability of the Warrior-Tombigbee Waterway and Port of Mobile cannot and must not be underestimated.

The world coal business is at its most competitive level in history. News of any problems, especially transportation and delivery problems, is quickly spread by other coal producers around the world to the buyers to discourage purchases here. A blemish on our delivery record can have devastating, long-term effects from which we might never fully recover. Buyers lost today may never return tomorrow.

Again, thank you for this opportunity to give my comments on this very important matter.

Yours very truly,

WILLIAM CARR,
President and Chief Operating Officer.

PREPARED STATEMENT OF D.R. JORDAN, PRESIDENT, JORDAN PILE DRIVING, INC.

Jordan Pile Driving is a 50 year old heavy marine construction company. Our company has been positively impacted by the Warrior-Tombigbee System and the Port of Mobile.

As you consider the funding needs of the Corps of Engineers, we strongly urge appropriation of at least $16.2 million in support of the operations and maintenance budget request for fiscal year 1998. This is considered to be a minimum figure to meet anticipated expenses and problems.

We additionally support adequate funding for operations and maintenance of the Mobile Harbor. This activity is critical to the growing development of trade within the southeastern United States.

PREPARED STATEMENT OF DAVID G. HOWSON, VICE PRESIDENT-GENERAL MANAGER, RIVER DISTRICT, MARTIN MARIETTA AGGREGATES

The commerce dependent upon the unencumbered navigation of the Warrior-Tombigbee Waterway and the Port of Mobile is a major factor in the economic well being of this region and the nation. Martin Marietta Materials supports the collective efforts of the Warrior Tombigbee Development Association, the U.S. Army Corps of Engineers and other user groups and governmental agencies to improve the efficiency and reliability of the Warrior-Tombigbee Waterway. Transporting products via these waterways is very cost effective, energy efficient and is of vital importance to the commerce of the region.

Our company is the nations second largest producer of aggregate products used in construction and industrial applications. Annually our shipments exceed 1.0 million tons of product over and through the Port of Mobile and the Warrior-Tombigbee water system. This commerce provides jobs and tax revenues in many states and extends to other businesses involved in local towing, handling, stevedoring, trucking and many more industries in our region. Considering positive economic indicators, this trend should grow in the future. Any degradation to the efficiency of this waterway would have a profound negative economic impact on this area. As many as twenty direct jobs would be jeopardized if this means of transportation is not maintained.

It is incumbent upon the U.S. Army Corps of Engineers to maintain and improve these waterways for our economic viability. I fully support and respectfully request that you approve funding for the Corps of Engineers Operations and Maintain Budget for the Black-Warrior-Tombigbee Waterways, fiscal year 1998, of $16.2 million. It is also time to fund projects which have been deferred over the past three years but are vital to the continued improvement of the waterways. This will require additional funding of $4.0 million. This support also includes funding for Mobile Harbor in an amount of $23.2 million.

We urge your support and approval of these vital funds and will follow the budget process with great interest.

PREPARED STATEMENT OF MARK K. KNOY, SENIOR VICE PRESIDENT, MARKETING AND OPERATIONS, MARINE EQUIPMENT MANAGEMENT CORP. [MEMCO]

While making your decision on the appropriations of funds for the Warrior-Tombigbee Waterway, I would like you to please consider the following viewpoint from our company in the barge and towboat boat industry. As you well know, all modes of transportation of interstate commerce are in need of a solid and maintained infrastructure to ensure goods and services are delivered in a timely and secure fashion. The barge industry is by far no exception to this rule. Therefore, MEMCO would like to announce its support of an increase in funding for the further development and continued maintenance of the Warrior-Tombigbee Waterway.

MEMCO has joined the collective effort of the Warrior-Tombigbee Association because of our interest in lowering operational costs, improving safety and increased customer satisfaction. Our company has a vested interest in the waterway as an infrastructure through which we deliver and pick-up all types of commodities such as

wood chips, cement, coal, petroleum-coke, aggregates and fly ash. During the calendar year of 1996, MEMCO was able to generate $3.4 million in operating revenue through the use of this waterway. We have operated and developed an increased customer base on the Warrior-Tombigbee Waterway over the last six years. MEMCO has and will continue to have a long-term interest in the use of this waterway. If the quality of our country's infrastructure, such as the Warrior-Tombigbee Waterway, were to degrade due to a lack of funding, it would indeed have a great limitation on efficiency of MEMCO's operation and all interstate and international commerce originated and destined for this waterway.

Considering MEMCO's vested interest in this waterway we would like to request the Corps Operations and Maintenance budget for fiscal year 1998 to be $16.5. It has also been brought to our company's attention, that the Corps of Engineers needs to receive an additional sum of $4 million for those projects which have been deferred over the last three years such as upland disposal dikes, mooring cells, and long range studies. MEMCO would also like for you to consider the appropriation of funds for Mobile Harbor, in the amount of $23.2 million dollars.

If you would ever have any questions pertaining to our involvement upon the waterway or question our support, please give me a call at 314–519–0500.

LETTER FROM PETER E. HUBBARD, SENIOR VICE PRESIDENT, SALES AND MARKETING, MIDLAND ENTERPRISES, INC.

MIDLAND ENTERPRISES INC.,
Cincinnati, OH, February 10, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development, U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I am writing to express my support for the continued maintenance and improvement of the Black Warrior-Tombigbee Waterway System.

Midland Enterprises Inc. is one of the nation's largest barge lines and is a major user of the Warrior-Tombigbee System. Last year we transported approximately 1,700,000 tons of commodities on this waterway and an additional 2,800,000 tons through the Port of Mobile, including coal, scrap metals, grain and wood chips/lumber. These tonnage's are significant to the economies of the states in that region, from the points of view of both producers and consumers. Barging is a very low cost method of transportation, responsible for moving more than 15 percent of all of the United States total freight for less than 2 percent of the nations total transportation costs, which translates into savings for the consumer, such as lower rates for electricity.

Another important aspect of the Warrior-Tombigbee System is that it provides the only alternative to the Mississippi River to move product to the Gulf Coast. This was extremely important during the drought year of 1988, when the lower portion of the Ohio River was closed for an extended period and the lower Mississippi River was severely restricted for approximately five months. The availability of the Warrior-Tombigbee System allowed us to continue to serve utility and industrial customers and kept those customers from having to shut down operations because they could not receive raw material.

Midland Enterprises Inc. fully supports and recommends appropriation of $16.2 million for operation and maintenance of the Black Warrior-Tombigbee System for fiscal year 1998. Furthermore, we recommend additional funding to permit the Corps of Engineers to proceed with some of the projects that have been deferred over the past three years, which total $4,000,000. These projects include upland disposal dikes, mooring cells and long range studies. All of these funds are necessary to assure that the Warrior-Tombigbee System remains an important part of the Inland Waterway System. Finally, we support an appropriation of funds in the amount of $23.2 million for Mobile Harbor. The Port of Mobile is an integral part of the waterway system, especially as an alternative origin to the Port of New Orleans. Improvement of the Mobile harbor will increase utilization of the Warrior-Tombigbee System overall and generate significant additional monies for the states in this region. We request your support in reviewing and approving these project funding limits for fiscal year 1998.

PETER E. HUBBARD,
Senior Vice President, Sales and Marketing.

PREPARED STATEMENT OF LEON HRABOVSKY, SUPERINTENDENT, MIKE HOOKS, INC.

Mike Hooks Incorporated supports fully the Warrior-Tombigbee Waterway Project because it has provided our company with an average of $4 to $5 million of revenue annually for a number of years. A large majority of this revenue is returned to the community through labor, supplies, equipment, and fuel usage. Our company employs from 50 to 100 employees from the local area during a normal dredging season.

Our company recommends that the estimated $16.2 million in Corps of Engineers O&M budget for fiscal year 1998 be a minimum number for the operation and maintenance of this system. We also recommend that an additional $4.0 million be appropriated to fund projects that have been deferred over the past three years. Additional upland disposal areas are severely needed in our business to improve the cost and efficiency of dredging on the system.

Mike Hooks Incorporated also supports the budget request of $23.2 million for the Mobile Harbor operation and maintenance. The Mobile Harbor and Warrior-Tombigbee Waterway are two necessary links in the water transportation system for the State of Alabama and the surrounding area.

We thank you for your time and consideration in this vital matter.

PREPARED STATEMENT OF R.A. GUTHANS, PRESIDENT, MIDSTREAM FUEL SERVICE, INC.

Midstream Fuel Service, Inc. is an ardent supporter of efforts by the U.S. Army Corps of Engineers to maintain and improve both the Black Warrior-Tombigbee Waterway and the Port of Mobile. These assets are vital to the economic development and prosperity of the regions they serve and are crucial as major components of our nation's transportation infrastructure.

Since completion of the Black Warrior-Tombigbee Waterway in 1984, Midstream has participated in the use of the system and has seen the many benefits that the waterway offers. As an operator of tank barges and petroleum terminals, the impact of the waterway is readily apparent to us through our customers and through contact with the many others who directly or indirectly benefit from the system.

An appropriation of $16.2 million by the U.S. Army Corps of Engineers for the fiscal year 1998 is needed for maintenance and improvement projects of the waterway at a level near that of 1997. Additional improvement projects totaling $4 million have been deferred for the past three years. These projects should now be undertaken due to additional capacity of the Corps. Please carefully review the Black Warrior-Tombigbee Waterway funding request before your committee, realizing that continued improvements to the waterway will one day bring this system to its fullest potential.

The Port of Mobile is an extremely important and vital link to domestic and international trade routes for Mobile, AL and the southeastern sector of our nation. Having supplied petroleum products to the inland and international marine operators, and operating support facilities for the petroleum exploration and production industry, as well as supplying petroleum products to commercial, industrial and retail markets, Midstream is keenly aware of the impact the Port of Mobile has upon the region. We enthusiastically support the appropriation of $23.2 million for maintenance of the port.

Please carefully consider the testimony given before your committee by Charles A. Haun, Chairman of the Warrior-Tombigbee Development Association, and by Sheldon Morgan, President of that association. Midstream Fuel Service, Inc. supports the testimony presented by these gentlemen as representative of those who use the Black Warrior-Tombigbee Waterway and the Port of Mobile.

Thank you for the support offered by your committee in the past. We look forward to continued progress.

PREPARED STATEMENT OF ADOLPH N. OJARD, VICE CHAIRMAN, MARITIME AFFAIRS, MOBILE AREA CHAMBER OF COMMERCE

This statement is presented on behalf of the 2,500 business members of the Mobile Area Chamber of Commerce in support of the fiscal year 1998 operations and maintenance budget request for new funding for the Warrior-Tombigbee Waterway.

Our support for the request of the Warrior-Tombigbee Waterway is predicated on the fact that the cargo moving on the Warrior-Tombigbee Waterway supports the Port of Mobile and many area businesses. One example is the nearly completed $100 million DRI (iron ore) processing plant in Mobile with 75 new jobs. Additional

projects are considering our area, based on the ongoing availability of water borne transportation. Only through our efficient transportation system and reliable waterways can these benefits to local businesses continue to be realized. The $16,200,000 request has been carefully reviewed and is a minimum figure to meet anticipated expenses and problems.

We additionally support adequate funding for operations and maintenance of the Mobile Harbor. This activity is critical to the growing development of trade with the southeastern U.S. and our southern neighbors.

LETTER FROM DEAN WHITE, PORT CAPTAIN, ORSOUTH TRANSPORT CO.

ORSOUTH TRANSPORT CO.,
Mobile, AL, February 18, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I am writing to express my support for the continued maintenance and improvement of the Black Warrior-Tombigbee Waterway System.

Orsouth Transport Co. is one of the largest regional carriers by water in the Warrior-Tombigbee System. Last year we transported approximately 1,700,000 tons of commodities on this waterway and an additional 2,800,000 tons through the Port of Mobile, including coal, scrap metals, grain and wood chips/lumber. These tonnage's are significant to the economies of the states in that region, from the points of view of both producers and consumers. Barging is a very low cost method of transportation, responsible for moving more than 15 percent of all of the United States total freight for less than 2 percent of the nation's total transportation costs, which translates into savings for the consumer, such as lower rates for electricity.

Another important aspect of the Warrior-Tombigbee System is that it provides the only alternative to the Mississippi River to move product to the Gulf Coast. This was extremely important during the drought year of 1988, when the lower portion of the Ohio River was closed for an extended period and the lower Mississippi River was severely restricted for approximately five months. The availability of the Warrior-Tombigbee System allowed us to continue to serve utility and industrial customers and kept those customers from having to shut down operations because they could not receive raw material.

Orsouth Transport Co. fully supports and recommends appropriation of $16.2 million for operation and maintenance of the Black Warrior-Tombigbee System for fiscal year 1998. Furthermore, we recommend additional funding to permit the Corps of Engineers to proceed with some of the projects that have been deferred over the past three years, which total $4,000,000. These projects include upland disposal dikes, mooring cells and long range studies. All of these funds are necessary to assure that the Warrior-Tombigbee System remains an important part of the Inland Waterway System. Finally, we support an appropriation of funds in the amount of $23.2 million for Mobile Harbor. The Port of Mobile is an integral part of the waterway system, especially as an alternative origin to the Port of New Orleans. Improvement of the Mobile harbor will increase utilization of the Warrior-Tombigbee System overall and generate significant additional monies for the states in this region. We request your support in reviewing and approving these project funding limits for fiscal year 1998.

Sincerely,

DEAN WHITE,
Port Captain.

LETTER FROM KEN A. WHEELER, PRESIDENT, R&W MARINE, INC.

R&W MARINE, INC.,
Paducah, KY, February 18, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I am writing to express my support for the continued maintenance and improvement of the Black Warrior-Tombigbee Waterway System.

R & W Marine is one of the largest tramp towing companies in the inland river system This means that R&W is engaged in the business towing barges for many companies, as it does not own any barges itself. A significant number of our cus-

tomers require service to and from both the Black Warrior-Tombigbee system and the Port of Mobile. The tonnage's flowing through these waters are significant to the economies of the states in that region, from the points of view of both producers and consumers. Barging is a very low cost method of transportation, responsible for moving more than 15 percent of all of the United States total freight for less than 2 percent of the nation's total transportation costs, which translates into savings for the consumer, such as lower rates for electricity.

Another important aspect of the Warrior-Tombigbee System is that it provides the only alternative to the Mississippi River to move product to the Gulf Coast. This was extremely important during the drought year of 1988, when the lower portion of the Ohio River was closed for an extended period and the lower Mississippi River was severely restricted for approximately five months. The availability of the Warrior-Tombigbee System allowed us to continue to serve utility and industrial customers and kept those customers from having to shut down operations because they could not receive raw material.

R & W Marine fully supports and recommends appropriation of $16.2 million for operation and maintenance of the Black Warrior-Tombigbee System for fiscal year 1998. Furthermore, we recommend additional funding to permit the Corps of Engineers to proceed with some of the projects that have been deferred over the past three years, which total $4,000,000. These projects include upland disposal dikes, mooring cells and long range studies. All of these funds are necessary to assure that the Warrior-Tombigbee System remains an important part of the Inland Waterway System. Finally, we support an appropriation of funds in the amount of $23.2 million for Mobile Harbor. The Port of Mobile is an integral part of the waterway system, especially as an alternative origin to the Port of New Orleans. Improvement of the Mobile harbor will increase utilization of the Warrior-Tombigbee System overall and generate significant additional monies for the states in this region. We request your support in reviewing and approving these project funding limits for fiscal year 1998.

Sincerely,

KEN A. WHEELER,
President.

LETTER FROM STEPHEN A. FRASHER, SENIOR VICE PRESIDENT, OPERATIONS, RED CIRCLE TRANSPORT CO.

RED CIRCLE TRANSPORT CO.,
Cincinnati, OH, February 18, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I am writing to express my support for the continued maintenance and improvement of the Port of Mobile.

Red Circle Transport Co. is a subsidiary of one of the nation's largest barge transportation companies and provides service to Puerto Rico. The Port of Mobile is a port of call for ConAgra, one of Red Circle's major customers. Products from Mobile are transported to San Juan, Puerto Rico, enhancing the economic viability of both locations. In addition, products from Mobile help sustain the viability of Puerto Rico, an island nation dependent upon cost effective, reliable water transportation service. Barging is a very low cost method of transportation, responsible for moving more than 15 percent of all of the United States total freight for less than 2 percent of the nation's total transportation costs, which translates into savings for the consumer, such as lower rates for food products and electricity.

Red Circle Transport Co. fully supports and recommends appropriation of $23.2 million for Mobile Harbor in fiscal year 1998. In addition, we support the appropriation of $16.2 million for operation and maintenance of the Black Warrior-Tombigbee system for fiscal year 1998. Finally, we recommend additional funding to permit the Corps of Engineers to proceed with some of the projects that have been deferred over the past three years, which total $4,000,000. These projects include upland disposal dikes, mooring cells and long range studies. All of these funds are necessary to assure that the Port of Mobile and the Warrior-Tombigbee System remain important parts of the Inland Waterway System.

We request your support in reviewing and approving these project funding limits for fiscal year 1998. Continued support for improvement of Mobile Bay and the

water systems that support commerce at Mobile will result in a significant economic benefit to the United States and the Caribbean Region.

Sincerely,

STEPHEN A. FRASHER,
Senior Vice President, Operations.

PREPARED STATEMENT OF LAWRENCE L. MERRIHEW, VICE PRESIDENT, REGIONS BANK

The economies of Alabama and the U.S. Gulf Coast are greatly impacted by the Port of Mobile and the inland waterways serving these areas. The Black Warrior-Tombigbee Waterway is also a vital factor in this respect. It serves manufacturing, mining, and the agricultural areas, as well as industrial production facilities in western Alabama. The waterway has served as an economic stimulant for over 100 years and receives periodic improvement; bringing it to the point today, that it is a modern system linking vital areas of the economy.

There are so many vital materials that are shipped on the Black Warrior-Tombigbee System, that its overall impact is sometimes not adequately considered. For instance, most of the coal exported from Mobile is shipped down this very waterway. Therefore, it is important that the amount needed as requested by the Corps of Engineers for Operations & Maintenance (O&M) of $16.2 million, be appropriated for fiscal year 1998. This is a decrease from last year's requested appropriation. This level of funding is necessary to support the day-to-day O&M program, and to continue ongoing channel improvement projects that will maintain the waterway in its current state.

We urge your support of an appropriation of $16.2 million in O&M funds for the Black Warrior-Tombigbee Waterway for fiscal year 1998. We also request support of the appropriation of adequate O&M funds for the Mobile harbor, which this year, is in the amount of $23.2 million.

An efficient and reliable waterway system is important to all of us, and most certainly is a justifiable investment by the federal government. The cost benefit ratio will be matched many times over by the local investment.

PREPARED STATEMENT OF ANDREW A. SAUNDERS, JR., CHAIRMAN, CEO, SAUNDERS ENGINE CO., INC.

The navigable waterways and associated transportation system in the State of Alabama is mature, economical, and successful. In the broadest sense, I ask your support for the appropriate funding for Operation and Maintenance of the Warrior-Tombigbee River system and of Mobile Harbor, because it is a solid infrastructure investment by any measure.

Our system is a rare and valuable link of the international ocean Port of Mobile with a vast inland river network through the Warrior-Tombigbee River and the Tennessee-Tombigbee Waterway. This enormous system has strategic and economic importance at every level of consideration—national, state, and local.

Saunders Engine Company at Mobile, Alabama, is a member of a large number of firms along the system who are service providers to the vessel and barge operators in Alabama's international port and on our river system.

Our company has been part of the maritime community headquartered at Mobile for 38 years. We have over seventy employees who are primarily engaged in this service and we are only part of a network of fuelers, repairers, and suppliers who maintain the large fleet of ships, towboats, barges, and cranes that are utilized in the total system from ocean port to inland terminals.

We ask for your full support of the Corps of Engineer's budget request for Operations and Maintenance in fiscal year 1997. This request for the Warrior-Tombigbee is expected to be level with 1996 and is in the range of $16.2 million. Also, we ask your support to fund in fiscal year 1997 certain specific maintenance projects which are critical to the efficient operation of the waterway, but which have been deferred in the past two years—these total $4 million.

Thank you for your consideration. Of course, our river system is vitally enhanced by the international ocean port of Mobile, Alabama. Therefore, I ask your support of the appropriation for Mobile harbor of $23.2 million.

LETTER FROM JERRY L. STEWART, VICE PRESIDENT, FUEL SERVICES, SOUTHERN COMPANY SERVICES, INC.

SOUTHERN COMPANY SERVICES, INC.,
Birmingham, AL, February 7, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: On behalf of Alabama Power Company, Gulf Power Company, and Mississippi Power Company, I am writing to express our support for the Warrior-Tombigbee Development Association and its president in their efforts before your committee. Because of the importance of the Warrior-Tombigbee Waterway to local, national, and international trade, the Southern electric system joins with the Warrior-Tombigbee Development Association in an effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway.

Alabama Power Company, Gulf Power Company, and Mississippi Power Company have used the Warrior-Tombigbee to transport coal to their respective electrical generating plants at Demopolis, Alabama; West Jefferson, Alabama; Mobile, Alabama; Pensacola, Florida; Sneads, Florida and Biloxi, Mississippi. In 1996, through the use of contracted barge carriers, these companies moved over 7.6 million tons of coal by way of the Warrior-Tombigbee Waterway. All of this coal would have required a longer move down the Mississippi River through New Orleans. The Warrior-Tombigbee Waterway allows the barges to move down the Warrior-Tombigbee River to Mobile and other destinations. The significant importance of this capability to our system is obvious from a transportation flexibility standpoint. Additionally, the Port of Mobile is the hub of the Central Gulf Coast and the continued development of its facilities and support services is critical to the economy of the tri-state area served by the Southern electric system.

Alabama Power Company, Gulf Power Company, and Mississippi Power Company utilize water transportation because of the economic advantage to our millions of customers. Any expenditures for maintenance or upgrading which improve the efficiency and reliability of the waterway will have a positive impact on our customers. At the same time, higher cost resulting from inefficiency or the unreliability of the Warrior-Tombigbee Waterway will have a direct and adverse effect upon our customers.

It is imperative that there be a continuous program for maintenance and upgrading of the Warrior-Tombigbee Waterway channels and locks. We support the proposed budget request for $16.2 million in Operations and Maintenance funds for the Black Warrior-Tombigbee River for the fiscal year 1998. Additionally, we support the earliest completion of the capital projects that have been deferred over the past three years as well as the appropriation of funds for Mobile Harbor in the amount of $23.2 million.

Adequate funding of programs required to maintain the efficiency and reliability of our nations waterways is critical to its superior economic health and welfare. I strongly urge and solicit your support.

Sincerely,

JERRY L. STEWART,
Vice President, Fuel Services.

PREPARED STATEMENT OF JAMES H. DARNLEY, JR., REGIONAL VICE PRESIDENT, PORT OF MOBILE

Stevedoring Services of America ("SSA") is a stevedoring and marine terminal operating company that handles approximately 1.7 million tons of forestry products and 1.5 million tons of bulk cargo (coal) through the Port of Mobile on an annual basis. Here in Mobile, we directly employ 50 people which generates approximately $2.0 million dollars in salaries annually and additionally support approximately 300,000 man hours for four local International Longshoremen Association unions.

SSA fully supports the collective effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway. The waterway is a vital factor in the stevedoring and marine transportation industry and an essential element in the transportation infrastructure at the Port of Mobile. SSA depends upon the waterway as a significant factor in maintaining our base business as well as our future economic development in this area.

Currently, the 1.5 million tons of coal we handle each year through the McDuffie facility is totally dependent upon the waterway. If the efficiency and reliability of the waterway is not improved, it would cause significant reductions in the efficient

handling of that cargo. It is our position the appropriation of near level funding $16.9 million dollars, in O&M funds is imperative and deferred projects totaling $4 million dollars are vital to continuing the improvements year to year.

Additionally, SSA supports the appropriation of funds for maintaining Mobile Harbor. We urge adequate O&M funding for Mobile harbor as maintenance of our harbor is crucial to the Port of Mobile's transportation industry as well as our states' economy.

We strongly urge you to support the Corps' submitted O&M budget for fiscal year 1998 as well as their request for additional capabilities as they are vital to continuing the improvements which ultimately will bring the waterway efficiency to an expected level.

We very respectfully appreciate your consideration of this matter.

PREPARED STATEMENT OF ALVIN P. DUPONT, MAYOR, CITY OF TUSCALOOSA, AL

I am asking that you support the appropriation of $16.2 million for the U.S. Army Corps of Engineer's fiscal year 1998 operation and maintenance of the Warrior-Tombigbee Waterway and Mobile Harbor. I understand that this is the amount in the present budget, which was reduced by 3 percent from last year; and therefore is at minimum level. Please do not reduce this amount.

The Corps has the additional capability to get underway on projects totalling $4,000,000 which have been deferred over the past years. These projects (upland disposal dikes, mooring cells and long range studies) are vital to continuing the improvements year to year which ultimately will bring the waterway efficiency to an expected level. I also support the appropriation of funds in the amount of $23.2 million for Mobile Harbor. I appeal to you to support these projects.

I am certain that the availability of water transportation is critical to our area's manufacturing development. It is therefore important that the river system remain navigable and that projects to upgrade the system be funded and completed.

PREPARED STATEMENT OF WILLIAM P. LEWIS, GENERAL MANAGER, U.S. STEEL GROUP

USX Corporation operations (both steel and mining) rely heavily upon the availability of Alabama's river systems to transport iron ore, coke, coal and finished steel products. This commercially viable river transport system helps USX to be competitive both domestically and internationally.

Our plans call for moving up to 6.4 million tons per year of material over the Warrior-Tombigbee Waterway System during 1997. This is an increase of almost 13 percent from 1996. This could expand even further as we are evaluating the use of imported pig iron.

It is for this reason that we offer our support for the Corps of Engineers in their request for operation and maintenance funds for fiscal year 1998. We feel the Warrior—Tombigbee Waterway System is vital to the continued growth of Alabama and the southeastern United States.

We support the action of the Warrior-Tombigbee Development Association in their efforts to assist the Corps of Engineers.

PREPARED STATEMENT OF T. KEITH KING, P.E., PRESIDENT, CEO, DAVID VOLKERT & ASSOCIATES, INC.

David Volkert & Associates, Inc. (Volkert) is an engineering/architectural/planning firm which employs 400 people and maintains Alabama offices in Mobile, Birmingham, and Gulf Shores. Volkert strongly supports funding for the Corps of Engineers for the Warrior-Tombigbee Waterway and the Port of Mobile for fiscal year 1998.

We believe the proposed $16.2 million for Operations and Maintenance funds for the Black Warrior-Tombigbee is justified since this amount is necessary to cover the known and reasonably expected needs for fiscal year 1998, support the day-to-day O&M program, and continue on-going channel improvement projects. We also support an additional $4,000,000 needed by the Corps to continue the improvements year to year which ultimately will bring the waterway efficiency to an expected level.

Since the City of Mobile's largest industry is her Port and the City's present economy and future progress depends upon her Port, Volkert also supports the $23.2 million funding for Mobile Harbor.

Confidence in the Waterway and its efficiency and modernization are important in bringing much needed new industry to Mobile and to the State of Alabama. Lower operating costs to users of the Waterway and Port of Mobile are essential in obtaining a reasonable balance of the international export market allowing the U.S. to reduce our trade deficit. Increases in shipping and commerce result in opportunities for many companies, similar to Volkert, to obtain business and offer meaningful employment to citizens of the State of Alabama and other parts of the U.S.

Volkert appreciates this opportunity to express our support of Chairman Charles A. Haun and President Sheldon L. Morgan, of the Black Warrior-Tombigbee Development Association, and the testimony to be given by them before the Appropriations Committees of the Senate and House. We are proud to join in the collective effort to improve the efficiency and reliability of the Black Warrior-Tombigbee Waterway and the Port of Mobile.

PREPARED STATEMENT OF ADOLPH N. OJARD, PRESIDENT, WARRIOR & GULF NAVIGATION CO.

I am Adolph N. Ojard, President of Warrior & Gulf Navigation Company. Our company is an active member of the Warrior-Tombigbee Development Association and wholly supports the testimony to be presented by Mr. Sheldon Morgan as President of the Association. I wish to take this opportunity to highlight the impact that the Black Warrior-Tombigbee Waterway and the Port of Mobile has to the success and development of our Company.

Warrior and Gulf is a barge line and terminal operator headquartered in Chickasaw, Alabama, and owns 22 towboats and 240 barges, moving approximately 9 million tons of bulk materials on the Black Warrior-Tombigbee River System, making WGN the dominant water carrier operating in the region. Additionally, we own and operate two bulk and general cargo terminals at Port Birmingham and Mobile, Alabama, providing storage, transloading and intermodal services for truck, rail and water transportation. Our total employment is 235 people.

Warrior and Gulf has provided barge transportation on the Black Warrior-Tombigbee River Systems since 1940 for export and domestic coal, iron ore, coke, import and export steel products, export and domestic wood chips, and several other types of bulk commodities. An efficient and properly maintained waterway system integrated with the Port of Mobile is vital to Warrior and Gulf and its customers. This waterway system has made the entire region world competitors through the reliable, efficient movement of raw materials and finished products both for domestic and overseas consumption. In order to encourage continued economic development along this great waterway we must continue in our efforts to ensure this viable low cost transportation alternative remains in place. The continued efficiency of this waterway is extremely critical to the viability of the industries it services and develops. This waterway system and harbor hold great opportunity for developing trade initiatives with Mexico and South America.

Historically, our shoaling problems vary greatly from year to year dependent upon the length of our high water season (December–April) and the amount of flooding that occurs. The Operations and Maintenance budget has been typically $18–20 million including monies to maintain ongoing channel improvements which are important to the continued safety and efficiency of the waterway system.

We have worked closely with the Corps of Engineers and wholeheartedly endorse their budget request of $16.2 million in O&M funds for the Black Warrior-Tombigbee system for fiscal year 1998.

It is also our understanding that the Corp has additional project capacity in fiscal year 1998. Therefore, we ask that $4.0 million be set aside to fund those projects which have been deferred over the past three years. These projects are important to improve the safety and efficiency of our waterway system.

Lastly, it goes without saying that the maintenance of the Mobile harbor is vital to our waterway and the entire southern region. We, therefore, support the appropriation of $23.0 million to adequately fund Mobile harbor's O&M needs.

Our company and its employees respectfully request your continued support and assistance as your subcommittee considers appropriation of funds for these very important issues concerning the Black Warrior-Tombigbee System, the Port of Mobile and those they serve.

PREPARED STATEMENT OF JACK P. SPECK, MANAGER, U.S. SOUTH EXPORT FIBER SUPPLY AND MARKETING, WEYERHAEUSER

Weyerhaeuser Company has been a long term user, since 1984, of the Black Warrior-Tombigbee Waterway (BWT) and the Port of Mobile. Our manufacturing business is heavily dependent on the efficiency and reliability of barge transportation of woodchips to the Port of Mobile and the loading aboard ocean going vessels for export to Japan, which as you know is favorable to our nation's balance of trade. The business has been one of consistency for many years and now we are in an expansion period whereby the annual volumes will increase from 600,000 tons per year to 1.8 million tons per year by 1998. To remain a reliable stable supplier and competitive in the global market it is imperative that the funding for the U.S. Army Corps of Engineers be maintained as proposed for the BWT. Without the reliability and efficiency of the BWT we cannot continue this business.

The amount proposed by the Corps last year for Operations and Maintenance was $16.7 million. While we do not know the Corps' recommended budget for fiscal year 1998, we do know their plan is to cut at least 3 percent per year nationally, for five years. We desperately need near level funding to ensure the long term viability of the BWT and the competitiveness of this business in the global marketplace. Also the Corps has the additional capability to get underway those projects which have been deferred over the last three years—upland disposal dikes, mooring cells and long range studies that are vital to continuing the efficiency of the waterway at expected levels. These delayed projects totals $4.0 million.

It is also imperative that consistent and level funding be continued for Mobile Harbor. This will ensure reliable shipping at competitive rates. As a result of prior years funding the Port of Mobile enjoys the position of being number one (a market share in excess of 40 percent) for the loading of forest products in the Gulf of Mexico. Therefore, we support the appropriation of funds for Mobile Harbor, in an amount of $23.2 million.

The business is important to the local communities in which we are located and our business supports jobs in the sectors of forestry, manufacturing, inland waterway transportation and stevedoring. This supports in excess of three hundred, direct and indirect, family jobs before our expansion. Without consistent near level long term funding to the BWT and Mobile Harbor we would not be able to support these jobs or the related jobs that will brought on by our expansion. Our business would be noncompetitive and we would be forced to cease operations.

Weyerhaeuser Company strongly urges your support for near level long term funding for the BWT and Mobile Harbor.

PREPARED STATEMENT OF JAN JONES, EXECUTIVE DIRECTOR, TENNESSEE RIVER VALLEY ASSOCIATION

Mr. Chairman, Members of the Committee, thank you for allowing me the opportunity to present written testimony for your consideration. I am Jan Jones, Executive Director of the Tennessee River Valley Association (TRVA), a regional, non-profit, non-partisan, economic development association serving the seven states of the Tennessee Valley region. I respectfully submit this testimony on behalf of the approximate 350 regional members of TRVA.

TRVA members appreciate the wisdom historically of this Committee in funding projects that have served to improve the nation's economy and enhance the quality of life of its people. We understand the problems of dwindling budgets, limited resources and the need to make every dollar count. For that reason, TRVA members have asked me to submit testimony on behalf of the following two issues.

ISSUE ONE: TENNESSEE VALLEY AUTHORITY

This association requests that the Tennessee Valley Authority's fiscal year 1998 funding be maintained at no less than the level provided in fiscal year 1997 which was $106 million. With respect to TVA's recent proposal that no appropriated funding would be requested for fiscal year 1999, it is imperative that fiscal year 1998 funding be maintained at the fiscal year 1997 level to allow an opportunity for the Congress, TVA and the Valley's citizens to evaluate the effects of the proposal and alternatives for program continuance. Each of these programs are so complex and have such tremendous economic impact, it is imperative that careful study and planning be given to potential change.

This association is currently establishing a Study Group comprised of approximately 25 citizens from throughout the Tennessee Valley representing wide-range backgrounds and interests to study the proposal, its effects, possible program alter-

natives, etc. We would like to request the opportunity at a later date to extend this testimony to include the findings and/or recommendations of this study group.

We would, however, like to take this opportunity to highlight specific projects and examples of TVA's work in the Tennessee Valley that are currently made possible through the funding you provide.

Chickamauga Lock project

Chickamauga Lock is located on the Tennessee River just upstream from Chattanooga, Tennessee. The lock was completed and opened to traffic in February, 1940. Soon after completion, it was discovered that a reaction between alkali in the cement and the limestone used to make the concrete caused the concrete to swell, resulting in structural deformation. This reaction process continues. Over the years modifications have been made to the lock because of this reaction, however, these efforts have only assisted in temporary stabilization. Engineering analysis by TVA, Corps and independent consultants shows that these repairs can only keep the lock operational until 2005.

Chickamauga Lock is a vital component of our Nation's interconnected inland waterway. An average of 2.2 million tons of cargo passes through Chickamauga Lock each year. It also has the largest number of lockages on the Tennessee River for recreational traffic. Closure would cut off 318 miles of navigable waterway above Chattanooga from the inland waterway system. This would create tremendous negative impact on economic development, recreation, the environment and national defense. Closure would also curtail accessibility to defense facilities at Oak Ridge, which ship and receive oversize cargoes that cannot move by other modes. Lock closure would result in a payroll loss in upper east Tennessee in excess of $75 million annually. It would also mean the forfeiture of $25 million annually of shipper savings, a rise in regional transportation rates, closure of barge terminals as well as water-dependent industries.

We sincerely request funding for fiscal year 1998 to TVA in the amount of $6.6 million to continue the vital work related to Chickamauga Lock.

Navigation

The Tennessee River navigation system has two major federally managed components that serve both commercial and recreation navigation. These components are the navigation locks and the navigation channels. Both TVA and the Corps of Engineers have responsibilities for operation of the system. As owner, TVA is the lead agency.

TVA's interface with the Corps is defined in an October 1962 Memorandum of Agreement (MOA). TVA has primary responsibility for work of a capital nature on the navigation system and the Corps has primary responsibility for operation and maintenance work. The MOA allows the interchange of these responsibilities to provide for efficient and cost effective use of each agency's resources. Each partner may assist the other when one agency's funds or resources are insufficient to meet responsibilities.

TVA plans and implements capital improvements for the 14 locks at 10 dams and the navigation channel. TVA performs structural inspections of all locks and the structural concrete repair and rehabilitation of lock walls. In addition, TVA provides maintenance of the lock infrastructure and support facilities such as electrical power cables for lock operations, water and waste water systems, and access roads and grounds.

The Corps provides support in daily operation of the 14 locks, handles maintenance of lock gates, valves and operating machinery, as well as major gate, valve and equipment repair. The Corps also performs periodic channel inspections, maintenance dredging to ensure a clear channel and barge mooring facility maintenance.

There have been about 40 subagreements added to the MOA since 1962 to cover specific actions and the transfer of funds for work on the system infrastructure. These have included barge mooring facility construction, electrical power feeder cables and equipment, communications cables, water and waste water systems, and definition of environmental responsibilities.

A separate MOA was implemented in 1991 for design and construction of a new lock at Kentucky Dam. Since the purpose of this project is to resolve problems associated with the Kentucky-Barkley navigation system, it was deemed appropriate for the Corps to seek project authorization and funding.

Water management

TVA manages 48 dams on the Tennessee River and its tributaries, and works to protect and improve water quality and aquatic life in the reservoirs and the watersheds that drain into them.

—TVA controls flooding along 652 miles of the Tennessee River, the Nation's fifth largest river. In 1994, TVA's flood control program prevented an estimated $1 billion in flood damages across the Tennessee Valley. It is also estimated that since TVA's inception their floor control program has saved in excess of $5 billion in devastating flood damages in the area of Chattanooga, Tennessee.
—TVA manages the navigation system used for recreation and for transporting some 48 million tons of cargo annually.
—TVA is recognized as a national leader in developing and applying water aeration technologies.
—TVA provides for watershed protection and improvement, monitors water conditions, pollution, aquatic vegetation growth and mosquito control.

Land management

TVA is responsible for the stewardship of some 250,000 acres along 11,000 miles of shoreline. TVA-owned land includes narrow bands of shoreline used to maintain its system of dams and lakes to control flooding.

—TVA manages 160 public recreation areas offering opportunities for boating, hunting, fishing, hiking, swimming and camping. Visitors to TVA's reservoir system contributes $1.2 billion to the economy of the Tennessee Valley each year.
—TVA land holdings protect and provide for the management of extensive cultural resources, threatened and endangered species, critical wetland habitat and scenic areas, consistent with federal mandates.

Environmental Research Center

TVA's Environmental Research Center in Muscle Shoals, Alabama, is development and implementing technologies and strategies to prevent or reduce pollution. The focus is on solving air-quality problems, developing innovative techniques for waste treatment and protecting water quality. The Center is developing creative waste management technologies, such as bioremediation for PCB's and other toxic wastes; creation of more efficiently constructed wetlands; and working to understand the ozone pollution problem and provide a scientific basis for future regulation. The Center is also helping agrichemical dealers and farmers to prevent surface and groundwater contamination, which is one of the Nation's largest pollution problems. The Environmental Research Center is on target to becoming financially self sustaining by the year 2000.

ISSUE TWO: U.S. ARMY CORPS OF ENGINEERS

We also request the following under the U.S. Army Corps of Engineers fiscal year 1998 budget.

Kentucky lock addition project

Situated near the mouth of the Tennessee River, Kentucky Lock provides the only economical waterway access from the Mississippi, Illinois, Missouri and Ohio River to the Tennessee and Cumberland River Valleys region. Kentucky Lock also acts as the door to a backup system for the inland waterway. In times of drought or flood, an alternate route to the lower Mississippi is available through Kentucky Lock via the Tennessee River to the Tennessee-Tombigbee Waterway and hence to the Gulf of Mexico. This is economically important as well as beneficial to our national defense.

Kentucky Lock's 600 ft. chamber is too small to handle a modern 15-barge two without two lockages. The high traffic on this portion of river and size of the lock greatly increases the processing time giving Kentucky Lock one of the highest transit times in the inland waterways.

Due to Corps workload and funding ceilings, the construction start of Kentucky Lock is projected to be deferred until 2008. Design will be deferred after 1998 until 2008 and project completion will be delayed until 2020.

Although the project is being contracted in Kentucky, the cost of the impacts from the construction delay will be passed along to the people and industries in the Tennessee Valley, Cumberland Valley and the Tenn-Tom Waterway because Kentucky Lock is the gateway into these waterways. Construction delay will result in the following costs:

[In millions of dollars]

Annual increase cost of commodities transported	23.3
Annual electrical power cost	15.4
Inflation cost to construction	203.0
Cost to industry for lock closure for major maintenance and repair (2009)	250.0

The Feasibility report that justified the Kentucky Lock Addition Project was completed in 1992. The project was authorized for construction in the Water Resources Development Act of 1996. The current benefit cost ratio is 2.4 to 1 with a current project cost of $395 million (Oct. 1995) which is a saving of almost $100 million from the feasibility cost. Through fiscal year 1997 Congress will have appropriated $9.5 million dollars for PED. Without funding constraints, construction could start in 1999 and be completed by 2009.

Currently, tows experience an average delay of just over 5 hours to lock through Kentucky Lock. Delays have been increasing each year as the traffic demands increase and will increase to 10 hours by the year 2020.

We sincerely request a $6 million for the Kentucky Lock Addition Project in the U.S. Army Corps of Engineers fiscal year 1998 budget. We also support a total funding for the Nashville District Corps of Engineers in the amount of $96.758 million in fiscal year 1998.

Mr. Chairman, Members of the Committee, we sincerely appreciate the excellent work of this important Committee. We respectfully urge that the Committee give thoughtful consideration when deliberating on funding for the Tennessee Valley Authority and the U.S. Army Corps of Engineers.

Enclosures: Letters from citizens to the Committee

NASHVILLE DISTRICT FUNDING FISCAL YEARS 1998–98

[In thousands of dollars]

	Prior allocations	Fiscal year		Total investment
		1997 appropriated	1998 present budget	
By appropriation:				
General investigations	.....	4,080.5	2,200.0	.....
Construction, general	.....	28,180.1	4,800.0	.....
Operation and maintenance	.....	55,326.0	52,318.0	.....
Flood control and coast emergency	.....	206.0	.....	.....
General regulatory functions	.....	2,183.0	2,500.0	.....
Total district (appropriation funds)	.....	89,975.6	61,818.0	.....
Kentucky lock PED	6,500.0	2,631.0	1,750.0	10,881.0
Kentucky lock feasibility	5,802.0	.....	.....	5,802.0
Total Kentucky lock investment	12,302.0	2,631.0	1,750.0	16,683.0
Total requirement for new construction start at Kentucky lock in fiscal year 1998	.....	.....	6,000.0	.....
Additional capability items:				
Harlan, KY	.....	.....	18,000.0	.....
Williamsburg, KY	.....	.....	4,690.0	.....
Middlesborough, KY	.....	.....	7,200.0	.....
Duck River watershed, TN	.....	.....	200.0	.....
Powell River watershed, VA	.....	.....	200.0	.....
Tenn River and tributaries, NC	.....	.....	200.0	.....
Rock Creek, KY	.....	.....	100.0	.....
North Chickamauga Creek, TN	.....	.....	100.0	.....
Grand total	.....	.....	96,758.0	.....

LETTER FROM JIM GODFREY, VICE PRESIDENT, TENNESSEE FARMERS COOPERATIVE

TENNESSEE FARMERS COOPERATIVE,
Lavergne, TN, March 11, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I am writing in support of the fiscal year 1998 TVA budget request, which includes the Chickamauga Lock on the Tennessee River. The current lock at Chickamauga is rapidly deteriorating and must be replaced by 2005. Failure to replace this lock will effectively abandon 290 miles of navigable waterway above Chattanooga, Tennessee.

Abandonment of the upper Tennessee River would have tremendous negative economic impact on eastern Tennessee, eastern Kentucky, and western North Carolina. The inland waterway system is the most environmentally sound, and cost efficient transportation mode for delivery of many raw materials to, and shipment from this area.

Specifically, my company ships many thousand tons of fertilizer materials to this area by the Tennessee river, and it would create a huge cost increase to area farmers, if use of this waterway was abandoned.

Thank you in advance for your support of this project.

Sincerely,

JIM GODFREY,
Vice President.

PREPARED STATEMENT OF LEAMON LANE, GENERAL MANAGER, R&W MARINE, INC.

R & W Marine would like to express its support of federal funds for the continued operation and maintenance of the Tennessee and Cumberland Rivers, as requested on behalf of TVA and Corps of Engineers fiscal year 1998 budget. R & W Marine is a towing company which operates out of Paducah KY, and also a member of the Tennessee River Valley Association and TCWC. Our operation is dependent upon the successful operation and maintenance of these particular areas.

In addition we are in support of the following specific projects:

—Kentucky Lock Project (Corps) and the Chickamauga Lock Project (TVA).

—Continuation of navigation flood control, water and land resource development on the Tennessee and Cumberland Rivers, and believe that they should be funded at a level that would provide services no less than what has been provided in the past, no matter which agency has the responsibility.

—We support inland waterways navigation as an environmentally sound and cost efficient transportation mode in our region, which ultimately helps in reducing freight rate and promoting trade and development.

—We support the Tennessee and Cumberland Rivers as a vital natural resource, and view their maintenance as paramount in our region, as we are dependent upon successful navigation and flood control. In addition, we are concerned with the community services which are provided from these regions, such as, hydropower generation, recreation, erosion control, agriculture, tourism, fish and wildlife, drinking water, ground and surface water management, water quality, water supply, wet lands, drought management and reservoir management.

—We support sound economic development efforts to improve Tennessee and Cumberland Rivers as a vital transportation link for the Tennessee and Cumberland River Valleys, to export goods to other national and international markets, via the Inland Waterways System.

We again reintegrate our strong support of the fiscal year 1998 Budget and would appreciate any assistance you could provide in this regard.

If R & W Marine can be of any further assistance in demonstrating our support of this matter please feel free to contact me at 1–800–283–4404.

LETTER FROM K. WHEELER, VICE PRESIDENT, ORGULF TRANSPORT CO.

ORGULF TRANSPORT CO.,
Paducah, KY, March 11, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I am writing with regard to fiscal year 1998 budget, with specific regards to the support of navigation and flood control development on the Tennessee and Cumberland Rivers. My company operates tow boats and barges on these rivers, as well as other major navigation streams throughout the country. I am particularly concerned with the administration budget proposal for navigation projects, because of the way in which these projects are being funded in the fiscal year 1998 budget. By shifting budget moneys from the traditional incremental funding status to a fully funded status, the administration budget would in effect, stifle any further development of projects that are critical to our nations waterways.

Of particular concern on the Kentucky river is the funding that is necessary to continue progress on the Kentucky lock addition project and the Chicamauga lock replacement project. Both of these projects are vital to the continued improvements in navigation on the Tennessee river, which in turn is a fundamental basis for the economic development of the entire Tennessee river valley. With this in mind it is inconceivable to me that the administration is not taking steps to see that both projects are fully funded. Nevertheless, this appears to be the case. In the case of Kentucky lock, the administration budget has no funds projected for fiscal year 1998 and in the case of Chicamauga lock, the Tennessee Valley Authority has announced that it is abdicating its responsibility for development of the project. Neither of these moves makes any sense to the citizens of the Tennessee valley nor to the overall economic health of our country.

I am requesting your support for full funding of both the Kentucky lock project and the Chicamauga lock project in the fiscal year 1998 budget, regardless of which authority is finally assigned responsibility for Chicamauga lock.

Yours Truly,

K. WHEELER,
Vice President.

LETTER FROM BOB ARNOLD, COMMISSIONER, FRANKFORT, KY

OFFICE OF THE GOVERNOR,
DEPARTMENT OF LOCAL GOVERNMENT,
Frankfort, KY, March 10, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: As Commissioner of the Kentucky Department for Local Government, I am writing to enlist your support for proposed funding of the Army Corps of Engineers and the Tennessee Valley Authority's fiscal year 1998 budget request.

Specifically, the Commonwealth of Kentucky supports the Tennessee and Cumberland Rivers as a vital natural resource within our region. The Kentucky Lock Project (Corps) and the Chickamauga Lock Project (TVA) portion of these requests promote sound economic development efforts to improve the Tennessee and Cumberland Rivers as a rental transportation link for the Tennessee and Cumberland River Valleys.

I certainly appreciate any support you may provide.

Sincerely,

BOB ARNOLD,
Commissioner.

LETTER FROM FRANK PFLUEGER, PRESIDENT, AG DISTRIBUTORS, INC.

AG DISTRIBUTORS, INC.,
Nashville, TN, March 11, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I am very concerned about, and highly supportive of the fiscal year 1998 TVA budget request, which includes the Chickamauga Lock on the Tennessee River.

The current lock at Chickamauga is deteriorating rapidly, and must be replaced by 2005. Failure to replace this lock will effectively abandon 290 miles of navigable waterway above Chattanooga, Tennessee. Abandonment of the upper Tennessee River would have tremendous negative economic impact on eastern Tennessee, eastern Kentucky, and western North Carolina.

The inland waterway system is a vital natural resource for our region, and its maintenance is required. This waterway system is the most environmentally sound, and cost efficient transportation mode to import and export goods to and from other national and international markets. My company ships many thousands of tons of fertilizer materials to this area via the Tennessee river, and it would create a huge cost increase to area farmers, if use of this waterway was abandoned.

Thank you in advance for your continued support of this project.

Sincerely,

FRANK PFLUEGER,
President.

LETTER FROM FRANK MCKEE

HERMITAGE, TN, *March 13, 1997.*

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR CHAIRMAN DOMENICI: It is respectfully requested that you support full funding of the Tennessee Valley Authority (TVA) and the Corps of Engineers' fiscal year 1998 budget requests. It is vital to the economy of this region that work on the Kentucky Lock (Corps) and the Chickamauga Lock (TVA) projects continue to move forward without delay. These important improvements are essential to the inland waterway system and cost-effective river transportation on the Tennessee River from Knoxville to its confluence with the Ohio River at Paducah, Kentucky.

Thanks to continued support by Congress over the years, the Corps and TVA have provided many multi-state services to this region that could not have been accomplished by local or state governments. The rainfall, the rivers, and even the mosquitoes, cross county and state boundaries and can best be managed on a regional (multi-state) basis by a Federal entity such as the Corps or TVA.

My employment with the University of Tennessee over the past 25 years as a county government consultant has provided an opportunity to be involved with several TVA services and projects that are supported by congressional appropriations. TVA led the way with technical assistance and demonstrations programs for local governments across the 201-county, seven state region. TVA worked with many county governments to establish energy conservation and management programs, rural fire protection and emergency medical services, and solid waste collection and disposal systems to help meet Federal mandates. Some 12 years ago I worked with Wilson County (TN) to obtain TVA's economic development services to select a site for a city/county industrial park. Once the proper location was identified and a preliminary design was sketched by TVA, the City of Lebanon and Wilson County hired an engineer and moved forward with acquisition and development of 250 acres with utilities being furnished by the City of Lebanon. The early assistance by TVA evolved into a combined county-city economic development board interested in expanding local industries and attracting new ones. A dozen new or expanded industries/businesses and over 1200 new jobs can be attributed to TVA's services. There are many similar examples across the TVA region, especially in rural areas.

I am aware that the TVA Chairman is proposing some major changes for the organization that are now under study and evaluation. One change is to eliminate Congressional appropriations for TVA's non-power programs such as navigation and recreation. Personally, I would like to see TVA remain as a unified multi-purpose agency, even if it has to be funded by power revenue. There are about 8 million resi-

dents in the TVA region, so that would amount to approximately one-dollar a month to support the appropriated side of TVA.

I appreciate your hard work and dedicated service as shown on C-SPAN.

Sincerely,

FRANK MCKEE,

LETTER FROM RALPH L. LOVELESS, EXECUTIVE VICE PRESIDENT AND GENERAL MANAGER, MERIWETHER LEWIS ELECTRIC COOPERATIVE

MERIWETHER LEWIS ELECTRIC COOPERATIVE,
Centerville, TN, March 4, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR HONORABLE DOMENICI: Meriwether Lewis Electric Cooperative (MLEC) serves electricity to over 30,500 members in Hickman, Houston, Humphreys, Lewis and Perry counties in middle Tennessee. Along with 158 other electric distributors valley-wide, we purchase our power from TVA. Additionally, we are members of the Tennessee River Valley Association (TRVA).

On behalf of the MLEC board of trustees and employees, I would like to express our support for the fiscal year of 1998 TVA and Corps budget requests. Specifically, we support funding requests for the Kentucky Lock Project (Corps) and the Chickamauga Lock Project (TVA). The Tennessee and Cumberland Rivers are a vital natural resource to our area and we support the maintenance of them. We support the continuation of navigation, flood control and water and land resource development on these rivers at no less than the current level, no matter which agency has the responsibility.

Thank you for your time and attention to this matter.

Respectfully submitted,

RALPH L. LOVELESS,
Executive Vice President and General Manager.

LETTER FROM CHARLES J. SANDERS, III, PRESIDENT, INGRAM MATERIALS CO.

INGRAM MATERIALS CO.,
Nashville, TN, March 5, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SIR: I am a member of the Tennessee River Valley Association and the Tennessee-Cumberland Waterway Council (TRVA/TCWC). I urge you to support full funding of both the TVA and USCE fiscal year 1998 budget requests. These agencies work together to manage the Tennessee and Cumberland Rivers for navigation, flood control, recreation, hydropower, land use, and wildlife management.

As major tributary rivers to the Ohio River, the Tennessee and Cumberland serve as cost effective shipping lanes to and from both domestic and foreign markets. In order to provide this high level of service to our national economy, the infrastructure must be maintained, then expanded as shipping volumes increase. To this end, I support the USCE Kentucky Lock project and the TVA Chickamauga Lock project, both improvements to the Tennessee River infrastructure.

Full funding for the needs of TVA and the Corps will avoid compromising the viability of the Tennessee and Cumberland Rivers as national resources. TVA and the Corps promote growth through waterway management on a cost efficient and environmentally sound basis.

Sincerely,

CHARLES L. SANDERS, III,
President.

LETTER FROM WILLIAM H. HESS, SALES MANAGER, PARKER TOWING CO., INC.

PARKER TOWING CO., INC.,
Tuscaloosa, AL, March 3, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: Parker Towing Company is a major regional barge transportation company operating towboats, barges, and port facilities mainly on the rivers and waterways of the Southeast and Gulf Coast. As a member of the Tennessee River Valley Association, we are proud to be a part of a collective effort to maintain and develop the Tennessee and Cumberland River Systems for commercial navigation. We believe that these waterways are vital transportation links for the Tennessee and Cumberland River Valleys for exporting goods to national and international markets via our inland waterway system.

We support continuation of navigation, flood control, water and land resource development on the Tennessee and Cumberland Rivers at no less than the current level—no matter which agency has the responsibility. We fully support the Corps of Engineers' and the Tennessee River Valley Association's funding request for fiscal year 1998. Additionally, we support funding requests for the Kentucky Lock Project (COE) and Chickamauga Lock Project (TVA). We hope that we can count on your support.

Sincerely,

WILLIAM H. HESS,
Sales Manager.

LETTER FROM JULIAN PRICE, MAYOR, CITY OF DECATUR, AL

CITY OF DECATUR,
OFFICE OF THE MAYOR,
Decatur, AL, March 4, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: The City of Decatur, Alabama, is a member of the Tennessee River Valley Association and hereby requests continued funding on behalf of the TVA and Corps fiscal year 1998 budget. We fully support their testimony request. As Mayor of the City of Decatur, I ask that you please consider the following points concerning this request.

—We support the Corps and TVA fiscal year 1998 budget request.
—We support funding requests for Kentucky Lock Project (Corps) and Chickamauga Lock Project (TVA).
—We support continuation of navigation, flood control, water and land resource development on the Tennessee and Cumberland Rivers at no less than the current level no matter which agency has the responsibility.
—We support inland waterway navigation as an environmentally sound and cost efficient transportation mode in our region, helping to reduce freight rates and thus promoting trade and development.
—We support the Tennessee and Cumberland Rivers as a vital natural resource (and therefore its maintenance) in our region as it pertains to our industries and other vital areas in ways such as: navigation, hydropower generation, recreation and tourism, flood and erosion control, agricultural irrigation, fish and wildlife habitat, drinking water, ground and surface water management, water quality, water supply, wetlands, drought management, and reservoirs management.
—We support sound economic development efforts to improve the Tennessee and Cumberland Rivers as a vital transportation link for the Tennessee and Cumberland River Valleys to export goods to other national and international markets via our inland waterway system.

Again, we ask that you please grant this request for continued funding. Your approval will benefit not only the City of Decatur, but the entire North Alabama region. Thank you for this opportunity to express our support for the Tennessee River Valley Association.

Sincerely,

JULIAN PRICE,
Mayor.

LETTER FROM LOUIS E. PRICE, MAYOR, CITY OF SCOTTSBORO, AL

CITY OF SCOTTSBORO,
Scottsboro, AL, March 3, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR CHAIRMAN DOMENICI: As a member of The Tennessee River Valley Association, the City of Scottsboro, Alabama totally supports the Corp of Engineers and The Tennessee Valley Authority request for funding for the Kentucky Lock Project. We ask the continuation of navigation, flood control, water and land development on the Tennessee and Cumberland Rivers at nothing less than current levels.

We feel that inland navigation is environmentally sound and is a cost effective mode of transportation for our region. The Cumberland and The Tennessee Rivers are seen as vital natural resource and therefore maintenance is imperative.

We request your support of TVA and the Corps fiscal year 1998 funding for the continued operation and maintenance of these vital programs.

Sincerely,

LOUIS E. PRICE,
Mayor.

LETTER FROM LARRY BENNICH, CHAIRMAN, MORGAN COUNTY COMMISSION, DECATUR, AL

MORGAN COUNTY COMMISSION,
Decatur, AL, March 6, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SIR: I am a member of TRVA/TCWC and support their testimony requesting support of federal funds for the continued operation and maintenance of the Tennessee and Cumberland Rivers on behalf of the TVA and Corps fiscal year 1998 budget.

I would also like to give my support of the following:

—Funding requests for Kentucky Lock Project (Corps) and Chickamauga Lock Project (TVA).

—Continuation of navigation, flood control, water and land resource development on the Tennessee and Cumberland Rivers at no less than the current level no matter which agency has the responsibility.

—Inland waterway navigation as an environmentally sound and cost efficient transportation mode in our region, helping to reduce freight rates and thus promoting trade and development.

—Tennessee and Cumberland Rivers as a vital natural resource and its maintenance in our region in its use by industry etc.

—Sound economic development efforts to improve the Tennessee and Cumberland Rivers as a vital transportation link for their River Valleys to export goods to other national and international markets via our inland waterway system.

Very truly yours,

LARRY BENNICH,
Chairman.

LETTER FROM J. RICHARD HOMMRICH, PRESIDENT, VOLUNTEER BARGE & TRANSPORT, INC.

VOLUNTEER BARGE & TRANSPORT, INC.
Nashville, TN, March 5, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR HONORABLE DOMENICI: I am writing to thank you for your ongoing efforts to balance the needs of our country with the tremendous burden of budget constraints.

The needs of our country and its citizens are numerous, but the biggest concern for me and my associates and all taxpayers has to be with the future of the economy and the need for our strong participation in world trade. Much of our foreign exports

and particularly Grain and Grain Products are dependent on water transportation for delivery of these commodities to our ports for export to world markets.

I will try to be brief in listing below the budget items which, in the interest of our important waterways and thus our economy I support and urge that they be given your consideration and support.

1. The budgets of the U.S. Army Corps of Engineers and particularly for ongoing dredging and maintenance of our rivers and waterways.

2. He also supports funding requests for Kentucky Lock Project (Corps) and Chickamauga Lock project (TVA). The TVA has been responsible for these locks since they here constructed 50+ years ago and they should not be allowed to abandon them, after shirking their lawful mandate to maintain and keep them in good condition, without their doing whatever is necessary to bring them up to the standards of all of the other new locks that have been built in the last ten to 15 years.

3. He support the TVA fiscal year 1998 budget request and continuation of navigation, flood control, water and land resource development on the Tennessee and Cumberland Rivers at no less than the current level. This should be the case no matter which agency, The Corps or TVA, has the responsibility.

Our company is very active in serving the needs of shippers and receivers on the Tennessee and Cumberland Rivers. We have been a member of the Tennessee River Valley Association/Tennessee Cumberland Waterways Council and fully support their program and their testimony request.

Sincerely,

J. RICHARD HOMMRICH,
President.

LETTER FROM JOHN B. HERBERT, PRESIDENT, AND THOMAS C. HERBERT, SR., VICE PRESIDENT, HERBERT SANGRAVL CO.

HERBERT SANGRAVL CO.,
New Johnsonville, TN, March 3, 1997.

Hon. PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SIR: We Support the Corps and TVA fiscal year 1998 budget request.

We support funding requests for Kentucky Lock Project (Corps) and Chickamauga Lock Project (TVA).

We support continuation of navigation, flood control, water and land resource development on the Tennessee and Cumberland Rivers at no less than the current level no matter which agency has the responsibility.

We support inland waterway navigation as an environmentally sound and cost efficient transportation mode in our region, helping to reduce freight rates and thus promoting trade and development.

We support the Tennessee and Cumberland Rivers as a vital natural resource (and therefore its manintenance) in our region as it pertains to our industry, municipality or interests in any number of the following ways: navigation, hydropower generation, recreation, flood and erosion control, agricultural irrigation, recreation and tourism, fish and wildlife habitat, drinking water, ground and surface water management, water quality, water supply, wetlands, drought management, reservoirs management.

We support sound economic development efforts to improve the Tennessee and Cumberland Rivers as a vital transportation link for the Tennessee and Cumberland River Valleys to export goods to other national and international markets via our inland waterway system.

Sincerely,

JOHN B. (JACK) HERBERT,
President.

THOMAS C. HERBERT, SR.,
Vice President.

PREPARED STATEMENT OF DONALD G. WALDON, ADMINISTRATOR, TENNESSEE-TOMBIGBEE WATERWAY DEVELOPMENT AUTHORITY

The Tennessee-Tombigbee Waterway Development Authority is pleased to have this opportunity to submit its views and recommendations concerning funding for

water and related programs in fiscal year 1998 for consideration by you and your committee.

The Authority is an interstate compact, comprised of the states of Alabama, Kentucky, Mississippi, and Tennessee, established to promote the Tennessee Tombigbee Waterway and its economic and trade potential.

We are most concerned about the Administration's budget for the Corps of Engineers now before your Committee. For example, it is nonsensical to propose cutting funds needed to properly maintain projects already completed and in operation. These proposed cuts in the Corps' O&M program, if not restored, will reduce the public benefits of these investments and will eventually result in structural deterioration of the affected projects.

Tenn-Tom Waterway Funding.—The most irresponsible part of the proposed budget for the Corps is the recommended 29 percent cut in the waterway's O&M funding, more than for any other waterway. This drastic reduction will not provide sufficient funds to operate the project without seriously reducing, if not eliminating, its commerce and other benefits. We respectfully implore you and your committee to fund the maintenance of the Tenn-Tom in 1998 at about the current level of funding or $23 million.

Kentucky Lock.—The existing 50-year-old lock at Kentucky Dam on the Tennessee River is one of the worst bottlenecks on the entire inland waterway system. The lock can not accommodate current commerce causing delays of an average of five hours to transit the antiquated structure. These costly delays to shippers are expected to double as commerce grows.

The Administration's budget proposes to delay construction of the new 1200-foot lock at Kentucky Dam until 2008 or later. Given the importance of this navigational improvement to the nation's waterway system, this plan is shortsighted and unacceptable. The Authority recommends the $6 million be approved for the Kentucky Lock which will permit the Corps to start construction of this much needed facility in 1998.

Tennessee Valley Authority.—We are most concerned about the potential adverse impacts of the TVA Chairman's unexpected recommendation to not seek federal funds after 1998 will have on the Tenn-Tom region if approved by the Congress. TVA has been the dominant agency for resource development is this region for the past 60 years. To relinquish these responsibilities suddenly with little or no thought or planning for this transition is unconscionable.

The Authority does not believe that such a wide sweeping change in this agency's fundamental responsibilities should be consummated by the budget process. Such drastic changes should only be effectuated by legislative amendments to TVA's organic act. This legislative process will ensure input from the public affected by the elimination of these federal services and that those programs proposed for transfer to other agencies or eliminated are more carefully evaluated.

Again, we thank you for the opportunity to express our views on these most important issues affecting our region.

PREPARED STATEMENT OF FOB JAMES, JR., GOVERNOR, STATE OF ALABAMA

Thank you, for the opportunity to provide our views concerning the Federal water resources activities and projects in Alabama. I join with the Tennessee-Tombigbee Waterway Development Authority; the Warrior-Tombigbee Development Association; the Coosa-Alabama River Improvement Association; the Tri-Rivers Waterway Development Association; the Tennessee River Valley Association and others in support of the continuation of Federal water resource projects in Alabama.

Our state and Nation have been blessed with water resources which lend themselves to the development and use for the benefit of our citizens. Water resource developments in Alabama include: the deep harbor and extensive port facilities at the Port of Mobile, providing export opportunities for the region and nation's products; the Tennessee-Tombigbee Waterway providing a vital connecting link to the inland waterway system and the heartland of our nation; the Warrior-Tombigbee Rivers waterway providing opportunities to utilize our abundant coal resources for our domestic use and export of steel, pipe, and other products; the Coosa-Alabama and the Chattahoochee-Apalachicola waterway providing the opportunity for development, transportation of natural resources, agricultural and forest products; the Tennessee River waterway providing a vital transportation link in the Tennessee River Valley of Alabama; and the Gulf Intracoastal Waterway providing a vital waterway link to the ports of the Gulf of Mexico.

All of the waterways in Alabama are connected to and are an integral part of, our national inland waterway transportation system providing a conduit for the economical and safe movement of commerce.

I respectfully request your consideration and assistance by providing the Federal funding necessary for the full time operation of the Federal waterway facilities and projects in Alabama. This Federal support is necessary to ensure the continuation of these projects and to allow for use of these important facilities and supporting facilities, both public and private. The Federal funding, an essential element, represents only a portion of the investment and commitment necessary to utilize these resources. A combination of local investment, both private and public, is also necessary to gain benefits for our citizens and nation.

In addition to my support of the inland waterway system, it is my pleasure to provide the Subcommittee with an up-date on a regional water resource conflict between Alabama, Florida, Georgia and the Corps of Engineers. On January 3, 1992, the states of Alabama, Florida, Georgia and the U.S. Army Corps of Engineers signed a Memorandum of Agreement (MOA), concerning interstate water resource issues in the Alabama-Coosa-Tallapoosa (ACT) and the Apalachicola-Chattahoochee-Flint (ACF) River Basins. This agreement which will terminate on December 31, 1997. The MOA, temporarily set aside the interstate dispute between the parties, while Alabama, Florida, Georgia and the Corps of Engineers jointly participate in the ACT/ACF Comprehensive Water Resources Study. This study will provide information which will assist in an understanding of the capabilities of the water resources to meet the forecast needs of the region for the foreseeable future. It is also providing tools to evaluate water management options to meet future demands with the finite water resources.

Recently the states (Alabama, Florida and Georgia) and the Federal government (represented by the Justice Department) completed negotiations on the formation of two interstate compacts, one for the Alabama-Coosa-Tallapoosa Basin and another for the Apalachicola-Chattahoochee-Flint Basin. Both Alabama and Georgia have now completed state ratification of the compacts and Florida is currently considering the ACF compact, with passage expected shortly. Soon the proposed compacts will be forwarded to Congress for consideration and ratification. Although much work remains, this is a significant step forward and the Subcommittee's past support has been instrumental in this very positive step toward resolution of these interstate water resource issues.

With the continued endorsement of the Subcommittee, in providing the funding necessary for the Federal water resources projects in Alabama, I believe we can successfully address the complex issues facing us and best utilize these water resources to the benefit of the Nation.

Thank you, and the other members of the Subcommittee, for your support of the Federal water resource projects and activities in Alabama and the Nation.

LETTER FROM SARA PEEBLES, DIRECTOR, INDUSTRIAL BOARD OF PICKENS COUNTY, AL

INDUSTRIAL BOARD OF PICKENS COUNTY,
Carrollton, AL, March 18, 1997.

Hon. PETE DOMENICI,
Chairman, Appropriations Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I am writing to express concern regarding the proposed 29 percent cut in funding for operation and maintenance of the Tennessee-Tombigbee Waterway for fiscal year 1998.

Pickens County, Alabama is fortunate to have the waterway running through its boundaries. I cannot overstate the importance of the Tennessee-Tombigbee Waterway to the economic development of the rural, agriculture-oriented area served by this waterway. The impact it has on commerce as well as recreation and tourism is crucial.

All the citizens of Pickens County join me in respectfully requesting your Appropriations Subcommittee on Energy and Water Development to restore the appropriation for operation and maintenance of the Tennessee-Tombigbee Waterway to at least $23 million in fiscal year 1998.

Thank you for your consideration.

Sincerely,

SARA PEEBLES,
Director.

PREPARED STATEMENT OF DAVID J. TARASEVICH, PRESIDENT AND CEO, TUSCALOOSA STEEL

I was very disappointed to learn of the President's proposed budget of $16.2 million versus the requested $23 million by the Waterway Development Authority for the operation and maintenance of the Tennessee-Tombigbee Waterway during the fiscal year 1998. This 29 percent reduction is extremely excessive and will drastically affect the waterway and its ability to generate benefits.

When applied across the board these cuts will have a negative impact on commercial navigation. Maintenance dredging to maintain authorized channels for barge traffic will be drastically reduced, as well as public access to recreational facilities, some of which will likely be closed. Also wildlife habitat will be reduced to a caretaker status.

Tuscaloosa Steel Corporation is a heavy user of the Tenn-Tom Waterway System. We barge into our plant approximately 300,000 tons of scrap; 350,000 tons of direct reduced iron pellets; and 50,000 tons of pig iron on an annual basis. Outbound shipments over the waterway consist of 100,000 tons of finished products annually.

We solicit your support for the $23 million appropriation as supported by the Waterway Development Authority to continue regular operation and maintenance of this system.

PREPARED STATEMENT OF WAYNE MEUNIER, PORT DIRECTOR, PADUCAH-MCCRACKEN COUNTY RIVERPORT AUTHORITY

The Paducah McCracken County Riverport Authority strongly opposes the Clinton Administration's proposed 26 percent cut in funding for operation and maintenance of the Tennessee-Tombigbee Waterway in the fiscal year 1998. This cut, if implemented, would not only affect those who are located on the Tenn-Tom, but would adversely affect shippers and consumers throughout the Inland Waterway System.

Our terminal facility has enjoyed an increase in domestic, import and export product handling since the Tenn-Tom was opened in 1984. We feel markets have opened up for a variety of products and services which rely heavily on the Tenn-Tom and positive economic development has been realized along its route through Alabama, Mississippi, and Tennessee.

We encourage your committee to restore the appropriation for fiscal year 1998, to at least $23 million. This would allow this $2 billion investment to operate in the manner for which it was intended.

Additionally, we request Congress to appropriate $6 million to begin construction, next year, of the proposed new lock at Kentucky Dam. The current lock, with its size limitations creates delays of barge traffic to and from the Tenn-Tom. It is imperative the new lock project begins and does not remain an obstacle to further economic growth along the Tenn-Tom corridor.

Thank you for your favorable consideration in both matters.

PREPARED STATEMENT OF GARY K. DOOM, DIRECTOR, MARKETING AND TRANSPORTATION, RECO TRANSPORTATION, INC.

I am very concerned over the proposed reduction in funding for the operation and maintenance of the Tennessee-Tombigbee Waterway in the President's proposed budget for fiscal year 1998. If the President's inadequate recommendation of $16.2 million is approved by congress, the waterway and its ability to generate benefits will be drastically affected.

Our company shipped approximately 750,000 tons of crushed stone down the waterway in 1996 to serve coastal markets with economically priced construction aggregates. This tonnage is expected to rise to 1.1 million tons by 1998.

Funding should be restored to a level of $23 million or about the current level. Without these funds, it will be impossible to maintain authorized channel dimensions for barge traffic and our tows must be diverted to the Mississippi River adding nearly $2 million to our annual transportation costs by 1998. This increase ultimately would be borne by the consumer. Additionally, recreational facilities and wildlife habitat will be adversely impacted.

I also support a $6 million appropriation to initiate construction of the proposed new lock at Kentucky Dam. This 50 year old lock is totally inadequate to accommodate growing commerce. Delays are adding significant dollars to transportation costs.

I appreciate your consideration and assistance. Please call on me if I can provide further information or help in any way.

PREPARED STATEMENT OF R. TODD VANDERPOOL, PRESIDENT, COLUMBUS, DEPOSIT GUARANTY NATIONAL BANK

The proposed level of funding for the operation and maintenance of the Tennessee-Tombigbee Waterway for the next fiscal year is very disappointing.

A reduction in funding was expected, but a proposed decrease from $22.6 million to $16.2 million is unreasonable. This 29 percent reduction for Tenn-Tom is extremely excessive compared to a 5 percent cut for the Corps' entire O&M program.

Since the Tenn-Tom met or exceeded the performance thresholds established by the Corps' O&M Cost Reduction Task Force, the reduction in funding for the waterway is difficult to comprehend. However, the Tenn-Tom has all ready sustained a much greater funding cut than those projects that failed these performance tests, causing even greater confusion about the budget recommendation.

Lowndes County and the Eastern counties in Mississippi have greatly benefitted from the economic impact that this waterway provides. The destruction of this asset through inadequate funding will, as a result, have a deleterious effect on our growth and development.

PREPARED STATEMENT OF THOMAS E. DAY, SECRETARY, TENNESSEE TOMBIGBEE WATERWAY DEVELOPMENT COUNCIL

As current Secretary of the Tennessee Tombigbee Waterway Development Council, I would like to make the following plea:

1. Under the President's current budget, funding for O&M on the Tenn-Tom Waterway has been cut approximately 30 percent. We feel that the O&M budget should be restored to the approximate level of fiscal year 1997 at $23,000,000. There are already approximately $2.5 million of O&M that has been deferred for fiscal year 1997. With the current flooding that is occurring in the South, an actual increase in O&M may be needed. This $2 Billion investment is very important to our area, not only as a means of shipping, but from a recreational standpoint.

2. It is very important that Congress appropriate $6 million to begin the construction of an additional lock at Kentucky Dam. The current lock is already very congested. In the near future, major maintenance will have to be performed on the lock, causing two six-month closures. If construction begins now on the new lock, it could be completed before the maintenance is required.

Please give these two matters your consideration.

PREPARED STATEMENT OF WILLIAM H. DYER, PRESIDENT, TENNESSEE VALLEY TOWING, INC.

I wish to solicit your support for continued funding of the Tenn-Tom Waterway and the additional lock at Kentucky lock. Specifically that is for $23 million for the Tenn-Tom Waterway for 1998 and $6 million to start construction on Kentucky lack.

Our waterway infrastructure is of utmost importance to our continued progress and has proven to pay big dividends. The Tenn-Tom Waterway (although it has been unjustly maligned) actually has worked wonderfully as an economic development effort. The Tenn-Tom Corridor is going great guns and appears to have a very bright future and will pay back the tax dollars spent in spades. Kentucky lock is already at full capacity, which is proof of the Tennessee Valley's growth and vitality and the need for a new lock will be desperate by the time it could be built. Not to build the new lock would be the equivalent of girdling a flourishing tree.

Please use your influence to keep our river infrastructure producing dividends to the whole Country.

PREPARED STATEMENT OF CHARLES A. HAUN, EXECUTIVE VICE PRESIDENT, PARKER TOWING COMPANY, INC.

My name is Charles A. Haun and I am Executive Vice President for Parker Towing Company of Tuscaloosa, Alabama.

We are a full service marine transportation company operating a fleet of boats and barges and twelve ports on the southern portion of the U.S. Inland Waterways System. We are involved in the transportation of all types of commodities including coal, coke, ores, stone, forest products, steel, and manufactured products. We have been in operation for over fifty years.

Parker Towing Company endorses and supports fully the efforts of the Warrior-Tombigbee Development Association to improve the overall operation of this vital

waterway system. The Warrior-Tombigbee System and the Port of Mobile are of great importance to our company and the industries we serve. Proper and adequate funding of the waterway project will ensure that more industries can rely on this energy efficient delivery system. The regions' employment and economic well-being could be adversely affected to a great degree should the efficiency of the waterway be degraded.

As a member of the Warrior-Tombigbee Development Association, Parker Towing Company emphatically supports an appropriation of $16.2 million for the Corps of Engineers for operation and maintenance of the Warrior-Tombigbee System for fiscal year 1998 and additional capability funding of $4.0 million for a total of $20.2 million. In addition, we support the Corps' request for operation and maintenance funds for Mobile Harbor in the amount of $23.2 million.

LETTER FROM CARLTON J. MELTON, VICE PRESIDENT, SSA MISSISSIPPI RIVER SYSTEM

SSA MISSISSIPPI RIVER SYSTEM,
Mobile, AL, March 10, 1997.

Hon. PETE DOMENICI,
Chairman, Appropriations Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR CHAIRMAN DOMENICI: This letter is in response to cuts in the fiscal year 1998 Operation and Maintenance budget of the Tennessee-Tombigbee Waterway. It is our understanding that President Clinton has recommended to Congress that the funding be at $16.2 million. This level of funding will have a drastic negative effect on the waterway and its ability to generate benefits.

Our company has been actively operating on the Tennessee-Tombigbee at Columbus, Mississippi, for over ten years. This one facility currently employs 15–25 people on a full-time basis and we are in the process of expanding our operations to increase this number to 40–50 people. Considering the support industries and connecting links of the logistics chain, our business in Columbus affects approximately 1,000 people. The proposed cuts seriously endanger the ability of the waterway to generate these type jobs and the flow of commerce currently being enjoyed on the waterway.

SSA proposes that the funding level remain at the current level, or at least $23 million. As Americans, we thoroughly understand that it is our duty to do what we can to reduce the national debt. However, considering the jobs and money spent on this project initially, it seems imprudent to allow a few million dollars to endanger the jobs and commerce currently being realized on the Tennessee-Tombigbee Waterway.

Thanking you in advance for your consideration to maintain the current O&M level funding on the Tennessee-Tombigbee Waterway for fiscal year 1998, I remain.

Sincerely yours,

CARLTON J. MELTON,
Vice President.

LETTER FROM CHARLEIGH D. FORD, JR., EXECUTIVE DIRECTOR, COLUMBIA-LOWNDES ECONOMIC DEVELOPMENT ASSOCIATION

COLUMBUS-LOWNDES ECONOMIC DEVELOPMENT ASSOCIATION,
Columbus, MS, March 13, 1997.

Hon. PETE DOMENICI,
Chairman, Appropriations Subcommittee on Energy and Water Development,
U.S. Senate, Washington DC.

DEAR SENATOR DOMENICI: I am writing you with regards to our concern for the proposed funding of the Tennessee-Tombigbee Waterway for the fiscal year 1998. It is our understanding that the Clinton Administration is proposing a drastic cut in the funding for maintenance and upkeep on the waterway. In our opinion, should this cut be implemented, the Tennessee-Tombigbee Waterway would be drastically diminished as an effective economic development tool for this area.

Our organization is charged with the responsibility of industrial development for Columbus and Lowndes County area. We are fortunate to have the Tennessee-Tombigbee Waterway running through our county and the headquarters of both the Corps of Engineers' offices and the Tenn-Tom Waterway Development Authority located here. We are very much aware of the economic impact this waterway has on

our area and certainly would not want anything to happen to the overall effectiveness of this major transportation facility.

In our economic development presentations, our transportation assets are very important. Of course, a major part of the transportation offerings here is the ability to ship by barge on the Tenn-Tom Waterway. If that is taken away or diminished to the point that it is no longer a viable option to shippers and manufacturers, then we lose a tremendous advantage that we have begun to enjoy in this region.

For these reasons, we strongly encourage your Appropriations Subcommittee on Energy and Water Development to restore the appropriation for the operation and maintenance of the Tennessee-Tombigbee Waterway in fiscal 1998 to at least $23 million.

I know I join with the many communities and organizations that benefit from the Tenn-Tom Waterway in respectfully requesting your consideration on this matter. Should you desire additional information or would like for any of us to come and testify before your committee, we would be glad to do so.

Sincerely,

CHARLEIGH D. FORD, JR.,
Executive Director.

PREPARED STATEMENT OF TED MOORE, EXECUTIVE DIRECTOR, HUMPHREYS COUNTY E.D.C.

Humphreys County, Tennessee is a small rural community of 16,000 citizens located along the Tennessee River, approximately 65 miles west of Nashville. In fact, our entire western boundary is the Tennessee River. Several major employers are located in this area and these employers are dependent on river transportation.

In the early 1980's a large aluminum plant employing 1,200 workers closed, sending our community into a depressed county status. Our unemployment rate rose to a high of 25 percent. Only recently Tennessee removed Humphreys County from their listing as a depressed county. However, our unemployment is still in double digits, (approximately 12 percent).

Major capital projects are being planned or are in process by river dependent industry that will help bring our economy back to an acceptable level. One of these projects is a public port. Our county is fortunate to have river, rail and interstate highway (I–40) located within its boundary. We are the only county in the region with these assets.

If the Tennessee-Tombigbee recommended budget for 1998 of $23 million is lowered to the proposed level of $16.2 million, transportation and recreational activities could be drastically affected. It is crucial that the Tenn-Tom be operated and maintained at proper levels to insure commercial navigation and public access to recreational facilities.

Even though we are a small rural community, our existing industry produces goods distributed in excess of seventy foreign markets. River transportation and the Tenn-Tom are important for access to these markets.

With proposed dismantling of TVA and excessive cuts in Tenn-Tom's budget to the point of affecting usage, the rural waterway communities and industry in mid-America appear to be under seize by our Federal government.

I applaud the effort of our elected officials to balance the Federal budget but let's get rid of the waste first.

LETTER FROM LAWRENCE L. MERRIHEW, VICE PRESIDENT, REGIONS BANK

REGIONS BANK,
Mobile, AL, March 17, 1997.

Hon. PETE DOMENICI,
Chairman, Appropriations Subcommittee Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I'm writing concerning the operation and maintenance of the Tennessee-Tombigbee Waterway for the next fiscal year. It's my understanding the waterway has suffered a drastic decrease from the current level of funding of $22.6 million to $16.2 million in fiscal year 1998. This amounts to a 29 percent deduction, and is obviously outside the O&M budget cut of 5 percent.

When we began constructing this waterway, numerous studies were done to prove the cost-benefit ratio. The waterway has now proven its benefit to the nation, and in fact, just this past year, reached nine million tons. Every year, the tonnage increases, as does waterway dependent employment. Now we see a great increase in

tourism related industries, and continued conservation of the wildlife habitat even further enhances the value of this great asset.

There's no question, reduced funding will have a very negative impact on this region's economy. We employ you to please consider level funding, or no more than a 5 percent decrease, as paralleling the O&M budget. We sincerely appreciate your diligence and efforts to utilize our tax dollars efficiently, and appreciate your consideration of this plea.

Respectfully yours,

LAWRENCE L. MERRIHEW,
Vice President.

PREPARED STATEMENT OF H.P. DORLON, JR., REGIONAL MANAGER, SALES AND OPERATIONS, VULCAN MATERIALS CO.

I am very concerned over the proposed reduction in funding for the operation and maintenance of the Tennessee-Tombigbee Waterway in the President's proposed budget for fiscal year 1998. If the President's inadequate recommendation of $16.2 million is approved by congress, the waterway and its ability to generate benefits will be drastically affected.

Our company shipped approximately 750,000 tons of crushed stone down the waterway in 1996 to serve coastal markets with economically priced construction aggregates. This tonnage is expected to rise to 1.1 million tons by 1998.

Funding should be restored to a level of $23 million or about the current level. Without these funds it will be impossible to maintain authorized channel dimensions for barge traffic and our tows must be diverted to the Mississippi River adding nearly $2 million to our annual transportation costs by 1998. This increase ultimately would be borne by the consumer. Additionally, recreational facilities and wildlife habitat will be adversely impacted.

I also support a $6 million appropriation to initiate construction of the proposed new lock at Kentucky Dam. This 50 year old lock is totally inadequate to accommodate growing commerce. Delays are adding significant dollars to transportation costs.

I appreciate your consideration and assistance. Please call on me if I can provide further information or help in any way.

PREPARED STATEMENT OF W.R. MCKINZEY, JR., MAYOR, CITY OF ALICEVILLE, AL

The City of Aliceville is very disappointed to learn that there is a proposed cut in funding for the Tennessee-Tombigbee Waterway for the next fiscal year. This will cause a great hardship on our area.

We have located in our area four ports and four recreation areas which employ a large number of persons. In addition, the largest RV Park on the river is located in Pickensville, as well as another large RV Park. The Tenn-Tom Visitor Center is located in Pickensville. A Marina is located on The Aliceville Lake just north of the Tom Bevill Lock and Dam.

There is a tremendous amount of fishing by the general public and numbers of fishing tournaments are held on the river each year. When these people come to the county and cities they spend many dollars which helps the local economy. In addition to fishing, there is lots of hunting on and around the river.

There are hundreds of boats of all sizes that use the river and there is one of the largest boat dealership in the State of Alabama located in Pickensville that would not be here without the river.

The recreation aspect of the river alone is worth the entire cost of building and maintaining the river.

There are also hundreds of houses along the waterway and are directly there as a results of the river. Most of these houses are of the more expense type and help the tax base tremendously. This has caused the population of the county and cities to increase resulting in store openings or reopenings.

Another benefit of the river is flood control. In the last 12 years or so we have had only three floods and these were all in one year in a period of about 3–4 months.

It will be very detrimental in many ways for less funding of the Tenn-Tom Waterway. As stated above the river is of a great benefit to our area and we are sure the same is true for the entire length of the river.

Please do everything in your power to help in not reducing the amount of funds needed to operate the waterway.

LETTER FROM JIMMY FANNON, MAYOR, CITY OF COLUMBUS, MS

CITY OF COLUMBUS,
Columbus, MS, March 17, 1997.

Hon. PETE DOMENICI,
Chairman, Appropriations Subcommittee on Energy and Water Development, U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I am writing you with regards to our concern for the proposed funding of the Tennessee-Tombigbee Waterway for the fiscal year 1998. It is our understanding that the Clinton Administration is proposing a drastic (29 percent) cut in the funding for operation and maintenance on the waterway. In my opinion, should this cut be implemented, the Tennessee-Tombigbee Waterway would be drastically diminished as an effective economic development tool for this area.

We are fortunate to have the Tennessee-Tombigbee Waterway running through our county and the headquarters of both the Corps of Engineers' offices and the Tenn-Tom Waterway Development Authority located here. We also have a paper manufacturing company, a class A port facility and a chemical company that has either located or expanded in our area as a result of the availability of the Tenn-Tom Waterway. We are very much aware of the impact this waterway has on our area and certainly would not want anything to happen to the overall effectiveness of this major transportation facility.

A major part of the transportation offerings for our community is the ability to ship by barge on the Tenn-Tom Waterway. If that is taken away or diminished to the point that it is no longer a viable option to shippers and manufacturers, then we lose a tremendous advantage that we have begun to enjoy in this region.

For these reasons, we strongly encourage your Appropriations Subcommittee on Energy and Water Development to restore the appropriation for the operation and maintenance of the Tennessee-Tombigbee Waterway in fiscal year 1998 to at least $23 million.

I know I join with the many communities and organizations that benefit from the Tenn-Tom Waterway in respectfully requesting you consideration on this matter. Should you desire additional information or would like for any of us to come and testify before your committee, we would be glad to do so.

Sincerely,

JIMMY FANNON,
Mayor.

PREPARED STATEMENT OF JOHN B. HERBERT, PRESIDENT, AND THOMAS C. HERBERT, VICE PRESIDENT, HERBERT SANGRAVL CO.

We request appropriation of $23 million for the operation and maintenance of the Tennessee-Tombigbee Waterway in fiscal year 1998. Our company depends on commerce going and coming on the Tennessee-Tombigbee Waterway from the Tennessee River.

We also request the appropriation of $6 million to start construction of the proposed new lock at Kentucky Dam.

Our company depends on the Tennessee-Tombigbee Waterway and Kentucky Lock for half of our business. Thirty six employees at our company ask you to save their jobs.

PREPARED STATEMENT OF GREGORY WOODELL, PRESIDENT, AMERICAN SHORE AND BEACH PRESERVATION ASSOCIATION

AMERICA'S COASTAL HERITAGE

Beaches are a vital part of American's heritage from "sea to shining sea." As President of the American Shore and Beach Preservation Association, I am speaking for countless Americans who want America's beaches preserved and maintained as a national asset.

America's beach heritage is now at risk because the Administration threatens to walk away from the Federal government's traditional role protecting American lives and property from hurricane and storm disaster. More people have died in the United States from coastal hurricane flooding than any other natural disaster. Ironically, loss of America's protective beaches is largely caused not by natural forces but by Federal navigation, inland flood control, and water-supply projects. For example, peer-reviewed studies by Professor Robert Dean, University of Florida, show that

80–85 percent of Florida's erosion is caused by Federal navigation jetties interrupting natural longshore sand flow and also by dredged-material disposal beyond the littoral zone. Other studies show that dams built for inland-flood control and water supply in southern California have impounded the sand that naturally flows to the coast and maintains beaches. Similarly, Federal dams on the east coast are impounding vast quantities of sand that would naturally maintain east-coast beaches. Many people have heard that the tremendous erosion problems of Egypt's Nile delta are caused by the high Aswan dam impounding sand, but are unaware that Federal dams in America produce the same problem, but at a much larger scale.

If the Federal government successfully turns its back on the beach-erosion problems it largely creates, I predict the court system will be inundated with lawsuits to force the Federal government to mitigate erosion damages it produces. Currently, most local and state governments and individuals are waiting to see whether the Federal government is going to walk away from its obligations. A few lawsuits have been filed such as one recently in Browared County, Florida. If these suits are pressed and are successful, the Federal government may face beach-erosion problems alone without its current coastal state and local cost-sharing partners.

The current administration policy on coastal flooding and storm-damage is a policy of armoring and destroying America's beaches. The only way a coastal community can obtain the Federal flood-control assistance available to all other Americans is to armor its beaches since the Administration supports armoring for coastal flood-damage reduction, but not beach nourishment.

I would like to submit for the record economic studies that show travel and tourism is the Nation's leading industry, employer, and earner of foreign revenue. Beaches are the Nation's leading tourist destination with 85 percent of all tourist revenues coming from coastal states. Foreign tourists spend $80 billion annually in the U.S. and are responsible for the largest trade surplus in America's overall trade deficit. More than 90 percent of foreign-tourist spending is from coastal states largely due to the attraction of beaches. The Federal government receives about $4 billion annually in tax revenues just from foreign tourists. This is about 200 times as much as the Federal government spends annually on beach-nourishment projects. In fact, Federal tax revenues just from the two million foreign tourist who visit Miami beach each year are about six times greater than annual Federal government spending for all U.S. beach-nourishment projects. In contrast, Spain is spending more on beach nourishment in five years than the U.S. has spent in the last 50 years. If America's beaches are not maintained, foreign tourists will go to foreign beaches that are maintained, and Federal tax revenues will suffer. The Federal government receives the majority of foreign-tourist tax revenues with local governments receiving just 14 percent of these tax revenues. Maintenance of beach infrastructure cannot be solely a local responsibility since local governments receive a minority of beach-tourist tax revenues.

The Federal government must not walk away from America's beach-erosion problems that it has largely created, must not promulgate policies that support armoring of America's coasts, and must not allow deterioration of beaches that are the largest factor in reducing America's trade deficit and generate far more Federal tax revenues from foreign tourists alone than the Federal government spends maintaining beaches.

I am confident that Congress will respond to the will of the American people and ultimately prevent implementation of the Administration's ill-conceived policies. However, I have serious concerns that this process will be drawn out and in the mean time America's beaches will suffer and life and property will be put at risk by project delays. I fear the Corps of Engineer's infrastructure that supports shore-protection and coastal-flood projects will be eliminated. Will Corps of Engineers Coastal experts be the first to be eliminated in the Corps' manpower cutbacks because the mission question is unresolved? Will Corps of Engineers's need to reduce costs and improve performance of shore protection and coastal-flooding projects be eliminated? Will critical Corps' long-term measurements of coastal-wave climate, hurricane surge, and beach-nourishment performance be abandoned because the mission question is unresolved?

The Administration needs to immediately withdraw its policy abandoning America's beaches. The American Shore and Beach Preservation Association would like to work with the Administration and Congress in determining how to maintain the Federal government's traditional commitments in this area of needed deficit reduction. However, many issues can be explored such as changes in the Federal cost share, increased minimum benefit-coast ratios, and the length of Federal commitment. The strong rejection by Congress of proposed Administration mission changes was bipartisan. It is time the Administration works with Congress, state and local governments, and citizen groups to fairly and rationally determine how to maintain

the Nation's beach heritage in a cost-effective way and protect coastal citizens from coastal-flooding disasters. I pledge the support and participation of the American Shore and Beach Preservation Association in this process.

PREPARED STATEMENT OF HOWARD MARLOWE, PRESIDENT, AMERICAN COASTAL COALITION

The American Coastal Coalition appreciates this opportunity to provide the Subcommittee with our views concerning the Civil Works water programs of the Army Corps of Engineers. ACC is a nonprofit, national advocacy organization for our nation's coastal communities. Our members consist of government entities, government officials, business people, trade associations, property owners and others who share a common concern for the welfare of Coastal America.

We are grateful that the Subcommittee has provided significant funding for the Corps' civil works programs over the past two years. Your statements of opposition to the Administration's proposed policy changes for these programs helped to pave the way for the passage of the Shore Protection Act last year (Sec. 227 of the Water Resources Development Act of 1996). That legislation made shore protection one of the missions of the Corps. Now, it rests in the hands of this Subcommittee to determine whether that legislation will be enforced.

ACC believes that the shore protection, flood control, and navigation programs of the Corps are vital to our nation's economy. We have selected shore protection as the focus of our efforts since this program was a Corps 'stepchild' prior to passage of the Shore Protection Act. The Corps has been involved in shore protection projects for decades. However, most of this involvement resulted from its storm damage and flood control missions. Congress has now stated that shore protection is a vital concern that can stand on its own merits. That is because the nation's 97,000 miles of coastline are a vital part of its economy and ecology. Half of our population resides in coastal regions (including the Great Lakes). Our ports have been critical to the growth of our economy since the country was founded. Our beaches are a precious natural resource that attract far more visitors than all of our national parks combined. In many parts of our country, ports and beaches exist side-by-side. They are inseparable as part of a region's economy, yet that is not the way they have been treated by federal policy.

Two years ago, the Administration proposed a revision in the role of the Corps that was intended to stop future dredging projects of small harbors and the future construction of most shore protection projects. Despite the fact that this proposal has been rejected by Congress, it is being implemented by the Administration. For fiscal 1998, the President has proposed more than a 40 percent cut in funding for shore protection projects. That is a mere $60.5 million for shore protection and beach erosion projects, compared to the $106.7 million appropriated by Congress for the current fiscal year. No matter how the figures are sliced and diced, this is bad news for both the Corps and Coastal America. There is a 56 percent cut in studies and investigations. That means fewer projects are moving through the pipeline toward their construction phase. There is 42 percent reduction in construction dollars. That means fewer projects are being built.

The ACC does not support specific projects. Rather, we support program and appropriations policies that will benefit Coastal America. There are two key actions this Subcommittee can take that will demonstrate its commitment to the preservation of America's sandy public beaches. First, we urge the appropriation of at least $100 million for shore protection studies and construction projects in fiscal 1998. That is the level agreed upon by Congress last year. While it is less than the demand for currently authorized projects that either have received favorable reconnaissance studies or are ready for construction, this level of funding will enable many projects already in the pipeline to proceed without undue delay.

Second, we strongly urge this Subcommittee to provide funding for a reconnaissance study of at least one 'new start' shore protection project. A $100,000 appropriation is all that it takes to demonstrate that Congress rejects the Administration's anti-shore protection policies. There has been no appropriation for a reconnaissance study of a new shore protection project since the Administration announced its 'proposed' policy changes. Unless this Subcommittee funds such a study, the pipeline of new shore protection projects will be cut off. Without such a study, there will be an end to the federal shore protection program over the next 15 to 25 years as the life of existing projects comes to an end.

Again, we emphasize that the Water Resources Development Act of 1996 explicitly provided for an ongoing federal role in the placement of sand on eroded beaches. Yet, the Administration has chosen to ignore that mandate. All Corps reports find-

ing a national interest in new shore protection projects have been modified to state that, under Administration policy, the Corps proposes all funding to come from non-federal sources. In other legislative venues, the ACC has proposed program changes which would achieve the Administration's goal of bringing more fiscal restraint to its shore protection efforts. So far, the Administration has not supported any of these changes. Instead, it has remained opposed to any continued federal shore protection role. It has referred to sandy beaches as places of recreation as if that term were a four-letter word. Yet, recreation and tourism is the country's second largest industry. It yields billions of dollars for the federal treasury, as well as the enormous dollar and job benefits its provides at the local and regional level. At the same time, the Administration has ignored the disaster mitigation role that sandy beaches play. Every time a major storm hits a coastal region, the beaches absorb the brunt of that storm's force. Healthy beaches protect property and save lives. Eroded beaches cannot perform that function. Ignoring the ongoing threat of erosion and the subsequent damage caused by storms is a costly and possibly life-threatening course of action.

Earlier in my statement, I referred to the integral nature of ports and beaches. In some parts of the country, beach erosion is caused in large part by the existence of federally-maintained channels. Yet, the Administration would continue to spend money on maintaining these channels without recommending the expenditure of a single dollar to mitigate the beach erosion they cause. That policy makes no sense. It also invites costly legal challenges.

In other parts of the country, the Administration proposes to end federal maintenance for smaller harbors. This is disastrous for both commercial fishing and recreational interests. It is especially harmful, however, in areas such as the West Coast where the dredged material from these harbors has been used successfully to repair adjacent beach erosion. There are also examples on the West Coast where human intervention (sometimes by the Corps) has resulted in a diversion of the natural watershed run-off, thus depriving a coastal region of the source of sand needed to replenish its beaches.

We urge this Subcommittee to fund those projects which (a) assure that damage to adjacent beaches caused by federally-maintained channels is mitigated, and (b) permit the sand from federally-maintained channels to be placed on nearby public beaches. In addition, we are especially concerned that the Corps has used its authority to reprogram funds in a manner that has the effect of thwarting the policies set by Congress. Attached to this statement is correspondence between Members of Congress and the Corps which reflects that concern. We understand the importance of giving the Corps sufficient flexibility to make funding adjustments. However, it is equally important that the Corps be held fully accountable for each of its reprogramming decisions. If the Corps cannot assure Congress that it will replace, without further congressional appropriations, any funding for a project no later than the following fiscal year, we believe the Corps should not be permitted to enter into such a reprogramming.

As the Corps restructures itself, there are two additional goals we urge this Subcommittee to support. First, the Corps must heighten its efforts to become 'customer-friendly.' Its programs and policies need to be explained in a manner that the public can understand. For shore protection projects, the Corps' policies and guidelines are adopted without notice and public comment and published in a manner that makes it almost impossible for all-but-veteran Corps employees to find. Second, a way must be found to spread the shore protection expertise that can be found in three or four District offices of the Corps to other parts of the country. Non-federal sponsors of projects on the Gulf and West Coasts deserve to have access to the same level of Corps program and technical knowledge as those on the East Coast.

If the federal shore protection program is allowed to wither, the inevitable result will be the armoring of America's coastline. Sea walls and other hard structures will be erected as property owners face the prospect of losing their residences and businesses to the ocean. The impact on our economy and environment of such a fortification of our coasts must be avoided.

Mr. Chairman, there is no difference between riverine flooding and coastal flooding. Both are equally disastrous. The American Coastal Coalition urges this Subcommittee to give the nation's coastal residents the federal support they need and deserve.

PREPARED STATEMENT OF THE CITY OF MIAMI BEACH, FL

Mr. Chairman and Members of the subcommittee: The City of Miami Beach would first like to thank the members of the subcommittee for all their efforts in the past

to provide support for the State of Florida's beaches and in particular, those of Miami Beach. Now, as you begin the difficult process of crafting the fiscal year 1998 Energy and Water Appropriations Bill, the city would like to bring to your attention an ongoing erosion problem for which a solution is desperately needed.

Beaches are Florida's number one tourist "attraction." Last year, beach tourism generated more than 16 billion dollars for Florida's economy and more tourists visited Miami Beach that visited the three largest national parks combined.

In addition to their vital economic importance, beaches are the front line defense for multi-billion dollar coastal infrastructure during hurricanes and storms. When beaches are allowed to erode away, the likelihood that the Federal government will be stuck with astronomical storm recovery costs is significantly increased. The Army Corps of Engineers estimated that more than 70 percent of the damage caused to upland properties in Panama City Beach by Hurricane Opal could have been prevented if their pending beach renourishment project had been completed before the storm.

The Florida Department of Environmental Protection estimates that at least 276 miles (35 percent) of Florida's 787 miles of sandy beaches are currently at a critical state of erosion. This includes the entire six miles of Miami Beach. As a result of the continuing erosion process and more dramatically, the intense winter storm occurring last November, almost all of the dry beach and sand dune were lost throughout the middle segment of Miami Beach. In addition, most of the Middle Beach dune cross-overs were declared safety hazards and closed, as the footings of the boardwalk itself were in immediate jeopardy of being undercut by the encroaching tides. If emergency measures, costing approximately $400,000 had not been taken by the City, there would have been considerable risk of coastal flooding west of the dune line in residential sections of Miami Beach. As you can see, this example points to the commitment we as a beach community have to our beaches, but federal assistance remains crucial. Our beaches must be maintained to ensure that our residents and coastal properties are afforded the best storm protection possible. Our beaches must also be maintained to ensure that beach tourism, our number one industry, is protected and nurtured.

In 1987, the Army Corps of Engineers and Metropolitan Dade County entered into a fifty year agreement to jointly manage restore and maintain Dade County's sandy beaches. Since then, Metropolitan Dade County has been responsible for coordinating and funding the local snare of the cost for the periodic renourishment of our beaches.

In order to ensure that adequate funding will continue to be available, the City of Miami Beach supports and endorses the legislative priorities and appropriation requests of Metropolitan Dade County, as they relate to the restoration and maintenance of Dade County's sandy beaches. Specifically, the City supports the $3.5 million request for renourishment of the Surfside and South Beach areas.

PREPARED STATEMENT OF DAVID M. BEASLEY, GOVERNOR, STATE OF SOUTH CAROLINA

Mr. Chairman, Members of the Committee, thank you for the opportunity to submit for the record comments regarding the 1998 Water and Energy Appropriations Bill.

As stated last year in my testimony to this committee, South Carolina enjoys a positive and ongoing, partnership with the Federal Government in our efforts to maximize the investment on and return from, our states natural resources, upon which South Carolina's economy is so very dependent.

Our lakes and reservoirs are critical to hydro-electric power production; intracoastal waterways and ports are key economic development components; and our beaches and shoreline essential to recreation and tourism.

In the absence this year of oral testimony to your committee, my formal input for the record will be centered on areas considered significant to South Carolina's current economic vitality and future growth. Accompanying my statement are key supporting documents germane to the discussion, including short descriptions of U.S. Army Corps of Engineers approved projects that are currently ongoing or proposed, and individual S.C. State agency letters from the South Carolina State Ports Authority; South Carolina Department of Natural Resources; South Carolina Department of Commerce; South Carolina Office of Ocean and Coastal Resource Management (Department of Health and Environmental Control); South Carolina State Energy Office.

It's obvious that the contents of this Appropriations Bill, and the actions of this subcommittee, have wide spread implications for the state of South Carolina.

In commenting on this legislation, it's important to recognize the commitment South Carolina is making to support the Administration's goal of maximizing the return on investment with regard to scarce resources. We are supporters of balancing the budget, and are sympathetic to the difficult choices being made in the allocation of those scarce resources. Through our partnership with the Federal Government, South Carolina is leveraging the Federal contribution through improved economic development, job creation, promotion of private sector investment, and protection of the environment.

South Carolina's economic development incentives are proving beneficial not just to our state, but the nation as a whole. For two straight years we've broken the five billion dollar barrier in capital investment, much to international corporations. South Carolina has created over 50,000 new jobs over the same period.

It is my intention to convey to this committee the value of our partnership, and highlight those areas both where we can further the Administration's goals, and where we need Federal assistance sustaining critical project/program implementation. Only through mutual support can South Carolina effectively embark on crossing the "bridge to the 21st century".

THE PORT OF CHARLESTON

With regard to the Water and Energy Appropriations Bill and U.S. Army Corps of Engineers funding, South Carolina's "center of gravity" is the great Port of Charleston. A national asset, Charleston ranks behind only New York on the East and Gulf coasts as a container port. The Water Resources Development Act of 1996 authorizes the deepening of Charleston Harbor to 45 feet, yet the project was among those not included in the President's fiscal year 1998 Budget as a new construction start. This is an area of great concern to the citizens of South Carolina, and we urge you to reconsider its inclusion. The Charleston District of the Corps of Engineers has an approved capability for this project of $94,854,000. While full funding may not be attainable for fiscal year 1998, we request you include minimum funding in the amount of $1.5 million so that critical, time-consuming efforts such as coordination, approval, and signing of the Project Cooperation Agreement, and the advertisement of the first construction contract can be accomplished. This would allow fiscal year 1999 to be a productive year of construction. This project is vital to the State of South Carolina's economic development, for both domestic and international markets, and to delay construction start beyond fiscal year 1998 will have an adverse effect on not only our state, but the southeast U.S. as well. Please refer to the accompanying letter from the State Ports Authority for amplifying information on the importance of Charleston Harbor and the Port of Charleston.

I would like to comment on three principle appropriation accounts within the Corps of Engineers (Civil Works) fiscal year 1998 budget proposal that have direct impact on South Carolina and its quality of life; General Investigations (Studies); Construction General; and Operations and Maintenance (O&M).

STUDIES

We are grateful for the support identified for the Santee, Cooper, Congaree Rivers; Charleston Estuary; Yadkin-PeeDee River Watershed; and the Atlantic Intercostal Waterway studies. They are all worthwhile, and valid, projects. The Director of South Carolina's Department of Natural Resources has elaborated on the importance, and necessity for such studies in his accompanying letter.

With the navigational dependent growth and expansion taking place in Charleston Harbor, now is the time to investigate the feasibility of extending the deep draft navigational channel to the industrial facilities located above the upper limits of the Federally-maintained channel along the Cooper River. Present and future development along the Cooper River is currently being based on erroneous assumptions concerning the suitable navigability of the channel. This study will help qualify/quantify the navigational constraints of the existing channel and determine if a federal interest exists in extending the length, easing bends, and widening of the channel. We will be pursuing authorization for a Charleston Harbor extension study with our S.C. legislative delegation and the Charleston District of the Corps of Engineers. This study is urgently needed to help in the "economic development" decision-making process.

CONSTRUCTION

As alluded to earlier, the glaring exception to the construction appropriation for fiscal year 1998 is the omission of the Charleston Harbor deepening and widening project. Out of the $3,694,250,000 the President has requested for the Civil Works program of the Army Corps of Engineers, hopefully resources can be identified to

protect the viability of a national asset like Charleston Harbor. To re-emphasize, this construction is a key component in the region's economic development planning, and is considered a "show-stopper" for industrial growth if not pursued as soon as possible.

An essential program the Corps of Engineers has very successfully managed in South Carolina is the Continuing Authorities Program (CAP). This is a cost-shared program between the Federal Government and a non-Federal sponsor.

The CAP allows the Corps of Engineers to plan, design, and construct certain types of water resources improvements without specific Congressional authorization. The Charleston District Corps of Engineers Office currently has six requests for assistance from non-Federal sponsors which are currently on hold due to lack of Federal funds. The requests include potential projects at Cow Castle Branch (Orangeburg County); Goose Creek (Berkeley County); Castle Pinckney (Charleston County); Johnsons Swamp (Georgetown County); and Ireland Creek (Colleton County). These projects are good candidates to be earmarked in the CAP budget as they represent a maximizing of Federal investments.

Also within the construction appropriation account is the Aquatic Plant Control (APC) Program. In fiscal year 1996, funding was drastically reduced, and in fiscal year 1997, all appropriated funding was for research, and none for treatment. Aquatic Plant Control is a matter of serious concern to South Carolina. Productivity of our waterways and hydro-electric dams are essential to our economy. To date, millions of dollars of state revenues have been spent on treatment and eradication efforts, but Federal assistance is necessary to stem the tide of these destructive weeds. A worsening of the problem will only add future costs to Federal efforts in maintaining navigable waterways. An ounce of treatment now, may well be worth a pound of cure, later. South Carolina remains ready to shoulder its share of matching funds, and we seek your support in obtaining funding for field management operations in our waters.

OPERATIONS AND MAINTENANCE (O&M)

The continued viability of the Corps of Engineers Operations and Maintenance (O&M) Program is clearly in the national interest. Designed to preserve the nation's existing infrastructure, the program provides for operation and maintenance of Federal projects such as navigation, flood control, multiple use power, national emergency preparedness, and recreation facilities at completed projects. The Corps of Engineers operates and maintains ten navigation projects in South Carolina. There is an anticipated shortfall within the operations and maintenance budget for fiscal year 1998.

Due to Harbor related expansion, the Daniel Island dredge disposal area will be lost to Federal use in fiscal year 1999, leaving Clouter Creek Disposal area as the only accessible, available site for disposal of material unsuitable for ocean disposal. Providing additional funding will be necessary for diking operations at Clouter Creek in fiscal year 1998 to enhance its capacity, or exponentially greater costs will be incurred post fiscal year 1998 to locate and open a less accessible site, or transport disposal material to the ocean. It's estimated $900,000 will be needed in fiscal year 1998 to carry out the task.

Funding was also omitted in the President's budget for annual maintenance dredging in Town Creek, located in McClellanville, S.C. The local economy, not just the town of McClellanville, centers on seafood harvesting, and not performing this dredging will deny entrance to commercial fishing fleets, resulting in a serious, if not devastating, impact on the entire area's economic well being. I strongly urge you to restore funding of $360,000 for the dredging of Town Creek, and prevent what would amount to the collapse of this water resource dependent economy.

In the area of energy, South Carolina is very proud of its proactive programs, which provide both a necessary service to our citizens and protection of the environment. As a state which produces no fossil fuels, we believe there is significant value in maintaining a variety of forms of renewable energy in our nation's overall fuel mix. Solar and biomass-based energy are examples of energy and fuel diversity sources we strongly support. As a state with a strong pulp and paper industry, we stand ready to work as partners with the Department of Energy on joint venture projects in the renewable energy area. Federal, State and private sector partnerships produce valuable advances in technology while boosting job creation opportunities.

Another national asset located in the Palmetto State, is the U.S. Department of Energy's Savannah River Site (SRS), near Aiken, S.C. We support the continued investment DOE is making to the valuable SRS mission, and appreciate the Corps of Engineers' willingness to partner in SRS projects.

Mr. Chairman, I appreciate your committee's willingness to entertain our citizen's concerns with regard to this legislation. We solicit your support in identifying funding for the economy dependent projects I've discussed; South Carolina is prepared to commit its share of resources to the endeavor.

In closing, South Carolina occupies a unique position in our national interest. Key military installations, coastal geography, interstate trade routes, and international commerce are all dynamics at work within our borders. We remain a willing and responsible partner with the Federal Government, but as a small state, we depend upon co-sponsorship for critical programs as they relate to energy and water.

We look forward to continuing our partnership with the Federal Government as we strive to improve the quality of life for our collective constituents.

LETTER FROM BERNARD S. GROSECLOSE, JR., PRESIDENT AND CEO, SOUTH CAROLINA STATE PORTS AUTHORITY

SOUTH CAROLINA STATE PORTS AUTHORITY,
Charleston, SC, March 1997.

Hon. PETE DOMENICI,
Chairman, Subcommittee on Energy and Water Development,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I am writing to you on behalf of the State of South Carolina and the South Carolina State Ports Authority. It has come to our attention some of the new channel construction projects authorized by Congress in the Water Resources Development Act of 1996 are not designated for funding in the 1998 budget. This lack of funding causes us grave concern.

WRDA96 authorized the deepening of Charleston Harbor to 45 feet. Charleston is the main port of our state, moreover, it is one of the main container ports of our nation, ranking only behind New York on the East and Gulf Coast of the United States. Over 650 businesses in South Carolina use the Port of Charleston regularly. In addition, Charleston serves 26 other states and a total of 5,000 major United States businesses. Our ports are a national asset both for economic development in times of peace and for defense supplies in times of war, most recently Desert Storm.

Over one million container boxes move through Charleston harbor each year. They move on 1,650 vessels, many of which are twice the size of vessels which called only twenty years ago. Ships 965-feet long and drawing 41 to 42 feet of water are common today. In the next 2–3 years major steamship lines will receive from the shipbuilders 100 new container ships over 1,040-feet in length, carrying 5,000 to 6,000 teus, (twenty-foot equivalent units of container boxes), and drawing from 41 to 46 feet of water. Bringing the situation home to Charleston is the fact that the Port's major steamship line customers already have on order 41 mega container ships. The need for deeper water is staring us in the face.

In order to accomplish both regular maintenance dredging and the Charleston Harbor deepening project, the Corps of Engineers must be able to use its Clouter Creek disposal area. This area was recently made available to the Corps by the Navy when it closed its Charleston base. The Navy had not properly maintained the site for many years, and in order to use it, three cells totalling approximately 1,300 acres must have major dewatering and diking. Clouter Creek Disposal Area is the only disposal area available that could be utilized for disposal of material unsuitable for ocean disposal. Funds in the amount of $900,000 are urgently required for this work.

The global competitive edge our port system has brought to our state, and the 78,000 plus South Carolina jobs brought by the world business conducted through our port must not be lost. These 78,000 jobs create an economic impact of over $11 billion. Over $240 million in taxes accrue to state and federal coffers from Port impact every year. Customs receipts total over half a billion dollars a year at our Ports and harbor maintenance fees add another $30 million annually. The money spent on deepening Charleston harbor will be returned many fold.

The funding for Charleston is a major part of the funding needed, however while Charleston is our state's largest port, South Carolina also benefits strongly from having a Port at Georgetown. The industries around Georgetown depend solely on that industrial port for the materials of their businesses. Frequently the lack of routine maintenance dredging causes re-routing of vessels to other ports out of state which costs South Carolina industries heavily in transportation fees. If Georgetown is fully funded for its maintenance plan it will be a significant boom to the well-being of those industries.

Trade is the lifeline of our economy. Ship channels are the highways to the world which bring thousands of jobs as well as vessels to our ports. The ports of South

Carolina handle half again as much export cargo as import cargo. The State Ports Authority has received the Presidents E Award for excellence in the promotion of exporting and the E Star Award for continued excellence. For the national good the State Ports Authority asks that you please do what you can to get the funding flowing for this singularly most important public program for South Carolina. I will be available to provide information and support whenever you wish.

Sincerely,

BERNARD S. GROSECLOSE, JR.,
President and CEO.

PREPARED STATEMENT OF ROBERT V. ROYALL, JR., SECRETARY, SOUTH CAROLINA DEPARTMENT OF COMMERCE

The South Carolina Department of Commerce is the state agency responsible for ensuring that South Carolina citizens are able to maintain the highest quality of life through the attraction of private investment and encouragement of commerce and trade. We have programs designed to encourage growth of existing industries, expand exports and encourage investment by new companies which will provide good jobs and income to South Carolina citizens.

We have reviewed the U.S. Army Corps of Engineers budget proposal for the upcoming fiscal year and have identified several projects which we strongly support because of the potential to directly enhance our efforts to create jobs and increase wealth in South Carolina.

THE PORT OF CHARLESTON

Charleston's Port and its continued viability is critical, not only to the Charleston region, but also to the Southeastern United States. Products manufactured in 25 states are shipped to their international destinations through the Port of Charleston. In fact, Charleston's Port moves 25 percent of Georgia's total exports and 30 percent of North Carolina's exports. The total value of exports alone was $10 billion in 1996, making Charleston the 6th largest container port in the United States. Revenue to the federal government in the form of Harbor Maintenance Taxes was $30 million. Deepening and widening the harbor would dramatically improve the port's performance and increase its value to South Carolina and to the companies which it serves.

Port accessibility is a critical factor in the location decisions of a number of major, private national and international companies. The state of South Carolina enacted the Rural Development Act in 1996 which provides extraordinary incentives to new job creation projects in the Charleston area in recognition of the needs created by the Naval Base closing. This investment by South Carolina combined with the investment in port enhancement through widening and deepening has the potential to produce dramatic returns in terms of jobs, capital investments and increased exports.

THE CHARLESTON HARBOR EXTENSION STUDY PROJECT

The extension of the navigable area of Charleston Harbor further upstream into the Cooper River would dramatically enhance it's desirability as an industrial location. Industry already located in the area would be more likely to expand and the market potential for previously identified sites would be enhanced. Enhancement of the area's economic development potential is critical because of the lingering effect of the Charleston Navy Base closing. The impact of the closing on the area was dramatic with 18,380 direct, and 20,000 indirect jobs lost. Annual payroll loss was approximately $1.1 billion.

Recent investments by some large corporations located along this stretch of the Cooper River include Nucor Steel. Their investment has helped somewhat to offset the loss of payroll and jobs and are an indicator of the potential of this area. Nucor's leadership tell us that their organization has the capability to double the size of their operation and add $150 to $200 million in new investment, and 100 new jobs if they can develop national and international markets for their steel. The water transportation enhancement will be a key factor in their decision process.

Our experience shows that most of our investment comes from growth of existing companies. Attachment A shows the existing industries which would be directly impacted by enhanced water transportation accessibility. In addition, Attachment B shows the potential industrial sites which would be enhanced by the harbor extension.

In this particular project to expand the port's navigable area up the Cooper River, a rather small public sector investment could leverage potentially remarkable private sector investments. This public sector venture would provide an excellent model of a public-private partnership with a substantial return on investment to the taxpayers.

NEW SAVANNAH BLUFF LOCK AND DAM

This project is critical to the further growth of the Kimberly Clark facility in Aiken, South Carolina. Kimberly Clark now has 1,100 employees and has potential for a great deal more. This project would have a substantial potential pay back for the taxpayers through jobs and capital investment.

SUPPORT TO THE DEPARTMENT OF ENERGY AND SAVANNAH RIVER SITE

The Savannah River Site is critical to the economy of the adjoining counties of Barnwell, Aiken, Allendale and to the entire region including counties in South Carolina and Georgia. Recent cutbacks have already negatively impacted the economy, and we support the continuance of the presence of the Corps of Engineers to administer construction contracts, undertake environmental remediation and maintain their employment levels at the site.

South Carolina has been hit hard as a result of the Charleston and Myrtle Beach Base Closings as well as the continuing cutbacks at the Savannah River Site. We believe that the projects mentioned above are wise taxpayer investments and should be adopted by Congress to support South Carolina's economic development program and the development of export markets accessible from South Carolina manufacturers.

PREPARED STATEMENT OF JAMES A. TIMMERMAN, JR., PH.D., DIRECTOR, SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES

Thank you for the opportunity to offer this testimony.

Noxious aquatic plants adversely impact the ecological balance and beneficial use of public waterways throughout South Carolina as well as the rest of the nation. The Corps of Engineers Aquatic Plant Control Program has served as a model of effective state/federal cooperation. Through an equal match of resources, this program has provided a financial bulwark to adequately defend against the spread of these foreign invaders and to minimize their impact. We are concerned about the drastic reductions in funding levels for the program over the past two years and in the large portion provided to research as opposed to control of these noxious species. Funding for the program was reduced from about $9 million in fiscal year 1995 to $4 million in fiscal year 1996 to $2.5 million in fiscal year 1997. All funding for fiscal year 1997 was allocated to research by the Corps. This loss of matching funds has severely reduced our ability to implement management operations. Consequently, we anticipate an increase in aquatic weed problems statewide. We ask that you consider increasing the funding for the Corps' Aquatic Plant Control Program to $6 million nationwide and earmarking a majority of the funds for cost-share with the states.

The reconnaissance study on the Santee, Cooper, and Congaree Rivers has identified several possible projects that the Department of Natural Resources is presently negotiating with the Corps. The President's Budget identifies $300,000 for fiscal year 1998 and we support that, although it may prove to be insufficient. The study offers tremendous environmental restoration opportunities for the State of South Carolina. In particular, restoration of critical historical fishery spawning grounds in Lake Moultrie is a pressing need which lends itself to an opportune State-Corps cooperative project. Additionally, this study would address waterfowl habitat restoration in the Santee Delta, a focus area of the North American Waterfowl Management Plan. The study would also address water quality restoration and flood control in the Goose Creek Reservoir and basin. We stress the importance of these environmental restoration efforts and request your support of these studies/projects.

There is, however, a serious point of contention represented here. One of the proposals being addressed as a part of this study is the migration of fish at the Pinopolis and Santee (USACE) dams. Assisting anadromous fish migration continues as a major issue in this country and that certainly holds true for us in the lowcountry of South Carolina. We would stress that the $1.06M recommended by the reconnaissance study to aid this migration is solely an obligation of the Corps as the facilities in question are Corps facilities and we request that this amount be appropriated to satisfy that obligation.

Within the Savannah District, the Operations and Maintenance Program supports mitigation funding for the construction of Richard B. Russell Lake. These funds have previously been used for the purchase of land to replace that which was flooded. Sufficient funding of this program will insure the availability of the $185,000 obligation for the operation and maintenance of those mitigation lands. Further compensatory mitigation is required for the Corps' operation of the ordinary generating facilities at the lake. If the Corps decides to operate the pump-back portion of that facility, additional mitigation will be required, the amount dependent on the extent to which it is operated. This would approximate $1.5 million average mitigation per year, preferably under an appropriation of $25,000,000 to create an annuity for mitigation costs over the life of the project.

The Port of Charleston continues as a valuable national asset in terms of international trade and state and national economic development. The estuary which serves as the port has been substantially modified in recent years due to the U.S. Army Corps of Engineers Rediversion Program and it will be further modified by the deepening of the harbor's channels. While a number of studies have been completed in the Charleston estuary, a number of questions remain. Appropriate management strategies for maintaining the estuary as a port and a biological asset can only be developed with an extended study of the harbor, to include previously agreed to monitoring outside the estuary in the Charleston Ocean Dredged Material Disposal Site.

Recently the U.S. Environmental Protection Agency developed a series of recommendations through the Savannah River Basin Watershed Project. While this was a serious accomplishment, the needs of the Savannah Basin reach beyond these recommendations and should be addressed through a comprehensive study as authorized by Section 414 of the Water Resources Development Act of 1996 (Public Law 104–303). The results of such a study could be the mechanism by which the flows of the Savannah can best be optimized to meet the many and varied demands of often competing interests. The "normal" limit for reconnaissance studies of $100,000 and 6–12 months will not be sufficient due to the size of this basin and its inherent complications. An appropriation of $600,000 will be needed.

While on the subject of the Savannah River, we support the funding for the needed rehabilitation of turbines at Lakes Hartwell and Thurmond. However, we are very concerned that none of the $18M in the President's Budget is designated for raising the dissolved oxygen in the release water from these projects to State water quality standards. Our support for the improvements to the generating facilities hinges therefore on the Corps' ability to address satisfactorily the dissolved oxygen issue. We request that your markup address this.

The Charleston District is responsible for administering federal programs regulating certain activities in waterways and wetlands of South Carolina. These programs provide an important mechanism for protecting the natural resources of our state. Recognizing the importance of these programs, the Department of Natural Resources has established a comprehensive process by which we review and provide comment on all Corps permit applications that may impact the resources within our purview. We are concerned that in South Carolina the principle federal regulatory emphasis in being placed on our eight coastal counties. We believe that in large part this situation is due to inadequate funding for the regulatory programs and the lack of a sufficient presence in the non-coastal portion of South Carolina. We request that funding for the Charleston District's regulatory program be adequately increased to allow the establishment of a branch regulatory office in Columbia in order to better serve our 38 county non-coastal area, while maintaining the effective administration along our coast.

The Yadkin-Pee Dee River Basin is the largest watershed draining to the Southeast of the United States. A Reconnaissance Study has been started this year under the new, accelerated guidelines. Funding will be required in fiscal year 1998 for the feasibility studies that address flooding and navigation restrictions on the Pee Dee and associated tributaries which are clogged with downed trees. Slow drainage and stagnant water pools within the drainage basin cause periodic fish kills and restrict forest regeneration. The fiscal year 1998 study will investigate the feasibility of correcting flooding problems, identify water supply sources, and environmental restoration solutions.

Environmental restoration projects, as a part of the Continuity Authorities Program, have been threatened by Congressional action to identify and fund specific projects. These funds have historically been made available to the districts in such as way as to allow maximum flexibility for the local districts and their cost sharing partners. This practice has resulted in timely and efficient cooperation and should be continued with as little earmarking as possible.

The Reconnaissance Study of the AIWW in South Carolina is underway. While we support funding for those feasibility studies that will result, particularly with regard to the concept of compatible uses of dredge disposal areas for wildlife management and environmental restoration, realignment and enlargement questions are just that to us, questions. Our reservations regarding realignment and enlargement will be addressed more specifically after they are accurately known. We appreciate and support the $500,000 set out in the President's Budget for this item.

In closing, I would like to commend the Charleston District for its proactive work with the South Carolina Department of Natural Resources to ensure that their civil works projects are properly monitored and mitigated. Other programs also benefit from the close physical proximity of our offices and good working relationships which lead to fruitful communications and cooperation.

PREPARED STATEMENT OF DOUGLAS E. BRYANT, COMMISSIONER, SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Thank you for the opportunity to provide this information to the Senate Subcommittee on Energy and Water Development regarding fiscal year 1998 U.S. Army Corps of Engineers projects in the State of South Carolina.

Ninety-five percent of all United States international trade moves by ship. South Carolina's Charleston container port is third in containers handled on the east and gulf coast and sixth nationally. The Charleston Port is a shipping hub for businesses located in 26 states. A significant link in our shipping hub is the Atlantic Intra-Coastal Waterway. The AIWW is fundamental to the safe and reliable movement of intra-state bulk goods and material along the Atlantic Seaboard, as well as use for recreational and other purposes. The U.S. Army Corps of Engineers maintains the waterway as a priority federal interest. The State of South Carolina is a partner in this effort by providing for dredged material disposal along the waterway. This arrangement has been in place for almost 60 years. During this time the Corps and the State have reacted to problems as they arose—problems associated with maintenance dredging, erosion, navigational safety, encroachments, and disposal easements. These problems continue to grow as additional pressures are placed upon the AIWW from increased use of the waterway and especially from rapid changes in adjacent land use. Our options for improvements to the AIWW are diminishing with time. At no time have we been able to stand back and address the AIWW in a comprehensive manner. The Corps has received $100,000 to initiate and complete an expedited reconnaissance study. The Corps has identified interrelated disposal and environmental issues related to operation and maintenance of the AIWW. The Corps is requesting funding for fiscal year 1998 to initiate a phased comprehensive feasibility analysis. This project is sorely needed and long overdue. We whole-heartedly support this effort.

In three hours during the night of September 21, 1989, the State of South Carolina suffered over $5 billion dollars in damage from Hurricane Hugo. A lesson we learned is that advance storm damage reduction efforts pay off. We strongly support the Yadkin-Pee Dee River Watershed project with the incorporation of a Pawleys Island, South Carolina, storm damage reduction element. The last reconnaissance report for Pawleys Island was completed in June, 1989, just three months before the Island was hit by the worst hurricane in 35 years. As a result of the hurricane, a 50 foot breach isolated 25 homes on the southern spit, in addition to causing massive erosional damage elsewhere on the Island. The Corps and the State expended over $550,000 in emergency beach restoration (220,000 cubic yards of sand) for Pawleys Island, not including a portion of the $1.2 million in dune revegetation that took place from North Myrtle Beach to Folly Beach. The 1989 reconnaissance report must be updated to protect that investment and determine the current status of storm protection. The estimated cost for the feasibility study is $300,000. The State and residents of Pawleys Island wholeheartedly support this Yadkin-Pee Dee River Watershed effort.

The Charleston Harbor Estuary represents a myriad of competing uses and values—international and intrastate shipping, military and commercial users, recreational boating, fishing, tourism, historical and archaeological values, flora and fauna habitat, and biological processes for the marine environment at all levels. A major modification to the physical characteristic of the harbor by increasing shipping channel depths can affect all uses. An investigation to map the distribution and bioeffects of sediment contaminants within and near maintained channels of the estuary would be extremely useful in developing appropriate management strategies for maintaining the harbor as a port and protecting biological resources. The cost for the general investigation is $400,000.

The State of South Carolina appreciates your consideration of these requests. For additional information, please contact me or Mr. Chris Brooks at our Office of Ocean and Coastal Resource Management in Charleston, SC, (803) 744–5838.

PREPARED STATEMENT OF MITCH PERKINS, DIRECTOR, SOUTH CAROLINA STATE BUDGET AND CONTROL BOARD

We urge the Energy and Water Subcommittee to retain sight of the value of a variety of forms of renewable energy in our nation's overall fuel mix. Solar energy and biomass-based energy resources are two important hopes for states such as South Carolina which produce no fossil fuels.

In the past, the solar energy accounts in the budget have been cut. These cuts may be short-sighted. America's energy security is dependent on fuel diversity. In South Carolina we believe that renewable energy resources will be a significant source of high-technology job opportunities, economic development and environmental enhancement. We stand ready to work with industry and the Department of Energy on joint venture projects in the renewable energy area. Increased focus should be applied to deployment programs to support these technologies.

Specifically, we support the Department of Energy's funding requests for the following programs: the Solar Building Technology Research Program ($4 million), the Photovoltaic Energy Systems Program ($77 million), the Solar Thermal Energy Systems Program ($19.8 million), the Biofuels Energy Systems Program ($76.54 million), the Renewable Energy Production Incentive Program ($4 million), the International Solar Energy Program ($7 million), the Solar Technology Transfer Program ($1.36 million), and the National Renewable Energy Laboratory ($2.8 million). We also strongly support the request of $45.5 million for Electric Energy Systems and Storage.

We have a strong pulp and paper industry in South Carolina, and we believe that federal-state-private partnerships should be promoted to ensure that renewable fuels inherent in the pulping process are optimized, resulting in job maximization and dollar outflow minimization.

Thank you for your consideration.

District: Charleston

Appropriation: Construction General (Aquatic Plant Control)

Program: Aquatic plant control

Amount requested: $1,000,000

Sponsor: Cost-shared with the State of South Carolina.

Program description: This program provides for the control of water hyacinth, alligatorweed, hydrilla, and other noxious aquatic plant growths from navigable waters, tributaries, streams, connection channels, and other allied waters of the United States. This program is cost-shared at the rate of 50 percent Federal and 50 percent non-Federal. This program was identified for termination after fiscal year 1995; however, reduced funding was provided to the Corps of Engineers in fiscal year 1996, most of which was designated for research purposes as opposed to treatment purposes. Termination of this program will result in a rapid expansion of aquatic plants and the resultant restriction on the use of affected water areas within South Carolina. Although the State is increasing the level of their aquatic plant control spending each year in an attempt to gain control of the aquatic plant problem, the reduction or elimination of Federal participation will severely impact the State's capability to maintain navigable waters. This program must be funded at the requested level to continue with the essential treatment of state waters.

District: Charleston

Appropriation: General Investigations (Review of Authorized Projects)

Study: Atlantic Intracoastal Waterway (AIWW)

Amount requested: $500,000

Sponsor: No State funding required.

Study description: The Atlantic Intracoastal Waterway (AIWW) is a naturally protected navigation route which generally parallels the Atlantic coast between Norfolk, Virginia, and the St. John's River in Florida. In South Carolina, the channel is 12 feet deep and not less than 90 feet wide and was constructed in the early 1940's. This study is a multipurpose initiative. We will investigate existing and future commercial shallow draft navigation needs, address ways to reduce operations and maintenance costs and improve safety and navigational efficiency. It will address possible realignment/enlargement of the waterway at specific locations as a result of planned bridges and ease difficult bends and blind areas for safer operation by the users. Other areas of interest to be investigated include environmental res-

toration, identification of surplus easements for possible release back to local sponsors, erosion control/bank stabilization, and easement encroachment problems.

District: Charleston

Appropriation: General Investigations (Watershed/Ecosystem Reconnaissance Study)

Study: Charleston estuary

Amount requested: $100,000

Sponsor: The SCDHEC, Ocean and Coastal Resource Management is the potential sponsor.

Study description: The estuary covers portions of Charleston, Berkeley and Dorchester Counties and includes over 50,000 acres of coastal marshes and associated flora and fauna. The major water bodies in the estuary are the tidal reaches of the Ashley, Cooper, Stono and Wando Rivers and the lower portions of Charleston Harbor. This comprehensive study will identify problems from current land uses and associated runoff, characterize important species and habitants, identify historic recent losses of important habitats and populations of important species, develop water resource management plans and ecosystem restoration. Our goal is to integrate Federal, state and local efforts to pursue multiple objectives, including environmental restoration while providing for reasonable economic development of the area.

District: Charleston

Appropriation: (Surveys)

Study: Charleston Harbor extension

Amount requested: Not funded. Requires study resolution.

Sponsor: Department of Commerce is the potential sponsor.

Study description: This study will evaluate the feasibility of extending the navigation channel in Charleston Harbor to provide for deep-draft navigation to industrial facilities located above the upper limits of the federally-maintained channel on the Cooper River. This study will help qualify/quantify the navigational constraints of the existing channel and determine if a federal interest exists in extending the length, easing the bends, and widening the channel.

District: Charleston

Appropriation: Construction General (Navigation)

Project: Charleston Harbor (deepening/widening), SC

Amount requested: $1,500,000

Sponsor: SC State Ports Authority.

Study description: Charleston Harbor is located on the coast of SC about 15 miles south of the midpoint of the coastline, 165 miles south of Wilmington Harbor, NC and 105 miles north of Savannah Harbor, GA. The SPA expressed a need for deepening the Charleston Harbor and construction of a turning basin for the proposed Daniel Island Terminal. The plan of improvement is to deepen the Entrance Channel from 42 feet deep to 47 feet deep and the inner channels from 40 feet deep to 45 feet realign/widen various channels/reaches, construct a new turning basin opposite the future Daniel Island terminal, construct a new contraction dike, reconstruct two existing dikes, and remove the third existing dike. The total cost of the project in October 1995 dollars is estimated at $116.6M ($72.8M Fed/$43.8M Non-Fed) with a benefit/cost ratio of 1.69 to 1.

District: Charleston

Appropriation: Construction General

Program: Continuing authorities program

Requested funding:

Description: The Secretary of the Army, acting through the Chief of Engineers, is authorized to plan, design and construct certain types of water resources and environmental improvements without specific Congressional Authorization. This program is cost shared between the Federal Government and the non-federal sponsor. Cost shared amounts differ depending on the type of project being undertaken. These authorities are called the Continuing Authorities Program. They consist of:

Section 14, Flood Control Act of 1946 (Public Law 79–526), as amended: For emergency streambank and shoreline erosion protection for public facilities and services.

Section 103, River and Harbor Act of 1962 (Public Law 87–874), as amended: For hurricane and storm damage reduction.

Section 107, River and Harbor Act of 1960 (Public Law 86–645), as amended: For navigation.

Section 111, River and Harbor Act of 1968 (Public Law 90–483), as amended: For mitigation of shoreline erosion damage caused by navigation projects.

Section 205, River and Harbor Act of 1948 (Public Law 80–858), as amended: For flood control.

Section 208, Flood Control Act of 1954 (Public Law 83–780), as amended: For snagging and clearing for flood control.

Section 1135, Project Modification for Improvement of the Environment (Public Law 99–662) as amended: For Environmental Restoration.

District: Charleston

Local governments in South Carolina support this program and have continued to request assistance from the Corps of Engineers. There are currently five study requests waiting for funds:

—Cow Castle Creek, Orangeburg County—Section 205

—Johnson's Swamp/Andrews, Georgetown County—Section 205

—Castle Pinckney, Charleston County—Section 103

—Goose Creek, Berkeley County, Section 205

—Ireland Creek, Colleton County—Section 205

During fiscal year 1996, the Charleston District completed construction on the Section 103 Battery Pringle Project. The Section 14 Indian Bluff Project was completed in fiscal year 1997. In addition, construction is on going for Murphy Island (Section 1135) and SCDOT Bridges (Section 14).

District: Charleston

Appropriation: Construction General (Navigation Projects)

Project: Cooper River, Charleston Harbor

Amount requested: $2,738,000

Sponsor: None required.

Project description: The project called for construction of a diversion canal and powerhouse to direct flows from the Cooper River back to the Santee River, thereby reducing shoaling in Charleston Harbor. The project was initiated in March 1977; the power-on-line date was March 1985. Cost-to-date of constructing this project is approximately $203,000,000.

District: Charleston

Appropriation: General Investigations (Storm Damage Reduction)

Project: Myrtle Beach storm damage reduction project

Amount requested: $10,000,000

Sponsors: This project has three sponsors—City of North Myrtle Beach, City of Myrtle Beach, and Horry County. Additional financial sponsors include the State of South Carolina, Georgetown County and the City of Surfside Beach. The State of South Carolina is providing 50 percent of the local sponsors matching funds for all three reaches.

Project description: The Myrtle Beach project is located along the northern coast of South Carolina and extends from Little River Inlet at the North Carolina border, in a southerly direction, to Murrells Inlet for a total distance of approximately 37 miles. It includes the entire coast of Horry County and a portion of the coastal area of Georgetown County. The project consists of placement of 5.1 million cubic yards of sand for initial construction on 25.4 miles of protective beach, encompassing three separable reaches. Material will come from offshore borrow sites. Periodic nourishment is authorized for a 50-year period and will be required about every eight to 10 years. The value of protected property for the 37 mile project reach is estimated to be in excess of $1.4 billion.

District: Charleston

Appropriation: Operations and Maintenance

Program: Operations and Maintenance Program

Amount requested: Fund the District's Request

Sponsor: None.

Program description: The purpose of this program is to preserve the Nation's existing infrastructure. It provides for the operation and maintenance of Federal projects in the following categories: Navigation; Flood Control; Multiple Purpose Power; Protection of Navigation; National Emergency Preparedness Program; and Recreation Facilities at Completed Projects.

Within South Carolina, the Corps of Engineers annually operates and maintains ten navigation projects as listed: Atlantic Intracoastal Waterway; Shipyard River; Charleston Harbor; Town Creek; Georgetown Harbor; Little River Inlet; Port Royal Harbor; Murreils Inlet; Folly River-Cooper River, Charleston Harbor.

Work performed on these projects consists of maintenance dredging and diking, condition surveys, monitoring efforts, and operating and maintaining the powerhouse at our Cooper River, Charleston Harbor project. In addition, our National Emergency Preparedness Program ensures that the Corps of Engineers can provide support for the Nation during national security threatening events.

Our annual expenditures over the past five years have averaged approximately $16.0M.

District: Charleston

Appropriation: Operations and Maintenance
Project: Charleston Harbor, SC
Amount requested: $4,715,000. This amount is $900,000 above the amount contained in the President's Budget Request. The additional funds are required to perform management activities/diking on Clouter Island. Daniel Island will not be available to the Corps for use after fiscal year 1998. Clouter Island is the only upland site with easy access available for use. Without funding in fiscal year 1998, the site will not be ready for use as a disposal site in fiscal year 1999.
Sponsor: None required.
Project description: The district maintains 33.5 miles of channel, three turning basins and one anchorage basin.
District: Charleston

FACT SHEET

CHARLESTON HARBOR—CLOUTER CREEK DISPOSAL AREA CONCERNS

Background.—The Clouter Creek Disposal Area has been used for a number of years as a dredged material disposal area. Aerial photographs indicate that it was used to a limited extent prior to World War II; however, it was not until the late 1950's and early 1960's that it received significant use as Charleston Harbor began to experience the full effect of diversion of Santee River flow down the Cooper River.

In 1958, the Corps obtained a perpetual easement for disposal from the South Carolina State Ports Authority for the northern 618 acres. The Navy owned the remainder of the disposal area, approximately 1,397 acres. Through a joint use agreement, the Corps has used the Navy's portion.

The Clouter Creek Disposal Area represents a substantial percentage of the inner harbor disposal area volume and is extremely important to the long-term viability of Charleston Harbor. Due to the problems involved in developing new disposal areas, it is important that the Clouter Creek Disposal Area continue to be available for its current purpose and used to its maximum efficiency. Storage capacity in the range of 100 million cubic yards could be developed which could serve the harbor well into the twenty-first century.

Status.—The Senate added $1,200,000 to our fiscal year 1996 Operations and Maintenance budget to accomplish ditching, clearing, and site preparation for diking of the south and middle cells. That work commenced in late fiscal year 1996. Work has been completed in the south cell and this cell is ready for diking in fiscal year 1998. Ditching, clearing and site preparation for diking will be completed in the middle cell by the summer of 1997.

District: Charleston
Appropriation: Operations and Maintenance
Project: Town Creek
Amount requested: $360,000
Sponsor: None required.
Project description: The project provides a channel ten feet deep by 80 feet wide from the AIWW to the mouth of Five Fathom Creek, a distance of 62 miles. The project includes an entrance channel twelve feet deep by 100 feet wide across the ocean bar, a distance of 4.0 miles. Without funding to dredge the inside shoals, the Town Creek project will not be accessible for seafood harvesters. Lack of funding for dredging will have a devastating economic effect on the livelihood of the Town of McClellanville.
District: Charleston
Appropriation: General Investigations (Comprehensive Studies)
Study: Santee, Cooper, and Congaree rivers
Amount requested: $300,000
Sponsor: The SC Department of Natural Resources is the potential sponsor.
Study description: The study area includes portions of western NC and extends to the SC coast, flowing through portions of 16 counties in SC. The total drainage area of the basin is over 16,000 square miles, of which the portion within SC encompass 33 percent of the State's total land area and includes over 60 percent of the State's population. This basin-wide ecosystem study will consider water resource needs including municipal and industrial water supply, water quality, hydropower, recreation, and environmental enhancement/restoration. The State has expressed a keen interest in this study because it offers an opportunity for comprehensive ecosystem planning and improvement.
District: Charleston
Appropriation: General Investigations (Watershed/Ecosystem Reconnaissance Study)
Study: Yadkin-Pee Dee River watershed

Amount requested: $300,000

Sponsor: The South Carolina Department of Natural Resources is the potential sponsor.

Study description: The Pee Dee River Basin, the second largest basin on the Atlantic Coast, extends northwest from the coast at Georgetown, across the North Carolina state line into western North Carolina, with a small portion into Virginia. The basin drainage area is about 18,000 square miles, of which 7,600 square miles are in South Carolina, 10,250 square miles in North Carolina, and about 150 square miles in Virginia. The major tributaries to the Pee Dee River are the Rocky, Lynches, Little Pee Dee, Lumber, and Black Rivers. The Pee Dee and many of these tributaries are clogged with downed trees which restrict water flow as well as navigation. Residents in these areas are concerned about the effects and problems downed trees have on increased flooding, safety, and health. Fallen trees and shoaled inlets create slow drainage and stagnant water pools throughout the drainage basin. Forest regeneration is hindered and periodic fish kills occur due to the degraded water quality in these stagnant areas. Communities throughout the basin are concerned about the decreasing sources of water supply and are seeking means to identify new sources. This study is a multipurpose study. We will identify the extent and magnitude of flooding and environmental problems, investigate the need for and feasibility of existing and future navigation projects, and identify new water supply sources.

SOUTHWESTERN U.S. WATER RESOURCE PROJECTS

PREPARED STATEMENT OF GEORGE MILLER, MAYOR, CITY OF TUCSON, AZ

The people of Tucson greatly appreciate the funding support your Committee has given over the years to the Central Arizona Project. A crucial element of Tucson's planning for reliance on CAP water has been the provision of delivery reliability for Southern Arizona through the construction of a storage reservoir and related facilities as part of the Project. This feature of the Project is commonly known as Terminal Storage. In the past three years, quality problems with CAP water have caused the City to suspend direct delivery of the water to customers. However, the City is taking steps to resolve those problems and will need to resume direct deliveries in the near future.

I am writing to urge that the Bureau's ongoing environmental, design and planning work for Terminal Storage be continued—so that the City can be assured of CAP delivery reliability when the City shifts its water supply from groundwater to CAP water. The Bureau has requested that $490,000 be appropriated for the Bureau's ongoing environmental and planning work for Terminal Storage. We support that request and urge that the requested funds be included in the fiscal year 1998 appropriation so that our City can be assured of CAP delivery reliability as the City works to shift its water supply from groundwater to CAP water.

In addition, there is strong regional interest in the most effective and efficient reuse of effluent. On March 17, 1997 a workshop to discuss initiation of a joint regional effluent study was convened in Tucson by the Bureau of Reclamation. The workshop was attended by the City, Pima County, the Towns of Oro Valley, Marana and Sahuarita, Green Valley, the Metropolitan Domestic Water Improvement District, the Tucson Regional Water Council, the San Xavier District of the Tohono O'odham Nation, the Arizona Departments of Water Resources and Environmental Quality and the Bureau. There appeared to be a strong consensus that a regional joint effluent reuse study should be initiated in partnership with the Bureau. The participants agreed to request an appropriation to provide the federal matching funds for commencing the study. We believe the study would be a constructive step in joint regional water planning for the Tucson area.

The City requests that $250,000 be appropriated to fund a water reclamation study for the Tucson area. Section 1609 of the Reclamation Wastewater and Groundwater Study and Facilities Act authorizes the Secretary of the Interior, in cooperation with the State of Arizona and appropriate local and regional entities, to conduct a feasibility study of a comprehensive water reclamation and reuse system for Southern Arizona. A similar study for the Phoenix area was authorized in Sec. 1608 of the Act and is currently being conducted. The study for Tucson has not been funded. The Secretary is entitled to 28,200 acre feet of effluent as part of the Southern Arizona Water Rights Settlement Act; the City is entitled to 90 percent of the remaining effluent. A regional study under Sec. 1609 of the Act would assist the Secretary, the City and other regional water entities in their long-range water planning efforts.

BACKGROUND RE CAP IN TUCSON

Until the arrival of Colorado River water through the CAP aqueduct in late 1992, Tucson was one of the largest metropolitan areas in the United States wholly dependent upon groundwater. Since the early 1900's, Tucson has been forced to mine groundwater—withdraw more groundwater than is naturally replenished to the basin—to provide water to its growing population. Recognizing the finite nature of the groundwater resource, Tucson committed in the 1970's to a conservation ethic. Over the years this has resulted in significant reductions in per capita groundwater use. Nonetheless, current demands for water in this basin exceed renewable supplies by a ratio of nearly two to one.

Since the 1970's, Tucson has been a major supporter of the Central Arizona Project to import Colorado River water to the metropolitan areas of the state. Tucson recognizes that CAP water will be the most viable long-term water source to sustain Tucson's economic and population growth, meet the Arizona groundwater code requirements, and conserve and preserve the City's groundwater resource for the future.

In 1989, after a lengthy process of study and public input, Tucson adopted a long range Water Resources Plan. As part of that Plan, Tucson made a policy decision of rapid transition from mined groundwater to surface water, much earlier than required by Arizona's Groundwater Management Code. For the past thirteen years, Tucson has been shifting its economic resources from drilling new wells and maintaining the well fields, to reorienting the water delivery system, and to the construction of a large treatment plant capable of delivering sufficient treated CAP water to substitute renewable water for nearly all of the groundwater the City was delivering. Tucson invested over $160 million in the facilities required for reliance on CAP water.

Unfortunately, when Central Arizona Project water arrived in the Tucson area, the interaction between treated surface water and old galvanized steel pipes in some portions of the city resulted in the delivery of discolored water to seven percent of our customers who received the water. Although major efforts were undertaken to correct the problem, progress was slow. In November 1995, the city's voters passed an initiative measure, Proposition 200, which bars Tucson Water from making direct delivery of CAP water unless it receives enhanced treatment to substantially reduce the total dissolved solids in the water.

Consequently, Tucson is planning to recharge a significant portion of its CAP water, and continue to pump groundwater until the problems associated with direct delivery have been resolved. Because the direct delivery of CAP water has been delayed, questions have been raised concerning the need for Terminal Storage. A purpose of my testimony today is to assure you that Tucson plans to solve the water quality problems and to resume direct delivery of CAP water. Tucson needs Terminal Storage.

Growth projections put the Tucson area's population at 1.2 million by 2025, and at 2.5 million 100 years from now. Tucson Water delivered more than 108,000 acre-feet of water in 1995. This area is projected to need more than 200,000 acre-feet in 2025, and over 400,000 acre-feet in the year 2100. Tucson has a potential service area which includes most of eastern Pima County, north of the San Xavier Indian Reservation. The City's allocation of CAP water is 148,420 acre feet, with an additional 25,000 acre feet allocated to private water companies and state land in the area. Tucson's long range plan indicates that this area's current CAP allocations will be totally utilized by the year 2025. The plan calls for the City to acquire additional CAP water.

Tucson is, and must remain, committed to the Central Arizona Project to support the City's future growth. I assure this Committee that Tucson's long-term commitment to the CAP remains intact, despite water quality problems experienced by the City when it directly delivered CAP water to its customers. After describing these problems, I will address our support for the proposed appropriations for the Tucson Reliability Division of the CAP for fiscal year 1998.

TECHNICAL CAP IMPLEMENTATION PROBLEMS IN TUCSON

Conversion of Tucson Water's service area population of nearly 600,000 people from groundwater to surface water has been a significant challenge for the City. In order to comply with anticipated new stringent EPA requirements, Tucson constructed a state-of-the-art water treatment plant. We operated a pilot plant in Phoenix to identify and deal with the problems that could be encountered when CAP water was introduced in Tucson. A major public relations campaign was implemented to prepare our customers for the changes they might encounter when CAP water arrived. When the first 84,000 customers were transferred from groundwater

to CAP water early this year, 7 percent of those customers experienced problems on a scale that had not been anticipated. The surface water caused encrusted materials in old galvanized steel pipe to break loose and resulted in the delivery of discolored water to approximately 6,000 customers. The City established a special office to deal with customer complaints and employed nationally recognized experts to help solve the problem. However, a quick solution could not be achieved.

During 1994, the City continued to deliver treated CAP water to a limited number of customers in areas with newer pipelines. After the CAP aqueduct was closed down in November and December for siphon repair however, the Mayor and Council decided that deliveries of treated CAP water would not be resumed to any customers until the water quality was sufficiently high for delivery to all Tucson Water customers.

To assure that direct delivery of CAP water would not resume until the quality of the water improved, the voters of the city enacted an initiative known as Proposition 200 last November. It provides that CAP water cannot be directly delivered to Tucson Water customers unless the quality is equivalent to high quality groundwater in Avra Valley west of Tucson. Enhanced treatment will be needed if CAP water quality is to be improved to Avra Valley standards.

Last year the City contracted with the Bureau of Reclamation to conduct pilot plant tests of enhanced treatment techniques and estimate costs. When that study is complete, we plan to poll our water customers to determine the acceptability of enhanced treatment.

Meanwhile the City is developing ways to continue to purchase CAP water and store it for future use. The Mayor and Council have been clear and united in continuing their commitment to taking substantial quantities of CAP water each year. However, the City must deal with the quality issues which have arisen because of the flow of CAP water through the City's older pipe system. Economic consequences will include pipeline repair and accelerated replacement, costs for homeowner damages, and, as described above, the possible construction of a new demineralization plant.

We will preserve our basic conservation ethic, and our long-term need for CAP water to meet the needs of Tucson's growing population will continue. The CAP Use Study for Quality Water by Dames & Moore, completed last Fall, reported on alternatives for utilization of the City's CAP allocation. Its long-term recommendation included direct delivery of substantial quantities of treated CAP water. Terminal Storage is critically necessary for such direct delivery.

The City is accelerating its main replacement program so that by the end of this year nearly half of the 200 miles of old galvanized water pipes will have been replaced. Earlier this month, the City announced a major new program to determine the level of water quality acceptable to our water customers and the methods for assuring that this level is maintained.

TERMINAL STORAGE

The problems Tucson has had switching from groundwater to CAP water highlight the need for a storage facility near the terminus of the aqueduct—Terminal Storage, as the final element of the Central Arizona Project in Southern Arizona. A reliable supply of CAP water is very important to Tucson. It is also quite important to the Tohono O'odham Nation. The Nation has a contract for 37,800 acre feet of CAP water, and is to receive an additional 28,200 acre feet of water under the terms of the Southern Arizona Water Rights Settlement Act of 1982. This may also be CAP water. The Nation has urged that Terminal Storage be provided as part of the Central Arizona Project so that a reliable supply of water will be provided to the Nation and its people.

The Bureau has been doing detailed planning and continuing the NEPA processes on a terminal storage proposal that has been approved by the City and the CAWCD board. The principal elements of the proposal are as follows:

—A 15,000 acre foot surface storage reservoir with 350 cfs gravity flow to the Tucson Water Treatment plant;

—Joint CAP recharge facilities with the CAWCD;

—Recovery of recharged water from:

a. Two of Tucson Water's existing exterior wellfields, Avra Valley and Santa Cruz, with the flexibility to introduce flows either at the treatment plant or into the surface reservoir; and

b. A new Central Avra Valley wellfield, located on City-owned property with the pumped supply introduced directly into the CAP canal on the discharge side of the Brawley Pumping Plant.

—Operation of the Tucson wellfields to be turned over to the CAWCD, under a cooperative agreement, during any CAP outages.

The estimated cost of the federal portion of this project is $88 million for the storage facility; the cost of the local portion is approximately $50 million for existing and new wellfields and pipelines. The draft Environmental Impact Statement for Terminal Storage was completed in April 1995. The final EIS is being worked on and is scheduled to be completed later this year.

We have urged the Bureau to continue the environmental work and planning for Terminal Storage and the Bureau plans to do so, albeit at a reduced level. Its appropriation request seeks $.49 million for work in fiscal year 1998 related to Terminal Storage. The City respectfully asks that this request be approved so that Terminal Storage can remain alive while Tucson resolves its CAP problems and develops its programs to return to direct delivery of CAP water.

PREPARED STATEMENT OF GOV. FIFE SYMINGTON, STATE OF ARIZONA

Mr. Chairman: This testimony submitted on behalf of the State of Arizona asks for continued support of funding for the various water related projects and programs which affect the State. Construction projects underway by the Bureau of Reclamation include: the Central Arizona Project, safety of dams work, and the Colorado River Basin Salinity Control Program, Colorado River Front Work/Levee System, and the Colorado River Water Quality Improvement Program. Construction projects by the Corps of Engineers include the Clifton, Holbrook, Nogales Wash, and Rillito River Drainage Flood Control Projects. Additionally, this testimony addresses the various planning, environmental and endangered species, and operation and maintenance programs by both the Bureau of Reclamation and Corps of Engineers.

This testimony supports appropriation levels that adequately fund the projects and programs within Arizona under consideration by this Subcommittee. Based upon a review of the fiscal year 1998 proposed budget released by the President, the State of Arizona has the following specific funding recommendations.

CENTRAL ARIZONA PROJECT

The Central Arizona Project (CAP) continues to be the highest priority water supply project in Arizona. The importance of this project for the future of the State of Arizona cannot be overstated. The reliable delivery of Colorado River water to users in central and southern Arizona is essential to meet the demands of an ever increasing population.

There has been some very significant activity related to the CAP since I submitted testimony to this Subcommittee last year. I am pleased to report that last year the Legislature passed and I signed into law an ambitious program to maximize the use of the State's Colorado River supply deliverable via the CAP—the Arizona Water Banking Authority. This innovative program enables Arizona to meet many of its long-term water policy challenges by providing the opportunity to do the following: firm-up the water supplies of communities along the Colorado River and those dependent on water delivered via the CAP, enhance Arizona's ability to meet its water management goals, and assist with the settlement of Indian tribe claims to water rights in Arizona.

The Water Bank plans to bank more than 323,600 acre-feet of water in 1997, raising Arizona's Colorado River use to about 2.74 million acre-feet of its 2.8 million acre-foot entitlement. Beginning in 1998, the Water Bank's activities will enable the State to use its full Colorado River allotment.

The program also provides a mechanism that can be used to facilitate short-term interstate water transfers with California and Nevada. This element may assist these states to meet their interim water needs while enhancing groundwater storage within Arizona. The Secretary of the Interior has stated his support for the program and has initiated the process for developing rules and regulations to facilitate interstate banking of Colorado River water.

The Arizona Water Banking Authority, and the support it enjoys among Arizona's leaders and water users, demonstrates the strong, united support in Arizona for the successful operation of the CAP and full utilization of the State's Colorado River entitlement.

The success of the CAP would not have been possible without consistent levels of Congressional appropriations. These appropriations have fulfilled the Congressional commitments made in 1968 when the CAP was authorized, and in 1986 when a comprehensive cost sharing agreement was executed among several entities in Arizona and the U.S. Department of the Interior. The State of Arizona appreciates the

Subcommittee's past support and hopes that it will look favorably on the CAP-related activities that continue to require funding.

Arizona requests a fiscal year 1998 appropriation of about $61,000,000 from the Lower Colorado River Basin Development Fund for CAP facilities. These funds will support construction principally focused in six major areas: continued work on the damaged siphons, awarding facility relocations and site improvement contracts for Waddell Dam, close out work on the enlarged Roosevelt Dam, continued studies associated with the Tucson aqueduct, continued design and construction of Indian delivery systems, and the continued construction of sulfur dioxide scrubbers for the Navajo Generating Station.

The budget for the Hayden-Rhodes Division of the CAP Aqueduct covers a number of activities, most notably the continued replacement of siphons. The CAP provides water for a number of cities in central and southern Arizona. That supply must be reliable with a minimum chance of interruption, which requires that the faulty siphons be replaced as soon as possible. To fund completion of existing contract closeouts and for administration of claims, Reclamation requests $900,000. The State believes that a significant portion of this request ($690,000) represents Reclamation's estimated costs of litigating a claim against the contractor that installed the defective siphons. Arizona believes Reclamation should pursue this litigation. However, the State supports the Central Arizona Water Conservation District's (CAWCD) proposal to finance the costs of siphon litigation from funds advanced by CAWCD, a proposal that would make unnecessary a federal appropriation for this purpose.

For the Regulatory Storage Division of the CAP, Arizona supports Reclamation's request for $7,100,000 to complete activities associated with Roosevelt and New Waddell Dams. These include continuing section 7 consultation activities associated with enlarged Roosevelt Dam based upon the 1996 biological opinions for the endangered southwestern willow flycatcher. In addition to the federal funding request, the cities of central Arizona have committed approximately $5,200,000 for the Roosevelt Dam improvements. The federal funding estimate also includes money for relocation of facilities at New Waddell and recreational facilities development at both New Waddell and Roosevelt.

The budget for the Indian water delivery and distribution division covers a number of ongoing projects intended to help Indian communities with contracts for CAP water put this supply to use. Arizona supports the Reclamation budget request of approximately $26,400,000 for this effort. This appropriation is related to other activities in the State to implement Indian water rights settlements. In particular, the State supports appropriations for the Southern Arizona Water Rights Settlement Act which is discussed later in this testimony.

The Navajo Generating Station near Page, Arizona provides power to the 14 pumping stations along the CAP's three aqueducts. To meet visibility requirements of clean air standards, the Department of the Interior, the Environmental Protection Agency, the Salt River Project, the State of Arizona and the Grand Canyon Trust agreed to install sulfur dioxide scrubbers at the generating station. For fiscal year 1998, the federal government's share of this effort is about $20,000,000.

Approximately $3,700,000 has been requested for protection of native fishes. About $3,450,000 of this is requested to implement a 1994 biological opinion pertaining to the delivery of water via the CAP to the Gila River Basin. Although the State supports the protection of native fishes, several scientific issues need to be addressed before money should be spent on implementation of the biological opinion. In fact, Ms. Rita P. Pearson, Director of the Arizona Department of Water Resources (ADWR), in a June 29, 1995 letter to the Secretary of the Interior, requested that Reclamation reinitiate consultation under section 7 of the Endangered Species Act regarding this issue. The request was based on ADWR's belief that the hydrologic and biological data supporting the biological opinion was fundamentally contrary to other available information and data. The State, therefore, recommends that appropriations for implementation of the biological opinion's reasonable and prudent alternatives be contingent upon a re-evaluation of the consultation process and timely resolution of the issues raised by ADWR.

The State supports a federal appropriation of about $1,500,000 to begin construction of the Sierra Vista effluent recharge project. This valuable project will balance the water needs of the area's federal, state, local and environmental water users by helping to ensure that future groundwater pumping won't adversely effect flow in the San Pedro River. State and local contributions to the project exceed $3,500,000. It is important to note that this project is not related to the CAP. Therefore, the State recommends that funding for this effort be separate from those appropriated under the CAP's authority.

Terminal storage is critical to the City of Tucson's ability to fully utilize its CAP supply. The City is committing significant resources to ensure that CAP water will

ultimately be directly delivered to a substantial portion of its service area. However, without terminal storage and the reliability it will bring, Tucson cannot prudently invest in the necessary enhanced treatment technology. As the City commits millions of dollars to solve the CAP issues, Arizona urges the Subcommittee to continue to fund the Bureau's planning and environmental work related to terminal storage. Arizona requests that approximately $500,000 be placed in Reclamation's budget to continue system design and associated environmental programs for Tucson's CAP terminal storage.

SAFETY OF DAMS

Arizona hopes to see sufficient funding in the fiscal year 1998 budget for the Bureau of Reclamation to complete construction of safety of dams work in Arizona. Although work is largely completed on Roosevelt Dam on the Salt River, and Bartlett and Horseshoe Dams on the Verde River, work is still required on Horse Mesa Dam on the Salt River. This dam, located up stream of the two million residents of the Phoenix metropolitan area, has safety deficiencies. The Plan 6 Cost Sharing Agreement executed in 1986 provides that the Salt River Project will pay for a portion of the necessary repairs on the dam. A total of about $15,610,000 should be budgeted for this important effort. Arizona supports Reclamation's fiscal year 1998 budget request of the full up-front funding to complete the safety of dams repairs to Horse Mesa Dam, although Reclamation's budget actually obligates $1,200,000 toward this effort in 1998. Funds associated with safety of dams should be appropriated to ensure timely completion of construction and elimination of concerns over the integrity of the structures.

OTHER BUREAU OF RECLAMATION PROJECTS

Arizona's Colorado River entitlement is its single largest source of long-term renewable water supplies. Therefore, Arizona is concerned about the future water quality of this supply and supports Reclamation's Colorado River water quality improvement program, authorized under Title II of the Colorado River Basin Salinity Control Act. The program responds to salinity control needs of Colorado River water users in the United States. The program is cost-shared: the states provide 25 to 30 percent of the costs associated with project facilities, operation and maintenance. Arizona supports Reclamation's fiscal year 1998 budget request of about $16,000,000.

Arizona also supports funding, under Title I of the Act, about $9,600,000 for maintaining the ready reserve status of the Yuma Desalting Plant, and maintaining the United States and Mexican Bypass Drains. Also, as part of Title II, Arizona supports Reclamation's budget request for $60,000 to continue monitoring, program verification and evaluation, and salinity model support in conjunction with the Colorado River Water Quality Improvement Program.

Arizona supports Reclamation's continued efforts associated with the Colorado River Front Work and Levee System. The $4,200,000 requested in Reclamation's budget request will continue construction of levees along the main Gila River conveyance channel associated with protecting federal, state, and private lands and facilities. Additionally, these funds will be utilized to complete the important floodway boundary maps and other requirements of the 1986 Colorado River Floodway Protection Act (Public Law 99–450).

Arizona supports Reclamation's commitment to the conservation of endangered species in the lower Colorado River region. Arizona urges appropriations for Reclamation's participation in the Native Fish Work Group ($1,350,000), and other activities within Arizona for a total commitment of about $3,700,000. Among those activities is the Multispecies Conservation Plan (MSCP), an outstanding cooperative effort to address endangered species issues involving several state, federal and environmental entities. Because of Reclamation's responsibilities on the Colorado River, Reclamation should continue to be a major participant in the development of the MSCP.

Arizona requests approximately $7,000,000 in federal funding for the Southern Arizona Water Rights Settlement Act. This funding will help the Tohono O'odham Nation to use its CAP water.

Arizona's economic prosperity is tied to the availability of water and the success of federal reclamation and water resources projects that this Subcommittee has helped fund. Many of these projects are nearing completion and the State hopes to fine tune them to address issues resulting from redirecting and channelizing Arizona's water resources to promote economic growth. For example, the City of Phoenix and the surrounding communities are working with the Bureau of Reclamation to help restore a nine mile segment of the Salt River in the southwestern corner of

the city. The Tres Rios Demonstration Project is authorized and ready to move forward. Local sponsors will match federal funding in this 50/50 cost-share program. The State supports the federal funding request of $1,000,000 for the demonstration project. Please note that the State also supports the $400,000 recommendation for this project contained in the budget for the Corps of Engineers.

Arizona supports Reclamation's fiscal year 1998 budget request for approximately $200,000 to be cost-shared with non-federal funds to assist with the Southern Arizona Regional Water Management Study. This study will help Tucson-area water providers develop a comprehensive water management plan for the Tucson basin. Also, the State supports the $200,000 fiscal year 1998 budget requests for the Verde River Basin Management Study and $150,000 for the West Salt River Valley Water Management Study. These studies will collect hydrologic data regarding existing water supplies, develop hydrologic modeling architecture, and develop water and wastewater infrastructural systems.

Finally, Arizona supports Reclamation's efforts in the Yuma region associated with water and energy management and development, land management and development, operation of existing Reclamation facilities, and continued maintenance of the infrastructure of the Lower Colorado River system. Specifically, these programs and activities include: a well inventory program, a water use accounting program, continued development and modification of water and power contracts, water conservation studies, scheduling of water deliveries to Mexican and American water users, maintenance and restoration of fish and wildlife facilities, continued river channel dredging activities, and technical support and maintenance of area and field offices. Arizona supports the budget request for a fiscal year 1998 appropriation of about $13,500,000 for these activities and programs.

CORPS OF ENGINEERS PROJECTS

Arizona has several ongoing projects under the aegis of the U.S. Army Corps of Engineers (Corps). Arizona supports the Corps' fiscal year 1998 budget request of $2,300,000 to continue construction of the Clifton, Holbrook Nogales Wash, and Rillito River flood control projects and $825,000 for the planning and engineering design for the Tucson Drainage Area project. In the past, Arizona has experienced devastating floods. The State must continue to have an active flood control program. The Corps projects will add significantly to Arizona's flood control and flood damage prevention capability.

Also, the Corps' general investigation studies should continue to be funded. These flood damage prevention studies include the Rio Salado study, the North Scottsdale Drainage Area Study, Tortolita Drainage Area study, the Rio De Flag study and the Santa Cruz Basin study. Arizona supports the Corps' budget request of approximately $1,125,000 for completion of these studies.

In cooperation with the City of Tempe, Phoenix is pursuing a long-term restoration of the Salt River basin near downtown Phoenix and Tempe. The Rio Salado project, currently in the feasibility phase, requires an additional $540,000 to keep the project on schedule. To help complete the feasibility study, the State requests an appropriation of $1,500,000 under the Corps' Research and Development program. These funds will support an important evaluation of wetlands creation technology.

As noted earlier, regarding the Tres Rios project, the State supports the $400,000 recommended for the project in the Corps' budget.

In summary, the State urges this Subcommittee's continued support for funding for water-related projects in Arizona. The CAP with related safety of dams and Indian water distribution system needs is at the top of the State's list with a total request of about $87,000,000. Additionally, the budget for the Colorado River Basin Salinity Control Project must be continued. The Corps of Engineers' budget is also necessary for continued flood control activities in the state with an additional request of funding for six needed studies.

Thank you for your attention to these very important matters.

PREPARED STATEMENT OF GRADY GAMMAGE, JR., PRESIDENT, BOARD OF DIRECTORS, CENTRAL ARIZONA WATER CONSERVATION DISTRICT

Mr. Chairman: The Central Arizona Water Conservation District (CAWCD) is pleased to offer the following testimony regarding the fiscal year 1998 Energy and Water Development Appropriations Bill for the Central Arizona Project.

The Central Arizona Project or "CAP" was authorized by the 97th Congress of the United States under the Colorado River Basin Project Act of 1968. We thank the Committee for its continuing support of the CAP. The CAP is a multi-purpose water

resource development project consisting of a series of canals, tunnels, dams, and pumping plants which lift water nearly 3,000 vertical feet over a distance of 336 miles from the Colorado River to the Tucson area. The project was designed to deliver the remainder of Arizona's entitlement of Colorado River water into the central and southern portions of the state for municipal and industrial, agricultural, and Indian uses. The Bureau of Reclamation initiated project construction in 1973, and the first water was delivered into the Phoenix metropolitan area in 1985. CAWCD delivered over 1.1 million acre-feet of water to project water users in 1996 and anticipates delivering 1.25 million acre-feet in 1997.

CAWCD was created by the Arizona legislature in 1971 for the specific purpose of contracting with the United States to repay the reimbursable construction costs of the CAP that are properly allocable to CAWCD. In 1983, CAWCD was also given authority to operate and maintain completed project features. Its service area is comprised of Maricopa, Pima, and Pinal counties. CAWCD is a tax-levying public improvement district, a political subdivision, and a municipal corporation, and represents roughly 80 percent of the water users and property taxpayers of the state of Arizona. CAWCD is governed by a 15 member Board of Directors elected on a population basis from each of the three counties it serves. CAWCD's Board members are public officers who serve without pay.

The Bureau of Reclamation declared the CAP water supply system substantially complete in 1993, and declared the regulatory storage stage, or Plan 6, complete in 1996. Project repayment is provided for through a 1988 Master Repayment Contract between CAWCD and the United States. Project repayment began in 1994 and, in 1997, CAWCD's first payment for the regulatory storage stage (other than monies advanced by CAWCD during construction) was made. To date, CAWCD has contributed or repaid over $350 million toward project construction costs.

CAWCD and the Bureau of Reclamation are actively litigating over the amount owed by CAWCD to the United States for CAP construction, in addition to other issues. In developing its estimates of CAWCD's construction cost repayment obligation, the Bureau of Reclamation has completed a series of project cost allocation studies. According to Reclamation's most recent analysis, CAWCD will owe $2.33 billion to the United States for reimbursable CAP construction costs. In CAWCD's view, CAWCD's repayment obligation cannot exceed $1.781 billion under the Master Repayment Contract. Indeed, the $2.33 billion figure exceeds by more than $330 million even Reclamation's own interpretation of the repayment ceiling provided for in the Master Repayment Contract. Nevertheless, Reclamation continues to request funds to support reimbursable CAP activities that may be unnecessary and has made no arrangements with CAWCD to repay these additional costs. Furthermore, CAWCD is concerned that Reclamation's current project cost estimate may not properly account for CAP construction costs and that its cost allocation studies do not properly allocate these costs among authorized project functions.

The Bureau of Reclamation is requesting $61,242,000 for the Central Arizona Project in fiscal year 1998. Of this amount, $26,422,000 is requested for the construction of Indian distribution systems, and $20,389,000 is requested for continuation of construction of sulfur dioxide scrubbers at the Navajo Generating Station (NGS). This leaves $14,431,000 for other CAP activities.

It is worthy of note that virtually all features of the project that are subject to repayment by CAWCD and are likely to be constructed (other than reliability features for the Tucson area which have been deferred) are now complete, are in repayment status, and are being operated and maintained by CAWCD. Significant work remains to be done to complete Indian distribution systems and some work remains to be done to install sulfur dioxide scrubbers at NGS; however, much of this work is being accomplished by entities other than Reclamation. For example, the NGS scrubber project is being completed by the Salt River Project, and the distribution system for the Gila River Indian Community (GRIC) is being constructed by the Community itself under an Indian self-governance agreement. CAWCD fully supports appropriations necessary to complete all Indian distribution systems and the NGS scrubbers.

Of the remaining funds ($14,431,000) that are not related to NGS or to Indian distribution systems, a significant percentage is requested to support Reclamation's non-contract costs. These non-contract costs total about $5,400,000. While CAWCD recognizes that some moneys are needed to support Reclamation's non-contract costs, CAWCD recommends that the total requested for these non-contract costs be reduced by fifty percent, with discretion left to Reclamation to determine how to apportion amounts appropriated for non-contract costs among its remaining activities.

Non-contract costs typically represent Reclamation's labor and associated overhead costs, such as utilities, rent and travel, which are incurred for the administration of Reclamation's construction program. CAWCD questions the level of Reclama-

tion's requested non-contract expenditures since the bulk of Reclamation's construction program is complete. While CAWCD congratulates the Bureau of Reclamation for its efforts to reduce the size of its workforce as the project nears completion, significant additional reductions are needed in fiscal year 1998 as work requirements continue to decline.

CAWCD urges the Committee to consider the following areas of concern in determining fiscal year 1998 appropriations for CAP:

Hayden-Rhodes Aqueduct, Siphon Repairs, Non-contract Costs.—$900,000.

This represents Reclamation's estimated cost of closing siphon repair and other contracts and litigating a contract claim against the contractor that installed defective CAP siphons. CAWCD firmly supports pursuit of this litigation. However, the Committee should know that CAWCD, as a partial settlement of one of the issues between CAWCD and the United States in the repayment litigation, has made a proposal which would allow Reclamation to finance the costs of the siphon litigation from funds advanced by CAWCD, without the need for appropriations for this purpose. Reclamation has not responded to CAWCD's proposal; a positive response would obviate the need for $690,000 of this budget request.

The remainder, $210,000, is requested by Reclamation to continue activities associated with closing construction contracts for the Hayden-Rhodes Aqueduct. Reclamation has notified CAWCD that eight such contracts still remain open, but five will be resolved in 1997. CAWCD is concerned about the length of time these contracts have remained open and the appropriateness of Reclamation's request for continuing non-contract expenditures for this activity.

New Waddell Dam, Non-contract Costs.—$2,075,000.

New Waddell Dam is the central feature of the CAP regulatory storage stage and was completed several years ago. The reservoir formed by New Waddell Dam was first filled in early 1994, and the dam was declared substantially complete in October 1996. Reclamation is requesting $2,075,000 in fiscal year 1998 to cover non-contract costs to support its remaining activities at New Waddell. Reclamation has indicated to CAWCD that its remaining activities include closing nine construction contracts in 1997, 10 more in 1998, and administering several active contracts for recreation development, various relocations, access road construction, and remaining environmental work. Upon reviewing these remaining activities, CAWCD questions the level of funding requested by Reclamation and the amount of time being taken to close construction contracts. With a total program of $5,146,000, about 40 percent or $2,075,000 is identified for non-contract activities. These non-contract costs appear excessive and, in CAWCD's judgment, should be significantly reduced.

Modified Roosevelt Dam, Non-contract Costs.—$1,574,631.

Like New Waddell Dam, Modified Roosevelt Dam was declared substantially complete in 1996. Reclamation is requesting $1,574,631 in fiscal year 1998 to cover non-contract costs to support its remaining activities at Modified Roosevelt Dam. Reclamation has indicated to CAWCD that its remaining activities at Modified Roosevelt Dam include closing three construction contracts and continuing work associated with accomplishing reasonable and prudent measures necessary to protect the endangered Southwestern Willow Flycatcher. CAWCD supports appropriations necessary to protect this endangered species; however, upon reviewing Reclamation's other remaining activities, CAWCD questions the level of funding requested by Reclamation to support its non-contract costs. Out of a total request for $7,173,000, about $5.2 million is for work to be done by others, with Reclamation identifying $1.6 million of the remaining amount for non-contract activities. CAWCD believes that some portion of the $1.6 million should be eliminated from Reclamation's budget request.

Middle Gila Division.—$10,000; Upper Gila Division.—$10,000; Drainage Division.—$10,000.

These divisions of the CAP have been "indefinitely deferred." CAWCD does not believe that appropriations are necessary for these features.

Permanent Operating Facilities, Non-contract Costs.—$248,000.

Reclamation indicates that this budget request is intended to cover its demobilization costs for moving Reclamation staff from the CAP headquarters complex in Phoenix, Arizona. CAWCD met with Reclamation on January 31, 1997 and again on February 28, 1997, to discuss this and other issues, and was advised that Reclamation's demobilization would be accomplished by September 30, 1997. Therefore, CAWCD questions the need for fiscal year 1998 funds for this activity.

Other Project Costs, Water Allocations, Non-contract Costs.—$172,000.

Reclamation has indicated that these funds are requested to support staff activities associated with allocations and subcontracting for CAP water. The reasons for Reclamation's request are not clear since there are no current or anticipated activities in this area associated with CAP, and all costs of transferring existing CAP allocations have been borne by the prospective subcontractors.

Other Project Costs, Curation Facilities, O&M.—$407,000; Non-contract Costs.—$75,000.

Reclamation's plans for providing for permanent storage and curation of artifacts unearthed during CAP construction are not clear. These funds are being requested to pay National Park Service charges to rent space to store these artifacts at the Federal building in Tucson, Arizona, and to support non-contract costs. Reclamation is planning a permanent repository on the Gila River Indian Reservation. CAWCD supports the construction of this facility; however, it is not clear if this facility will house all the artifacts, or how, by whom, or at whose expense the facility is to be staffed and operated. CAWCD would be willing to provide temporary storage space for these artifacts at its headquarters complex in Phoenix, Arizona, until the permanent facility is completed. This would allow Reclamation to apply the requested fiscal year 1998 funds toward accelerating construction of the permanent repository.

Other Project Costs, Native Fish Protection.—$3,650,000.

Most of these funds ($3,450,000) are requested to implement a 1994 biological opinion of the U.S. Fish and Wildlife Service (FWS) pertaining to delivery of CAP water to the Gila River Basin. The funds are for construction of fish barriers ($2,745,000), payments to FWS for non-native fish eradication and native fish conservation ($500,000), and Reclamation's non-contract costs ($205,000). An environmental organization has now sued Reclamation and FWS on the basis that the reasonable and prudent alternatives of the biological opinion are not stringent enough. CAWCD, on the other hand, believes that the biological opinion is not supported by fact or science. This matter will be at issue for some time. Since the litigation may produce a result which is very different from that currently provided for in the biological opinion, no funds should be appropriated to implement the biological opinion until the pertinent issues are resolved. Reclamation has indicated to CAWCD that it needs the $205,000 in non-contract costs to defend the lawsuit, however, and CAWCD does not object to an appropriation for this purpose. CAWCD also does not object to the requested appropriation of $200,000 in support of the Endangered Species Act activities on the Santa Cruz River Basin. Of the total requested ($3,650,000), CAWCD believes that no more than $405,000 should be appropriated under this item.

Fish and Wildlife Management and Development.—$1,450,000.

CAWCD has no objection to the expenditure of funds for this purpose; however, since it is not CAP related, CAWCD requests that funds be appropriated under other authority.

Indian Distribution Division, Non-contract Costs.—$1,788,000.

As previously stated, CAWCD strongly supports full funding for construction of Indian distribution systems. CAWCD understands that the GRIC distribution system is being developed by GRIC itself, that certain Indian distribution systems will be constructed by other Indian communities pursuant to 638 contracts, and that Reclamation will construct the other facilities. Reclamation's requests for funds to support its non-contract costs to administer construction of Indian facilities may be inconsistent when compared to work anticipated to commence in fiscal year 1998 or work already underway. These requests warrant scrutiny.

CONCLUSION

Virtually all essential reimbursable features of the CAP have been declared to be substantially complete, are in repayment status, and are being operated and maintained by CAWCD. CAWCD and the United States are engaged in litigation about the amount owed by CAWCD for CAP construction.

CAWCD is actively working toward resolution of the repayment dispute and looks forward to restoration of a positive working relationship with the Bureau of Reclamation. However, in CAWCD's view, the remaining federal role associated with CAP can be effectively discharged with a smaller Reclamation staff, and additional staff reductions are needed. Therefore, CAWCD believes that reductions in Reclamation's budget for non-contract costs are called for. In addition, CAWCD believes that

a review of Reclamation's accounting of CAP construction costs and its allocation of these costs among authorized project functions is essential.

CAWCD welcomes this opportunity to share its views with the Committee, and would be pleased to respond to any questions or observations occasioned by this written testimony.

PREPARED STATEMENT OF JIM DUNLAP, BOARD MEMBER, NEW MEXICO RURAL WATER ASSOCIATION

Mr. Chairman, thank you for allowing me, as a Board Member for the New Mexico Rural Water Association and representative for the over 800 small communities with water systems in New Mexico to appear before this Committee today. I am also here on behalf of the all the other State Rural Water Associations and rural water folks all over this country to thank you for your personal support for small and rural water systems over the past twenty years.

Today, I am here on a different subject from the Safe Drinking Water Act and EPA Funding. Today, I would like to discuss the importance of the Bureau of Reclamation and its water projects to rural communities in the west and the need to initiate a new relationship between the Bureau and the small and rural water system in each state. These water projects are of growing significance to many small and rural communites in their effort to improve the public health and strengthen local economic opportunity. I am here today to request the support of you and the Committee for providing funding for a Rural Water Technical Assistance Initiative in each of the 17 western states.

Specifically, we are requesting $2.5 million for the expansion of grassroots on-site technical assistance program to fund a full time person working within each state rural water association. This person would assist small systems and rural communities to coordinate their short and long range water needs with the broader federal and state water supply and conservation programs. This could include creation of regional water systems, centralized water treatment, tradeoffs for water rights from irrigation supplies, or increased use of surface supplies to save groundwater. Also this person would be available to work with water systems officials on Indian and tribal lands.

Background

Over the past ten years, rural communities have found themselves to be part of a much larger problem involving the securing and distribution of increasingly scarce western water supplies. In addition, the enforcement of the 1996 amendments to the Safe Drinking Water Act have placed pressure on small systems to improve water quality through consolidation or obtaining new water sources.

As a result, the future of rural water is now tied to emerging state and federal water plans in the western states. Depletion of aquifers, changing water rights, and construction of distribution systems over wide geographic area are going to be the major issues facing rural water system in the immediate future.

What is needed is a new focus on integrating the needs of rural water systems into the larger strategies of state and federal governments for water supply, water conservation and water distribution systems. The access and delivery of water will determine the quality of drinking water to rural communities.

There is a need for a full time person working within each state rural water association to assist small systems and rural communities to coordinate their long range water needs with the broader water supply and conservation programs. This could include creation of regional water systems, centralized water treatment, tradeoffs for water rights from irrigation supplies, or increased use of surface supplies to save groundwater.

The primary objective of the program is to define an approach for more effectively integrating the grassroots on-site technical assistance of state Rural Water Associations with the major water resources responsibility of the Department of the Interior in the 17 western states. Both the Environmental Protection Agency and the USDA Rural Utility Service use the state rural water association in each state to improve compliance with the Safe Drinking Water Act and to assist high risk small communities to obtain funding for new systems. The Bureau of Reclamation needs to do the same.

Our initiative is an alternative to increased federal regulations. We believe that technical assistance operated by local governments provides more environmental benefits than increasing the size of the regulatory bureaucracy. We also feel that we are able to work in a special environment because we are not the regulators.

This "good neighbor" element allows acceptance in Indian Lands and with local elected officials where environmental regulators may have more difficulty.

Proposal

The Bureau of Reclamation—Rural Water Association Partnerships would add an important new dimension to the Bureau's efforts to improve water management and water use in the more arid western states. The program would provide a full—time person in the 17 Western States to demonstrate the effectiveness of mobilizing the state Rural Water Associations resources to:

—Provide on-site assistance to communities that have access or are seeking access to Bureau water resources. This includes the use of consolidations, new construction and changed operating procedures to improve local water quality.

—Where appropriate and in some states, provide on-site assistance at the request of and support of Indian Tribal Reservation and the Indian Health Service in their efforts to improve the delivery of quality drinking water throughout the reservation. This circuit rider would strengthen the local operation capability and allow tribes to improve water system management similar to those improvements achieved by small community water systems through similar circuit rider programs funded by the Department of Agriculture.

—Work with BOR, state government and local communities to develop a simple strategy for improving the use of Bureau of Reclamation water resources for rural domestic consumption. This strategy would tie BOR priorities into the funds spent through the USDA Rural Utilities Service and the new EPA drinking water state revolving loan funds.

—Other primary services provided to water utilities will include water conservation programs for water utilities and irrigation districts, water audits, leak detections, water meter installations/repairs, drought preparedness, regional water supply development, water rates structure, and wastewater systems improvements.

Proposed Appropriation for Project

Provide $2,500,000 for the seventeen state rural water association grassroots circuit rider technical assistance programs. Each state rural water association would receive $107,000 per program and the National Rural Water Association would be responsible for managing, evaluating, and reporting on the effectiveness of the overall project.

Examples of Work

The impact of the Bureau of Reclamation on the improvement of community water systems in the west is best illustrated by the role that the Bureau of Reclamation sponsored multi county rural water systems such as Webb, Tricounty and others have played in South Dakota. Without these Bureau of Reclamation projects there would be inadequate safe drinking water supplies in much of rural South Dakota. The South Dakota Bureau projects have increasingly relied on the rural water association circuit riders to assist in resolving small system relationships with major water supply efforts. It is this growing need that establishes the reason for requesting BOR funding for a circuit rider in each state with the primary responsibility for coordinating small community needs with the BOR water resources available in rural areas.

On a corresponding need in most states the assistance provided to Indian Reservations by these same circuit riders provides the missing interface between local governments, water projects, and reservations that is so frequently requested. Our experience is that on-site discussions solve the vast majority of water supply problems and set the groundwork for long range solutions. This is needed if the federal government, state and local governments and tribes are going to conserve scarce water supplies in the west. The following are examples of the type of tribal assistance that would be addressed by this program.

North Dakota, Trenton.—The city of Trenton is located in Williams County and serves 150 connections. The city of Trenton is primarily an Indian community and is located on the very western edge of North Dakota. Recently they started to purchase their water from the city of Williston. Since the city has started purchasing their water, the system has been losing money in its water account. After going over the system's expenses and water rates, a new rate structure was recommended. Previous to this, the system still had a declining water rate—as in, the more water used, the cheaper the cost per thousand. Now that the system is purchasing water, the rate would remain constant. The long-term benefits to the water system in assisting them change their water rates will be that they will be able to more easily cover all their cost and start building a much needed reserve fund for future needs.

This shows them that closer attention must be contributed to water rates and other charges. Every gallon of water purchased and lost is money lost to the system.

Arizona, Eden.—The Eden Water Company is located in Graham County and serves 100 connections. Verna Rae Colvin from the Eden Water Company requested assistance from the Arizona Small Utilities Association Circuit Rider. The system had been experiencing a water loss problem. The system is losing more water than is being sold to customers for the last two months. Long transmission lines (approximately 8 miles) are carrying water to the distribution systems with some customers on transmission lines. The main line and crossing valves are buried, and some have never been found in the last 10 to 15 years. The Circuit Rider assisted with valve location and leak detection and customers meter testing throughout the water system. Daily meter readings at the source of supply are now being taken. As a result of this contact, accounting for water loss and correcting the problem will save the Eden Water Company approximately $7,000 per year in purchased water. Locating main line water valves will limit customers who would be out of water during the water main and service line breaks. By conducting a valve exercise program, water line valves will be operational when needed. The operator is more aware of the system due to valve, meter and service crossing locations.

Idaho, Harrison, DW.—The City of Harrison is located in Kootenia County. The city water source is from metered ground water. There are approximately 150 metered connections and the system does not have full-time disinfection. The operator, Rhonda Wilcox, is full-time, but not certified. The Idaho Rural Water Association Circuit Rider was requested to assist the operator. The system was losing approximately 100,000 gallons of water per day. The Circuit Rider delivered the Idaho Rural Water Association's leak detector to the City of Harrison. The operator was instructed on the use of the detector and instructions on how to survey the distribution system. The Circuit Rider and operator began checking every meter on the system. The operator was comfortable with using the equipment to proceed with attempting to locate the water leak. The following day, the operator located the leak. A one-inch water meter had frozen and broken. The repairs were made and the water loss eliminated. The operator was trained on the proper use of the leak detector and how to survey the water system. In the future, the operator will be able to use the training provided to locate water loss in the water system.

Idaho, Shoshone County.—Avery water system is located in Shoshone County and serves 29 unmetered connections. The system is supplied by a well which is chlorinated and unmetered. The operator is part-time and is not certified. Their pump was running almost continually. The Idaho Rural Water Association's Circuit Rider reviewed the system and began isolating parts of the system. Two leaks were located with the IRWA leak detection equipment. A shut-off valve was also located with the IRWA locator. The Circuit Rider reviewed their well and made some recommendations for improving their system. The recommendations were to install a run light, and a meter at the well head. Due to the leaks found and repaired, the system will save in excess of $60 per month in power savings. The operator will be able to use the leak detector loan equipment offered by IRWA. By installing a well head meter and run light, the operator will be able to monitor the well production and run time. Use of this information will help the operator to recognize the next time a leak occurs.

Montana, Deer Lodge.—The city of Deer Lodge is located in Powell County, Montana, and serves nonchlorinated water to 1,230 non-metered connections. The system is supplied by a groundwater source consisting of two metered wells. The full-time operator, Don Roberts, is certified. The operator contacted the Circuit Rider early one Sunday morning and requested immediate assistance with locating a water leak. The city's 2½ million water tank had only one foot of water in it. The Circuit Rider and the operator began a systematic check of the system in an attempt to locate the problem. The Circuit Rider determined that the "leak" was due to high usage because of hot weather and connections that were not metered. At their second well, a pilot control valve had been installed, and the pump had not been put back into operation. The Circuit Rider immediately checked the installation and found everything to be in order. He instructed the operator on the operation of the new control valve and the pump was started. By 7:00 am the next morning, the tank was three-quarters full. The Circuit Rider met with the mayor and recommended installing water meters which would save the system approximately $1,000 per month.

Nevada, Pioche.—Leak detection training was provided for Pioche Public Utility. Three leaks were located in a 2-inch distribution line which serviced three houses. The repair of leaks will stabilize line pressure above the minimum pressure required by the Safe Drinking Water Act, plus save utility district money.

Nevada, Steamboat Springs.—Steamboat Springs System is located in Washoe County, Nevada and serves unchlorinated water to 290 connections that are not metered. The system is supplied by a groundwater source which is metered. Tom Reese is the new full-time operator; he is not certified. The water system requested the Circuit Rider's help in locating some valves. The Circuit Rider was also asked to explain fire hydrant operation and maintenance. The operator received assistance in the location of the valves. He now has knowledge of the proper operation and maintenance of fire hydrants, including the importance of a regular exercise program for valves and fire hydrants.

North Carolina, Woodfin.—Woodfin Sanitary District is in Buncombe County and serves 2,100 connections. The water system was experiencing water pressure problems in upper areas and water loss. The State Regulatory people were pushing for some results. The problem area was located and later pinpointed by process of elimination due to interference in attempting to use leak detection equipment. The leak was located under a railroad track where an 8 inch water line was in 16 inch casing. The leak was midway of the encasement and flowed to the end drainage directly into a damaged sewer line. This explained some of the difficulty in locating the leak. It had become an 11,000,000 gpd leak and, when fixed, pressure from the other water system was eliminated. The staff is now much better prepared to deal with this type of problem due to the on-site assistance and training using leak detection equipment and pressure recording equipment, as well as simple field tools, and, most importantly, the process of elimination approach when necessary.

South Dakota, Butte-Meade, DW.—The Circuit Rider was requested to join the cooperative efforts of the Butte County Extension Office, FmHA District Office, and Butte-Meade Sanitary District during a public hearing to discuss the water system projected expansion project. The Circuit Rider was the main speaker, discussing the benefits, process, and potential addition of area ranchers, residents and communities, and the funding process needed. This system needed guidance and information to present to the attendees who are very concerned and in dire need of quality water. The water in this area is difficult to find, and it would be very costly to drill a new well. The benefits of the users hooking up to this system are many; most of all they would receive good quality water. At the present time, many ranchers in the proposed area have to haul the water for livestock and household use. Many people who live on acreage or just a household are also faced with poor quality water and must also haul water. The end result from this meeting was the information provided to the attendees of the possibility of a water system's capability to serve them a sufficient supply of quality water.

Colorado, General, DW.—Spread Eagle Water System is located approximately sixteen miles northwest of Westcliffe, CO. This system serves fifteen year-round connections and uses a ground water source to supply the system. Joe Defries, system operator, contacted CO Rural Water for assistance. The Circuit Rider conducted leak detection on three different sections of water line. Four leaks were found. The amount of water being lost was approximately 3.3 gallons per minute. As a result of this contact, the system saved approximately $500 in leak detection costs and water loss.

Idaho, Lapwai.—The Circuit Rider worked with the Nez Perce Indian tribe on five separate housing developments, investigating meter installation and some type of utility billing system. Possible connection to the city of Lapwai water system for one of the developments was also discussed.

Case Study

Idaho.—The following local water issues represent candidates for assistance:

— *Lapwai*.—The possibility of the City of Lapwai taking over the operation and maintenance of the NezPerce tribe drinking water and wastewater systems that are in close proximity to the city.

— *Worley*.—Currently discussing the possibility of the Coeur D' Alene tribe assisting with the construction of a new well and storage tank. In return the city would operate the system which is on the reservation and includes the city of WORLEY.

—*Kamiah*.—Discussions in first stages for the city to take over the operation and maintenance of the Indian drinking water system in close proximity to the city.

—*Fort Hall*.—Major contamination problem with the water supply. Contamination may be related to chemicals that were used on Indian ground that may by used be some farmers in the area. The system has put in a charcoal filter but the problem still is being discussed.

PREPARED STATEMENT OF THE NAVAJO NATION

Mr. Chairman and Members of the Subcommittee, on behalf of the Navajo Nation, America's largest Indian nation, and President Albert Hale, the Navajo Nation appreciates this opportunity to present the Navajo Nation's fiscal year 1998 funding request to the Subcommittee.

At the outset, I want to thank Chairman Domenici and Ranking Minority Member Reid, as well as the other Subcommittee Members for their attention to the Navajo Nation's needs in the past years. We look forward to continuing our productive relationship with the Subcommittee on funding efforts for Indian energy and water development programs.

THE NAVAJO NATION

The Navajo Nation encompasses 17.5 million acres, spanning the states of Arizona, New Mexico, and Utah. The Navajo Nation lies on the arid and semi-arid uplands of the Colorado Plateau, with an average elevation of 6,000 feet above sea level, and an average annual precipitation ranging from less than 6 inches in the Painted Desert and San Juan River Valley, to more than 20 inches on isolated mountain peaks.

The Navajo Nation is also endowed with significant renewable and non-renewable natural resources, including surface and groundwater, rangelands and woodlands, irrigated farmlands, forests and lakes, fish and wildlife, and substantial reserves of coal, oil, and natural gas.

Despite these natural endowments and our significant economic potential, socioeconomic conditions on the Navajo Nation are comparable to those found in underdeveloped third world countries. The Navajo Nation is characterized by unemployment levels ranging seasonally from 31 percent to 50 percent; per capita income averaging $4,106; and over 56 percent of its people live below the poverty level. Basic "necessities" of life, taken for granted elsewhere in America are sorely lacking in the Navajo Nation: 77 percent of Navajo homes lack plumbing, 72 percent lack adequate kitchen facilities, and 76 percent lack telephone service.

Our rural development deficit contributes to a seemingly never-ending downward spiral. We are constantly seeking to attract jobs and businesses to our reservations to spur economic growth and address our massive infrastructure deficiencies, but those infrastructure deficiencies (and the resulting higher non-wage costs facing businesses locating on reservations) continually undercut and frustrate our efforts. The Navajo Nation's primary source of revenue is derived from its natural resources. Accordingly, the Navajo Nation has made substantial investments of its limited financial resources into the management and development of Navajo natural resources, including water resources development and maintenance.

However, the Navajo Nation's own revenues from taxes and royalties are decreasing; we estimate by as much as 10 percent in the coming year. Depletion of the oil and gas resources and the expected negative impact on coal sales by the recent deregulation of the American energy market has jeopardized the flow of the Navajo Nation's revenue stream. And unlike a very small percentage of Indian nations, the Navajo Nation has not legalized nor benefitted from Indian gaming.

Therefore, the Navajo Nation requests that the Subcommittee direct the Bureau of Reclamation to support the Navajo Nation with the same level of attention, expertise, and assistance which have long benefitted other regions and made possible the prosperity of the west. The federal trust responsibility is not in the province of a single agency, but instead is shared by all federal agencies.

Some of the projects needed in the Navajo Nation are obvious and have been defined for some time. For example, there are at least 12 major unsafe dams in Arizona and New Mexico. These twelve dams total 71,130 acre-feet for surface water storage, approximately 90 percent of the total Navajo Nation storage capacity. Eight of these dams are currently listed as "high" or "significant" hazards on the Department of the Interior's technical priority list of deficient dams. Correction of deficiencies to these dams may require as much as $100 million.

Another project for which planning was first authorized in 1971, is the Navajo-Gallup Pipeline. This pipeline would serve the eastern part of the Navajo Nation, Window Rock, AZ, and the city of Gallup, NM—a widespread area where groundwater is not available in quality or quantity. Planning assistance for the Pipeline is critical at this time to answer questions raised by constraints on water availability dictated by the application of the Endangered Species Act in the San Juan River Basin. Additionally, the Navajo Nation requires research and planning to determine solutions to the other water needs of the Navajo Nation.

FISCAL YEAR 1998 FUNDING NEED

The Navajo Nation is seeking continued assistance from the Bureau of Reclamation and the Department of the Interior to actively manage the future development of Navajo water resources and these requests reflect necessary funding for the following high priority programs.

Indian Dam Safety Technical Assistance ($500,000)

In 1994, Congress enacted the Indian Dam Safety Act (Public Law 103–302), providing for the maintenance of dams on Indian lands. This Act (Section 4(g)) authorizes the Secretary of the Interior to "obtain technical assistance on a non-reimbursable basis from other department and agencies." The Navajo Nation strongly recommends that the Subcommittee provide funding to the Bureau of Reclamation for this program, since annual appropriations funded under the Bureau of Indian Affairs do not come close to meeting the needs of the Navajo Nation.

The Navajo Nation Safety of Dams program was created to coordinate with the BOR and the BIA all activities related to the completion of structural improvements to hazardous dams. This program will continue the necessary actions and improvements to address the safety deficiencies identified through the safety evaluations of existing dams project.

Drought Contingency and Water Management Plan ($200,000)

In 1997, the Navajo Nation and Bureau of Reclamation will begin Phase 3 of an ongoing project (started in 1995) to develop detailed plans and recommendations for a drought response and rural water supply plan, and develop a database and data base management system for groundwater monitoring within the Navajo government. Phase 1 identified issues that water management planning efforts needed to address. Phase 2 will develop public consensus for the proposed planning effort.

Technical Studies for the Navajo Nation Clear Creek/Chevelon Water Supply Project ($225,000)

Funding is requested to evaluate water development projects on the Navajo Nation. This request would assist the Navajo Nation in developing a plan for water pipeline to serve Navajo communities in the southern portion of the Navajo Nation and to acquire technical information to develop a project description adequate for Endangered Species Act Section 7 consultation and NEPA requirements. The study area is the three canyon area south of the Navajo Nation, which includes Clear Creek, Chevelon Creek, and Jacks Canyon Creek. The proposed project will deliver water from this area to the communities near Leupp, AZ for municipal and industrial purposes.

Planning Activities for the Navajo-Gallup Pipeline Project ($150,000)

Existing groundwater supplies in northwest New Mexico and northeastern Arizona are inadequate to meet expected future demands. This funding for preliminary studies for the San Juan River Navajo-Gallup Pipeline Supply Project will assist in the planning of a water pipeline to serve communities in the eastern portion of the Navajo Nation and the City of Gallup, NM. Obstacles created by the Endangered Species Act seriously jeopardizes the completion of this project.

CONCLUSION

On all Indian reservations water is life. The Navajo Nation hopes that the Members of this Subcommittee understand the importance of water resource development and protection to not only the Navajo people, but also to the entire Southwest. The Navajo Nation appreciates the support of the Subcommittee.

PREPARED STATEMENT OF IRIS Z. BLETSCH, CHAIRMAN, BOARD OF DIRECTORS AND GALE WM. FRASER, II, P.E., GENERAL MANAGER/CHIEF ENGINEER, CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT, LAS VEGAS, NV

Presented herewith is testimony in support of appropriations in the amount of $30,400,000 necessary for the U.S. Army Corps of Engineers to continue construction of the Tropicana/Flamingo Washes flood control project. This project is located in the rapidly growing Las Vegas Valley in Southern Nevada.

The Las Vegas Valley has experienced unprecedented growth over the past twenty-five years and all signs indicate that this growth will continue for several more years. People have moved into the area from all parts of the nation to seek employment, provide necessary services, and become part of this dynamic community. Clark County's population has boomed from 616,650 to slightly more than 1.1 mil-

lion during the past decade. It is estimated that 5,800 people relocate to the Las Vegas Valley every month of the year. The latest statistics show that nearly 30,000 residential units are built annually. Once all these factors are combined, the result is that the Las Vegas Valley is one of the fastest growing areas in the nation.

Since 1960, the area has also experienced at least seven "million dollar floods"—floods which caused in excess of $1,000,000 in damages to public and private properties. In that same time frame at least 23 people have lost their lives in nine separate flash flood events. In 1990, three people died in separate flooding incidents, two drownings occurred in 1992, and in 1995 there was still another death by drowning.

Much of this devastation and loss of life has occurred along the Flamingo Wash. In all likelihood, the level of damages and deaths would have been severely diminished or would have been non-existent had the projects proposed by the Corps of Engineers been in place. These facilities are designed to collect the flood flows from a 160 square mile contributing drainage area, funnel them into detention basins, and then release these flows through the urbanized area of the Las Vegas Valley at non-damaging rates. Because flow over the alluvial fans which ring the Valley is so unpredictable in terms of the direction it will take during any given flood, all of the components of the Corps' plan are critical.

The plan identified in the Corps' Feasibility Study for the Tropicana and Flamingo Washes Project includes four debris basins, four detention basins, 28 miles of primary channels, and a network of lateral collector channels. The debris basins are designed to collect flood flows from undeveloped areas at the headwaters of the alluvial fans and trap large bedload debris before it enters the channels and causes erosion damage. The detention basins will function to greatly reduce the magnitude of the flood flows so that the flows can be safely released through the developed urbanized area at non-damaging rates. The outflow from the debris basins and the reduced flows from the detention basins will be contained in the primary channel system which will also serve as outfalls for the lateral collector channels. While this latter element is considered to be a non-federal element of the entire plan, it is a necessary element for the plan to function properly.

The Feasibility Report for this project was completed in October 1991, and Congressional authorization was obtained in the Water Resources Development Act (WRDA) of 1992. The first federal appropriations to initiate construction of the project became available through the Energy and Water Resources Development Appropriations Bill signed into law by the President in October 1993. Subsequent appropriations have allowed for the continued implementation of the project. Appropriations to date have totalled $27,945,000. The total cost of the project is $217,500,000.

Last year the Regional Flood Control District was notified by the District Engineer of the Los Angeles District, U.S. Army Corps of Engineers, that due to reduced federal budget expenditures, fiscal year 1997 funding was greatly reduced along with subsequent year anticipated expenditures. The delay in funding, in the fastest growing community in the nation, will mean increased costs due to lost opportunities and inflation. The net result is expected to delay the completion of the project from year 2001 to year 2006, a five year delay.

Certain elements of the Corps' plan have already been constructed by the local community but require modifications in order to fit into the Corps' plan and fulfill the need for a "total fan approach" to the flooding problems of the Las Vegas Valley.

The Red Rock Detention Basin was constructed by Clark County in 1985 and modifications by the U.S. Army Corps of Engineers were recently completed in September 1996. The releases from the basin have been reduced and its capacity to hold flood waters are enhanced by a combination of increasing the height of the embankment, and excavating additional material from the impoundment area, thereby increasing the level of downstream protection provided by this feature. Although this was the first feature constructed, the immediate benefits realized was the removal of approximately five square miles and 4,754 parcels from the alluvial fan flood zones.

Clark County also constructed the Upper Flamingo Detention Basin. This facility was completed in February 1992 and is one of the main components of the entire program. Under the Corps' plan, the releases from this feature will also be reduced and its storage capacity increased. The Regional Flood Control District and Clark County have been working with the local development community in an effort to have them remove the excess sand and gravel from the impoundment area of this facility. Our goal is to have local contractors remove this surplus material for their own use at no cost either to the federal or local governments, thus providing a significant savings to total project costs as well as to the construction schedule.

As local sponsors for this important flood control project, both the Regional Flood Control District and the Clark County Public Works Department anxiously antici-

pate the construction start of each feature of this project. The Project Cooperation Agreement was fully executed in February 1995 and construction of the different features is expected to continue over the next years. The District has completed a right-of-way acquisition plan which identifies the land ownership of all of the parcels in the area of the Corps' project. As soon as the Corps establishes the alignment for each individual feature of the project we are in a position that will allow us to acquire the necessary parcels in the most expeditious manner possible. The District has also been setting aside over $600,000 each month in order to accrue sufficient funds to meet our share of the total project costs. This may not sound like a significant amount in terms of the federal budget; however, it is important to realize that $600,000 is roughly 25 percent of the District's total monthly revenues. Obviously, this is a very important public works project to this thriving community.

Details of the Administration's fiscal year 1997 Civil Works Budget Request indicates that $20,000,000 is proposed for the continued construction of this project. The Los Angeles District of the U.S. Army Corps of Engineers informs us that their capability for fiscal year 1998 is $30,400,000. This funding will allow the project to begin to get back on schedule as originally envisioned when the Project Cooperation Agreement was executed. Furthermore, funding at this level will allow the project to take advantage of opportunities that will present themselves during 1998. While these opportunities are hard to quantify, opportunities in the fastest growing region in the nation will become available and will probably consist of construction of certain features in advance of other local infrastructure, thereby avoiding construction conflicts and increased construction costs.

This is an important public safety project designed to provide flood protection for one of the fastest growing urban areas in the nation. We ask that the committee provide the Secretary of the Army with the $30,400,000, the Corps of Engineers' capability in fiscal year 1998, in order to allow the U.S. Army Corps of Engineers to continue the design and construction of additional phases of this desperately needed flood control project.

The committee is aware that proactive flood control is the investment required to prevent loss of life and damages. Flood control is a wise investment that will, in the long run, pay for itself by preserving life and property and reducing the probability of repeatedly asking the federal government for disaster assistance. Therefore, when balancing the federal budget, a thorough analysis should prove that there will be substantial future federal savings in disaster assistance that will warrant the continued level of funding through the Civil Works Budget appropriations.

MIDWEST WATER RESOURCE DEVELOPMENT PROJECTS

PREPARED STATEMENT OF J.M. PETERSON, PRESIDENT, AND DARREL G. CURRY, VICE PRESIDENT, MISSOURI RIVER BANK STABILIZATION ASSOCIATION

Mr. Chairman and Members of the Subcommittee: The Missouri River Bank Stabilization Association, its officers and members, thank you for the opportunity to present this statement to you concerning the fiscal year 1998 budget.

The project to which this statement applies is the Missouri National Recreation River project, authorized by the Congress in 1978 per Section 707 of Public Law 95–625. The Association's request for fiscal year 1998 is $200,000 for operation and maintenance of structures built prior to 1978 pursuant to Section 32 of the Streambank Erosion Control and Demonstration Act. Funding is also needed for providing additional access to the river, securing shoreline easements to increase wildlife habitat, protecting timber stands along the river, providing bank protection where needed and to meet such other needs as may be required to maintain progress toward completion of this project.

This project covers the fifty-nine mile segment of the Missouri River from Yankton, South Dakota, to the Ponca, Nebraska, State Park. Here, the Missouri is still in a relatively natural or wild state. Marking the boundary between South Dakota and Nebraska, it is the sole remaining reach of the river below the mainstem dams which is still in a relatively natural state. The Missouri below Yankton differs markedly from that above. Upstream, the Missouri occupies and is confined by a geologically young "valley", a valley reshaped and narrowed by the latest glaciation. Below Yankton, the Missouri flows in a "geologically old" valley. Here, in a miles-wide valley, the Missouri meanders at will until reaching its channelized segment near Ponca, Nebraska. While the mainstem dams have all but eliminated the Missouri's flooding in the fifty-nine mile reach, the river's historic appetite for erosion persists. Indeed, its capacity for erosion has increased as its sediments have been deposited in the slack waters above the dams. The largely sediment-free waters dis-

charged into the reach of river here involved have an increased capacity for erosion. In places, this erosion has truly savaged the shoreline. (The Streambank Erosion Control and Demonstration Act sought to curb such erosion.) With the annual flooding (the "June rise") a thing of the past, there today is no restoration of eroded lands.

Of the $21,000,000 authorized expenditure for this project, some $2,000,000 has been spent. Your prior support of the project has already provided improved access to the river, improved boat landings and the addition of interpretive signage.

Currently, the National Park Service is engaged in a review of the extant management plan; a revision is expected to be presented for public comment later this year. Among needs and objectives discussed at length by the National Park Service's planning team and which will be included in its revision, are those items for which the Association hereby seeks funding.

For a more general reason, funding is sought because of the impending commemoration of the bicentennial of the Lewis and Clark Expedition, 1804–1806. Visitation to this reach of the river is already increasing; members of the Lewis and Clark Trail Heritage Foundation visited it in August, 1996. A documentary of the trail is being made by Ken Burns and Dayton Duncan; much footage of the "wild Missouri" was shot on this reach of river. Characterized yet by snags, sandbars, bends, beaches, chutes, islands, chalk cliffs, timbered bluffs, wildlife and waterfowl, this grand old river is well worthy of the preservation and protection Congress intended to achieve by its inclusion as part of the "Wild and Scenic Rivers" System.

In conclusion, the Association would like to thank you for the help you have so readily provided in prior years and for your concern and consideration for those farmers, outdoorsmen, environmentalists and others comprising the Association.

PREPARED STATEMENT OF JAY L. KIMBLE, MAYOR, CITY OF STILLWATER, MN

Chairman Domenici and Members of the Appropriations Subcommittee, I thank you for the opportunity to submit this testimony requesting the remaining $2 million needed to complete Phase II of the Stillwater, Minnesota flood control project. Phase I, the repair and reconstruction of the old levee wall will be completed this Summer, when the flood waters recede. Most of the construction work on Phase I was accomplished during 1996 with the $2.4 million appropriated for fiscal year 1996.

The $500,000 appropriated in fiscal year 1997 has enabled the U.S. Army Corps of Engineers to develop the plans and specifications for Stage II, and to complete some work on Phase I. According to the Design Memorandum, the total cost for Phase II will be approximately $3 million. The Minnesota State Legislature appropriated $375,000 and the City of Stillwater has placed in the escrow account the remaining $375,000 for the non-Federal matching funds for Phase II. The work on Phase II is scheduled to begin February 1, 1998.

LEGISLATIVE HISTORY

This project was authorized for $3.2 million in the Water Resources Development Act of 1992, and this Committee designated $2.4 million in Federal funds for the purpose of designing, repairing, extending, and expanding the levee wall system in the fiscal year 1994 Appropriations Act. The Minnesota Legislature provided half of the required non-Federal matching funds of $775,000 in appropriations actions in 1992, 1994, and 1996.

To date, all non-Federal matching funds for Phase II are either in the escrow account, or available for transfer to the escrow fund from the State account. Additional State funding will be requested in the 1998 Legislative Session for Phase III of the project.

Recognition that additional funds would be required to complete the project, the U.S. Congress amended the authorization in the Water Resources Development Act of 1997, and increased the project's authorization to $11.6 million. This level of funding will permit the reconstruction of the existing levee, the extension of the levee to the North, and the expansion of the levee wall by the construction of a flood wall. The project will then provide the City with a fifty year flood protection program, and the ability to increase the system to withstand a 100 year flood.

A study will be conducted by the Corps in 1998 to validate the economic feasibility of the construction of the flood wall in Phase III of the project. This does not, however, affect the construction work planned for Phase II for which funds are requested in the fiscal year 1998 Appropriations Bill.

Project Phases.—The $2 million requested will be used for the construction of the 900 foot levee extension North of the existing levee walls. It is designed to prevent

the annual flooding that occurs each Spring during the snow melts. There may also be a minimal amount for the final costs associated with the Phase I work.

Phase I included the repair and reconstruction of the existing 1,000 foot levee wall system where severe deterioration of the lower wall has occurred, the development of the plans and specifications for Phase I, the preliminary design work for Phases II and III, and a rip rap treatment of the South end of the levee. The rise in elevation at the South of the old levee permits rip rap to be used rather than extending the levee wall system.

Phase II consists of the extension of the levee wall 900 feet to the North of the existing levee wall. This work will require a 4–6 foot fill along the shore line. The northern points along the riverfront is the location that floods annually, causing the emergency roadway adjacent to the levee to become impassable for 4–6 weeks each Spring.

Phase III includes the construction of a secondary flood wall 125 feet inland from the existing levee. The wall will extend about two feet above the ground. Sheet piling will be driven 15 to 20 feet below the surface to prevent the seepage through the porous soil that occurs during flood conditions. The secondary flood wall will provide the City with a 50-year flood protection plan, and with the use of sandbags, a 100 year protection program.

PROJECT SCHEDULE

Phase I—Construction is scheduled for completion by August 1, 1997.

Phase II—Work on project design, plans and specifications began March 1, 1997, and is to be completed by December 1, 1997.

Phase II—Advertise for bids on January 1, 1998.

Phase II—Award bid and initiate construction on February 1, 1998.

Phase II—Construction complete on Phase II by February 1, 2000.

Phase III—Initiate study on for flood wall economics on November 1, 1997.

STATUS OF PROJECT FUNDS

The Design Memorandum was developed by the Army Corps of Engineers, and completed in March, 1995. It includes the preliminary design for all three phases of the project. The completion of the project will require $8.7 million in Federal funds, and $2.9 million in non-Federal matching funds.

Funds credited to the project thus far include Federal appropriations of $2.4 million in fiscal year 1994, for Phase I, and $500,000 in fiscal year 1997 for Phase II. The State Legislature has appropriated half ($400,000) of the non-Federal matching funds for Phase I in 1992 and 1994. The State also appropriated $375,000 in 1996, for half of the non-Federal matching funds for all of the project's Phase II.

The City of Stillwater has contributed $400,000 toward the remaining matching funds needed for Phase I, and has placed an additional $600,000 in the escrow account for all of Phase II and part of Phase III. The City of Stillwater has placed $1.01 million in escrow for the project, and the State has allocated $775,000 for a total non-Federal match of $1.785 million. The contributions by the City and State will provide matching funds for $7.14 million in Federal funds.

FLOODING ANTICIPATED THIS YEAR

Flooding North of the levee where Phase II construction will take place is an annual event. Ordinarily, these annual floods close several businesses near the riverfront, but more critical, it prevents traffic on the emergency road adjacent to the levee and the river. This roadway is used by the emergency medical teams and law enforcement personnel who respond to all accidents on the river. Further, the Stillwater Fire Department relies on the river and the roadway for additional water for downtown fires. Neither of these emergency units can reach the river during the 4 to 6 weeks of flooding each Summer.

The Winter of 1996–97 has been a difficult one for the upper midwest. Snows from November, 1996 are still on the ground just North of Stillwater. Without any more snows or rain, the St. Croix River is expected to crest on April 15th this Spring at 690 feet. This is three feet above the high water levels and flooding experienced in 1993.

The City has begun construction of a 2,000 foot dike that will provide some protection to the citizens and businesses in the flood plain. As described to this Committee in previous testimony, the soil is very porous as a result of the sawdust and wood debris from the nine lumber mills that lined the riverfront in the last half of the 19th century. Seepage is so extensive that sand bags do little in preventing flooding in the historic downtown section of the City.

BACKGROUND AND PROGRESS TOWARD RESOLVING THE PROBLEMS

The levee wall system is a double wall structure in the shape of a stair step. The lower wall had deteriorated to such an extent that over half of it was completely gone. This permitted high water levels and recreational boating on the river to eat away at the soft under belly of the riverfront behind the levee. Phase I of the project will have eliminated this problem when work is completed this Summer.

Stillwater is located on the West bank of the St. Croix River. It provides the boundary line between Minnesota and Wisconsin for about 120 miles until the St. Croix flows into the Mississippi River. The St. Croix is one of America's first "Wild and Scenic Rivers," and is subject to legislation that protects these beautiful landmarks of our nation. One of the few lift bridges in the upper midwest spans the river from Stillwater to Houston, Wisconsin. The base of the bridge is built into the levee wall. Any failure of the wall would result in the closing of the bridge for an extended period of time, according to the U.S. Army Corps of Engineers.

Extensive work on the sewer system in downtown Stillwater was completed in 1992, at a cost of more than $7 million. The most serious concern, however, is the major sanitary sewer trunk line which services the City. It is located less than 100 feet from the levee wall, and runs parallel to the wall. Given the make up of the soil in that area, extensive flooding along the riverfront could result in the failure of the pumping system, and the dumping into the river much of the 1.9 million gallons of raw sewage that passes through the system each day. The Metropolitan Waste Control Commission and the Minnesota-Wisconsin Boundary Area Commission have both expressed their concerns and fears to the City of Stillwater about this pending disaster. The solution is the extension of the levee to prevent the flooding of the area.

Corps officials stated, "* * * Subsurface soils investigations along the waterfront in Stillwater identified pieces of glass, wood and/or layers of sawdust to depths of more than twenty feet below the ground surface as remnants of the early logging and sawmill activities."

Another Corps report stated, "The extent of the wood and sawdust precludes the economics of excavating to remove these materials and backfilling with satisfactory soil."

While the repair and reconstruction work in Phase I of the project substantially reduces the risk of a failure of the wall, it can not be eliminated until the levee is extended and the annual flooding of the area diminished.

HISTORICAL SIGNIFICANCE OF THE PROJECT

The historic implications of the retaining wall system, and its solution, are extremely important to the entire State. In recognition of the historic significance of Stillwater as the "Birthplace of Minnesota," the U.S. Army Corps of Engineer conducted an excellent study completed in July, 1985, entitled, "Historical Reconstruction of the Riverfront: Stillwater, Minnesota."

The purpose of the study was to provide the Corps of Engineers with information to be used in the review of options for flood control of the downtown area of the City. The research identified 117 sites in the floodplain as being significant to the entire State. Twenty-three of these sites are listed on the "National Register of Historic Places" by the U.S. Department of Interior. All are threatened by the lack of an effective flood control system for the community.

The U.S. Army Corps of Engineers is obligated to protect the cultural or man made environment according to the Corps 1985 study. The obligation is embodied in that these laws set forth Federal leadership in locating, inventorying, and protecting such sites. The proposed reconstruction and extension of the retaining wall system does not threaten, damage, nor destroy any of the identified historical sites in the area. The project as authorized in 1992 and 1996 in the Water Resources Development Acts provide the protection necessary to preserve these historic structures for future generations.

FEDERAL INVOLVEMENT ON THE ST. CROIX

The St. Croix River at Stillwater, Minnesota is under Federal control and management. Further, the Corps of Engineers provides, under contract, the dredging of the river. Barge traffic, boat construction, commercial passenger traffic, and extensive recreational boating continue to maintain a very active port at Stillwater. It is this very activity that has contributed, under the authority of the Federal government, that has contributed to the deterioration of the waterfront, according to the engineers. The Coast Guard shares responsibility with the States of Wisconsin and Minnesota in patrolling the river.

ACTION REQUESTED

Based on the information and data from the "Design Memorandum" and information prepared by the U.S. Army Corps of Engineers, $2 million in Federal support will be needed in fiscal year 1998, and is requested from this Committee. In recognition of the urgent need for the completion of this project, Congress increased the authorization in the Water Resources Development Act of 1997 to provide for the completion of Phase II, and the opportunity to provide flood control measures in Phase III.

This Committee provided the resources in the fiscal year 1997 Appropriations Bill to develop the plans and specifications for Phase II, the extension of the levee wall system. This work is currently underway, and will be completed this year as planned. Now the work must be done in fiscal year 1998 to carry out these plans. To delay this action will result greater cost to the Federal, State, and local governmental bodies. But even of more importance, we would be gambling the safety and property of our citizens in the St. Croix Valley.

We are in full compliance with the National Environmental Protection Act, the National Historic Preservation Act (16 U.S.C. 470(f) and Section 110(f), 16 U.S.C. 470h–2(f), the Minnesota State Historic Preservation Office, and have met the special provisions and requirements of Federal and State laws that protect the wild and scenic rivers, and other State and Federal laws enacted to protect the environment and historic sites. We have been working with these agencies for many years in anticipation of the construction and extension of the levee system, and have a summary listing of their letters of support for the project.

For these reasons we respectfully request that this Subcommittee appropriate the sum of $2 million for the completion of Phase II construction in the Energy and Water Development Appropriations Bill for fiscal year 1998. Thank you for the opportunity to bring this critical matter to your attention through this statement. We would be pleased to respond to any questions the Members of this Committee may have.

PREPARED STATEMENT OF ROBERT J. BYRNES, MAYOR, CITY OF MARSHALL, MN

Chairman Domenici, and Members of the Appropriations Subcommittee, I appreciate the opportunity to submit this testimony on behalf of the City Council and the citizens of Marshall, Minnesota. We are requesting $750,000 in federal funds for the construction of Stage II of the flood control project authorized in the Water Resources Development Act of 1986. We believe the $250,000 more than requested by the Corps of Engineers can be effectively used in fiscal year 1998 to shorten the project schedule by at least three months.

The Conference Committee designated $400,000 in the fiscal year 1997 Appropriations Bill. These funds, in addition to $490,000 of non-Federal funds, have been used for Stage 1 construction, and the preparation of plans and specifications for Stage 2 of the project. The plans and specs for Stage 2 are being prepared by the St. Paul District, and are scheduled for completion by December 31, 1997. The City of Marshall has provided an additional $320,000 for the removal of silt from the diversion channel and other preparatory work.

The Corps is scheduled to provide the City of Marshall with the project "footprint" on April 1, 1997. This will permit the City to move forward in the acquisition of the necessary real estate needed for Stage 2 of the project. While the project schedule provides for the property acquisition to be completed in March, 1998, we will be able to complete the acquisition for the downstream part of the project on the Northeast section of the City by September 1, 1997. This will permit us to begin the initial work on this section of the project four months earlier than the project schedule, and to coordinate this work with the Ditch 62 project. The amendment to the schedule will not only reduce the length of time for the project completion, but provide the opportunity for cost savings on both the flood control project and the Ditch 62 project.

The vulnerability of the community to severe flood events creates an urgency to complete this project as soon as reasonably possible. As this testimony is being prepared, the City is under threat of still another flood event. The exceptional snows this past winter has made the City susceptible to severe flooding this Spring. The Corps of Engineers has provided $60,000 for the construction of dikes along the floodplain. The flood prevention dollars amount to 15 percent of the total fiscal year 1997 appropriation. Depending on the rate of the snow melt, the Redwood River could rise to well over flood stage. Even a moderate rain season this Spring could maintain the river at or above flood stage. Any acceleration of the construction schedule will assure the safety of our citizens and property that much sooner.

PROJECT AUTHORITY, FUNDING, AND STATUS

The Marshall Flood Control Project was authorized in the Water Resources Development Act of 1986. The total project is estimated to cost $9.98 million of which Federal costs are estimated to be $7.38 million, with non-Federal costs of $2.76 million. The non-Federal costs have been provided through the State flood mitigation grant program, and by bonding by the City of Marshall. The Design Memorandum and Environmental Assessment were completed and approved in 1987.

The Project Cooperation Agreement (PCA) has been successfully negotiated between the Marshall City Council and the District Office of the Army Corps of Engineers, and was given final approval by the Corps Headquarters in Washington, D.C. The required escrow account has been established. Only temporary easements and a five-acre dredged materials disposal site were needed for Stage I construction. The work on Stage 1 is scheduled for completion at the end of 1997.

The plans and specifications for Stage I were completed and approved in September of 1993. The $850,000 fiscal year 1996 appropriation for the project has permitted the Corps to move forward with the advertisement for construction bids for Stage I. The development of plans and specifications for Stage II were initiated on February 28, 1996, according to the Corps' project schedule. The City is responsible for the dredging of the channel at a local cost of $318,000, and will be incorporated into Stage I construction, and completed in fiscal year 1997.

STAGE I—CORPS SCHEDULE [1]

Activity	Beginning date	Completion date
Plans and Specs Initiated	.....	([2])
Plans and Specs Approved	.....	9/30/93
Initiate Real Estate Acquisition	.....	9/9/96
Construction Contract Advertised	6/30/96	8/24/96
Construction Contract Awarded	8/31/96	9/27/96
Construction Contract Completion	.....	12/31/97

[1] The initiation of Stage II construction is not contingent on the completion of Stage I construction.
[2] Complete

PROJECT LOCATION

The City of Marshall is located in the Southwest corner of the State of Minnesota, about 145 miles southwest of St. Paul. It is near the center of the Redwood River basin. Southwest State University, the business district, and most of the homes of the nearly 14,000 citizens are located in the floodplain of the Redwood River. Marshall serves as the county seat of Lyon County, and is the commercial and agricultural center for the region.

The Redwood River enters the southwest corner of the City, winds its way through the City, exiting at the northeast boundary near the University campus. The Redwood River basin serves an elongated drainage area of approximately 743 miles. The river's elevation drops at the significant rate of 19 feet per mile until it reaches the City. There the river slope flattens out to an average of about 4 feet per mile. The lack of a confining valley, and the reduction in grade on the plain, contributes significantly to overland flooding in the Marshall area. The geological decline in the elevation in the 50 miles from the watershed area to the City of Marshall is greater than the Mississippi River elevation decline from Minneapolis to New Orleans (See Attachment.)

HISTORICAL SUMMARY

Water and land related problems in the Minnesota River basin was first investigated by the St. Paul District Engineer in 1934, but his study did not address the flooding and related problems in Marshall. In 1960, after the severe floods of 1957, improvements were recommended by the Corps which included the construction of levees and a floodwater diversion channel.

This flood control project was completed in 1963, by the U.S. Army Corps of Engineers to, "provide protection for the people and property of Marshall from the frequent flood risks." The major feature of the project was a 2.4 mile diversion channel around the west and north sides of the City, a 1,840 foot levee at the upstream end of the project, and other features. The channel was designed to handle a 6,500 CFS

flow. The overflow, then, would move naturally into the Cottonwood River Watershed south of Marshall.

In 1969, a flood of 8,090 CFS was experienced in Marshall. The river channel both upstream and downstream from Marshall was inadequate to convey the 1963 design flows either to or from the diversion channel. At flows greater than 3,500 CFS, floodwaters bypass the diversion channel and flood the inner City of Marshall.

As a result of the failure of the 1963 flood control project to protect the City, other studies were conducted by a private engineering firm under the direction of the Corps in 1974. The Corps completed a flood control report in 1976, and a feasibility study in 1979. This report was updated by a reevaluation of the problems in 1984. The current project was then authorized in the 1986 Water Resources Development Act. It is important to note that the project as constructed in 1963, has worsened the potential of flooding for the City. The rate of flow is not adequate to move the flood waters through the diversion channel, and other problems.

The three "Holiday Floods of 1993" (Mother's Day, Father's Day and Independence Day) occurred at both ends of the diversion channel, causing hundreds of thousands of dollars in damages to homes, businesses, and the City's infrastructure. As the water levels remained at flood stage throughout the summer, it created an atmosphere of fear and unrest among the citizens of Marshall.

In 1995, the Redwood River was again flowing at capacity, and the City of Marshall narrowly avoided a disaster worse than the floods of either 1969 or 1993. From 9 to 15 inches of rain fell near Montevideo, Minnesota, less than 40 miles from the Redwood Watershed District. If the storm had moved only a few miles to the southwest, the flood waters would have engulfed the City at a rate of 8,000 to 12,000 cubic feet of water per second. This is a much greater water overflow than that which occurred in the disastrous flooding of 1969, and as much as three times greater than the 1993 floods.

The District Office of the Corps of Engineers provided estimates stating that the City would have incurred millions in property damage, and that flash flooding of this nature could well have resulted in the loss of lives. Corps officials stated that flash flooding of this magnitude would have made most emergency measures futile. As a result of the flat terrain in and around the City, and much of the Marshall community would have been under water.

PROJECT COMPLETION DELAYED

The Marshall City Council was deeply concerned regarding the project delays, and changes in the completion dates. The project was originally scheduled for completion in the Summer of 1998. It was first extended to the fall of the year 2000, then extended even further to September, 2001. Now it has been moved back to the Fall of the year 2000. The project was originally scheduled for three years of construction work.

The current delay in the project completion date appears to be in the development of the plans and specifications for Stage 2 of the project. Initiated on February 28, 1996, the plans and specs are not scheduled for completion and approval until December 31, 1997, two months less than two years in preparation. It should be noted that Stage I construction work planned for 1996, but being done in 1997, is not a requisite for Stage II construction.

The project "foot print" is requisite to the acquisition of real estate for the project. Generally, the "footprint" is determined early on in the development of the plans and specs, and good have been available to the City so real estate acquisition could have begun much earlier. If the "footprint" is provided on April 1, 1997, as scheduled, the land for the downstream portion of the project can be obtained in 3 to 4 months, permitting construction to begin on Stage 2 in the Fall of 1998. The new schedule delays the initiation of land acquisition for nearly a year, or until after the plans and specifications for Stage II have been completed by March, 1998. The remaining real estate could then be obtained by March, 1998.

COORDINATION WITH COUNTY DITCH NO. 62 DRAINAGE SYSTEM ESSENTIAL

In addition to the Marshall Flood Control Project, the overall protection of the City requires the reconstruction and modification of the storm sewer drainage system concurrently with the work of the Corps. The examination of the drainage problems was acknowledged in the General Design Memorandum developed by the Corps for Marshall, but is not included, nor is it a part of the funding of this project.

County Ditch No. 62 serves as the storm sewer drainage system for about 60 percent of the City's corporate limits. The Ditch extends along the northeast part of the City, in close proximity to the levee construction required for the Corps flood control project, and feeds into the Redwood River. With the growth of the commu-

nity, and the development of property and the University campus, since the construction of the Ditch in 1958–9, the flooding problems in the City have been exacerbated by the lack of drainage and poor water movement in a system that is no longer adequate for the community. Construction is scheduled to begin in the Summer of 1997.

The City of Marshall, in cooperation with Lyon County and the State of Minnesota, a comprehensive storm water system has been planned, designed, and is jointly funded by FEMA, the State of Minnesota, Lyon County and the City governments at a total cost of slightly more than $3 million. There are elements of the Storm Sewer/Ditch Project that are closely associated with the Flood Control Project.

1. Construction work for both projects will be required in the same northeastern section of the City;

2. Ponding areas are required for both projects; 7 acres for the flood control project, and 20 acres for the C.D. No. 62 project. Both ponding areas will be located in the northeast section of the City.

3. The C.D. No. 62 Project must remove some 400,000 cubic yards of soil from the ponding area and the ditch. The flood control project may require some of this soil as fill, and topsoil for disturbed areas. The Design Memorandum calls for the purchase of top soil from local suppliers.

4. Unless flood control project is constructed in association with the C.D. No. 62 Project, the back up of flood waters can render the Ditch improvements ineffective.

5. Both projects require the acquisition of real estate in the same area. By coordinating these efforts, the acquisition of property can be accomplished more effectively, and at less cost to both the projects. The lack of coordination between the two projects will have the potential to create delay factors in one or both of the projects.

The coordination of the construction of these two water resource development projects has the potential for reducing costs, and avoiding overlap and contradictions that may disrupt, or otherwise delay the construction of either or both projects. An ineffective drainage system can defeat the purposes of the flood control project, and the delayed completion of the flood control project opens the possibility of damaging a newly constructed drainage system.

Working together, the goals of both projects can be accomplished in a timely manner, at less cost to governments at all levels. It will, however, require that the Corps' schedule for construction of the Marshall project be modified somewhat to accommodate the differences in the project time lines. Any reductions in the timeline of the project can be accomplished by reducing the time allocated to the City for the purpose of real estate and easement acquisitions, and by not delaying unnecessarily the initiation of new activities. A request has been forwarded to the St. Paul District Office of the U.S. Army Corps of Engineers requesting a meeting to resolve these differences, and to move forward to complete the project in a reasonable and timely manner.

STAGE II—CORPS SCHEDULE

Major milestones	Date of action	Completion date
Plans and Specs Initiated	2/28/96	2/28/96
Plans and Specs Submitted	2/28/97	11/30/97
Plans and Specs Approved	12/31/97	12/31/97
Initiate Real Estate Acquisition	3/31/97	3/31/97
Real Estate Acquisition Complete	3/01/98	3/01/98
Final Real Estate certified/LERRD	3/01/99	3/01/99
Construction Contract Advertised	3/15/98	3/15/98
Construction Contract Awarded	4/30/98	4/30/98
Construction Contract Completed	9/30/00	9/30/00

The City believes that the construction of Stage II can and should be awarded by October 1, 1997, thus shortening the project completion substantially.

—The Design Memorandum has designated the approximate number of acres for which fee titles would be needed (109 acres), perpetual levee easements (29 acres), perpetual channel improvement easements (41 acres), dredged material disposal site (5 acres), perpetual flowage easements (13), and temporary construction easements (24 acres).

—The "footprint" for the construction sites could have been provided within 90 days of the initiation of the Stage II plans and specifications. If it is provided on April 1, as scheduled the downstream acquisitions can be completed by the end of July permitting and construction work to begin in the Fall of 1997.

The City can complete the acquisition of property and easements in 9 months, and Stage 2 construction continuing in the Spring of 1998.

Stage II construction can then continue from May 1 through November, 1998, the "Good weather months" in Minnesota.

BENEFITS RECEIVED FROM THE ACCELERATED SCHEDULE

The benefits achieved by the modified schedule are significant for the community as well as the governmental agencies supporting the project.

1. The citizens of Marshall and their property will be protected from the severe flooding that continues to threaten their community in recent years.

2. The modified schedule will permit the Flood Control Project and the C.D. No. 62 project to move along on parallel tracks, avoiding duplicative efforts, and providing a cost savings for both projects.

3. The different completion dates for the two water resources project create a situation where the construction work on either project is vulnerable to the elements should a severe Spring run-off or heavy rains occur during the construction period. Such an event would result in certain project delays and additional project costs.

4. The real estate and easement acquisitions will move much more quickly, efficiently, less costly, since there is some overlap in the flood control project and the Ditch 62 project.

For these reasons, we respectfully request this Subcommittee to provide $750,000 of Federal funds in the fiscal year 1998 Appropriations Act to initiate the work required under Stage II of the Marshall Flood Control Project. Thank you for the opportunity to bring this critical matter to your attention through this statement. I will be delighted to respond to any questions you may have about the project

ATTACHMENT 1

REDWOOD DRAINAGE BASIN

The Watershed.—The movement of water in the Marshall area has had a strong influence on its residents. To understand the hydrology of the area we must look back tens of thousands of years ago to the last period of glaciation. Carrying massive amounts of rock and debris, ice over a mile thick inched its way across Minnesota. Stopping in southwest Minnesota, it dropped in the process of melting a ridge of debris up to 600 feet thick. This geologic formation, a moraine called Buffalo Ridge for the great herds that once roamed its slopes, stretches northwest to southeast about 35 miles southwest of Marshall. Glacial melt waters, flowing to the northeast, carved ravines and waterways in which streams still flow towards Marshall. One of these streams, the Redwood River, falls 635 feet on its forty mile trip from Pipestone County to Marshall, but then only falls 38 feet as it travels 38 miles to Redwood Falls. At Marshall, the base of the ridge, waters slow depositing soil. This alluvial terrace (water deposited soil) creates a natural flood plain between the rushing upstream waters and the slower downstream segment. Catastrophic flooding occurs in this region as witnessed in 1927, 1957, 1969 and 1993.

ATTACHMENT 2

LETTER FROM ARNE H. CARLSON

STATE OF MINNESOTA,
Saint Paul, MN, February 24 1997.

Senator ARLENE J. LESEWSKI,
131 State Office Building,
St. Paul, MN.

Representative MARRY SEIFERT,
213 State Office Building,
St. Paul, MN.

DEAR SENATOR LESEWSKI AND REPRESENTATIVE SEIFERT: I am writing to let you know that we will recommend funding of $376,000 for the Marshall Flood Control project in the Supplemental Executive Budget. I appreciate your efforts to bring this important project to the attention of this Administration.

With a history of past flooding, it is clear that the Marshall Flood Control project needs to be completed as soon as possible. I hope that you will continue to work

to support this initiative as it moves through the legislative process, and know that the Department of Natural Resources will be providing the necessary assistance.

Thank you again for your hard work on behalf of this important initiative.

Warmest regards,

ARNE H. CARLSON,
Governor.

PREPARED STATEMENT OF THE IOWA DEPARTMENT OF NATURAL RESOURCES, KANSAS DEPARTMENT OF WILDLIFE AND PARKS, MISSOURI DEPARTMENT OF CONSERVATION, AND NEBRASKA GAME AND PARKS

Regarding the Missouri River Bank Stabilization and Navigation, Fish and Wildlife Mitigation Project

—A request for $10 million is being made for fiscal year 1998 to the U.S. Army Corps of Engineers

—The Corps of Engineers included $3.9 million in its budget for fiscal year 1998, while $10.2 million of project work is ready for implementation

—Provides for construction of projects and acquisition of land to restore and enhance habitats in the states of Iowa, Kansas, Missouri, and Nebraska that were degraded as a result of the Missouri River Bank Stabilization and Navigation Project

—Provides more opportunities and improved quality of experience for people in the four states that hunt, fish, hike, and enjoy the outdoors through various other recreational pursuits

—Reduced funding will result in the retraction of land acquisition agreements that have been successfully negotiated and the delay of construction projects that have approved designs and specifications

—Current authorization levels mitigate for 2 percent of the aquatic and 7 percent of the terrestrial losses; less funding equates to even less compensation for losses

—Projects do not conflict with other uses of the Missouri River and do not have public opposition

Background

Seven acts of Congress provided for the construction and maintenance of a navigation channel and bank stabilization works on the Missouri River. The most important of these Acts were passed in 1912, 1925, 1927, and 1945 (Public Laws 62–241, 68–585, 70–560, and 79–14) respectively. The Missouri River Bank Stabilization and Navigation Project was conceived and designed for its stated purposes in an era of little recognition of the values of fish and wildlife resources. As a result, the natural features of the Missouri River were devastated. The project shortened the lower Missouri River by 127 miles.

In response to the habitat degradation, Section 601 (a) of the Water Resource Development Act of 1986 (Public Law 99–662) authorized the Missouri River Fish and Wildlife Mitigation Project within the states of Missouri, Kansas, Iowa, and Nebraska. This authorization was based upon a report of the Chief of Engineers, dated April 24, 1984, entitled Missouri River Fish and Wildlife Mitigation, Iowa, Nebraska, Kansas, and Missouri. The Chief's report was based on a May 1981 Feasibility Report and Environmental Impact Statement (EIS) by the Missouri River Division, U.S. Army Corps of Engineers (CEMRD) which: (1) described the historical fish and wildlife habitat losses and those likely to occur due to the Missouri River Bank Stabilization and Navigation Project, (2) described various measures to mitigate for these losses, and (3) recommended a plan to restore, preserve, or develop 48,100 acres of habitat. These acres represent only 2 percent of the aquatic habitat loss, and 7 percent of the terrestrial losses. The U.S. Fish and Wildlife Service and the states of Iowa, Nebraska, Kansas, and Missouri made up the Coordination Team that was developed (as outlined in the Fish and Wildlife Coordination Act of 1958) to formulate and decide acquisition and development sites with the Corps. It was established that 48,100 acres (18,200 acres on public lands and 29,900 acres on lands to be acquired) would be developed within the four states at ratios comparable to the habitat types lost. This level of mitigation has always been considered by the states to be a good start to what is ultimately needed. Continuing authority will eventually be required to achieve total mitigation.

What Progress Has Been Made?

To date 17,634 acres have been acquired, 59 percent of the 29,900 acres authorized. There have been 14,641 acres of aquatic and terrestrial habitat developed,

which is 30 percent of the 48,100 acres authorized for development. Some restoration has been completed in all four states. This progress has primarily occurred in the last 3 years and it is vital to maintain this momentum.

What Benefits Are Provided By This Project?

Mitigation projects benefit fish, wildlife, and people. Big river fish species, waterfowl, other birds, mammals, reptiles and amphibians are all benefiting through additional improved habitat. The completed sites are revegetating and returning to pre-channelization conditions, thus attracting fish for spawning and rearing. People are realizing that this restored habitat is providing places not only to hunt and fish, but to hike, enjoy nature, bird watch, and enjoy the Missouri River. Mitigation projects are bringing back hunting and fishing opportunities that have been lost in areas that in the past provided bountiful harvests.

Channelization and induced floodplain developments have reduced the natural flood carrying capacity of the Missouri River causing additional flooding and it has increased the flood stages in the receiving Mississippi River. This has led, in turn, to increased pressure to construct more downstream levees and other single purpose flood control projects. By restoring portions of the floodplain through fish and wildlife mitigation, we are providing storage areas for flood waters and reducing local flood damages.

Fish and wildlife mitigation projects are not adversely impacting other uses of the Missouri River such as navigation, flood protection, and municipal water supplies. We are not aware of any public opposition to fish and wildlife mitigation. In other words, these projects would provide a wide array of benefits without significant effects on existing uses of the River.

What Appropriations Are Necessary?

The U.S. Corps of Engineers requested $1.1 million for fiscal year 1997. Congress increased that appropriation to $3.1 million. The Corps is requesting $3.9 million for fiscal year 1998. They have estimated their spending capability for fiscal year 1998 to be $10.2 million. We would like to see the fiscal year 1998 and following budgets for the Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project be set at $10 million per year to complete the project in a timely manner. The sharp budget cut in fiscal year 1997 and projected fiscal year 1998 budget will make it very difficult to keep this program on schedule. Even at $10 million per year, it will be at least 2002 before the project is completed. It was envisioned that the project would be completed in 2000, but the Corps is now projecting a completion date of 2006. The fiscal year 1994 appropriation for the Missouri River Fish and Wildlife Mitigation Project was $7.5 million, the fiscal year 1995 was $8.1 million, and fiscal year 1996 was $8.4 million. These three years of funding resulted in individual project components being completed and, just as important, established momentum for the overall mitigation project. Last year's appropriation of $1.1 million and this year's projected budget of $3.9 million will destroy the momentum that has taken so long to build.

The Corps has indicated they will not have sufficient funds to acquire land already negotiated to purchase and they have contractors available to construct projects that have been engineered and designed. The Corps has stated that "Funding for fiscal year 1998 is for continuing construction for the Missouri River Mitigation Project. Because the funds for fiscal year 1998 are very uncertain it is unlikely there will be funding available for any large construction contracts or real estate acquisitions. Work will likely be restricted to completing planning documents at several sites as well as monitoring the completed sites."

Previous appropriations for planning, engineering, design and construction have been well spent. The current authorization under the 1986 Water Resources Development Act is $81.4 million (1996 dollars), of which $28.5 million has been expended. This indicates the project is only 35 percent complete and falling behind schedule rapidly because of cuts in the yearly appropriations and inflation. We are concerned that future appropriation cuts and inflation will only serve to delay and ultimately accommodate a less than successful mitigation project.

PREPARED STATEMENT OF THE UPPER MISSISSIPPI RIVER BASIN ASSOCIATION

Upper Mississippi River System Environmental Management Program [CG Budget—$19.455 million]

Provides for construction of projects to restore and enhance degraded habitats and supports long term monitoring.

Less than full funding would disrupt on-going construction schedules and entirely eliminate construction of five projects.

Annual appropriations and program time frame are capped.

Non-construction component (monitoring) has limited budgetary flexibility.

Evaluation of program is underway and will yield recommendations to Congress.

Balance needed between navigation and environmental investments.

Upper Mississippi and Illinois Navigation Study [GI Budget—$7.7 million]

Evaluates need for expansion of navigation capacity.

Study plan recently revised.

Congressionally-imposed study deadline.

Upper Mississippi River System Flood Profile Study [GI Budget—$1.957 million]

Existing flood profiles developed in 1979 need revision.

Additional data and improved modeling methodologies now exist.

Flood profiles are needed for flood insurance, floodplain management, and the design of flood control projects.

Up-Front Funding Policy

Limits number of new construction starts and funding available for on-going projects.

Decreases flexibility.

BACKGROUND

The Upper Mississippi River Basin Association is the organization created 16 years ago by the Governors of the states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin to serve as a forum for coordinating river-related state programs and policies and for collaborating with federal agencies on regional issues. As such, the Association works closely with the Corps of Engineers on a variety of programs for which they have responsibility. Of particular concern to the basin states are three Corps programs: the Environmental Management Program, the Upper Mississippi navigation study, and the flood profile study.

ENVIRONMENTAL MANAGEMENT PROGRAM

The Upper Mississippi River System Environmental Management Program (EMP) was authorized in the 1986 Water Resources Development Act in response to the need for both restoring lost and degraded habitat and improving scientific understanding of the river system. What was at first a novel new approach to interagency environmental management, has now become a widely recognized and respected regional program.

The EMP consists of two primary components: the construction of individual projects to rehabilitate or enhance critical habitat areas and a long term monitoring program to track the environmental health of the system. Each of the habitat projects (varying in size and ranging in cost from about $200,000 to $7 million) employs different types of techniques, including such measures as selective dredging to remove sediment, island creation, water level control features, and side channel closures or openings. The long term monitoring program consists of six field stations throughout the river system which routinely collect standardized data on water, sediment, fish, and vegetation at over 150 sites. In addition, the monitoring program headquarters at the Environmental Management Technical Center is home to a multi-disciplinary team of scientists who are interpreting and displaying the data in ways that will be useful for management decisions.

The unique character of the EMP is, in part, a function of its partnership design. While the Corps of Engineers is the lead agency, the U.S. Fish and Wildlife Service, U.S. Geological Survey, and five basin states all have specific roles to play in planning, designing, evaluating, and operating and maintaining the habitat projects, as well as conducting the data collection and analysis that is part of the long term monitoring program.

Fiscal year 1998 marks the second year in a row that the President's budget request includes less than the full authorized funding of $19.455 million for the EMP. Last year, the Administration recommended only $15.7 million and this year the request has dropped even further, to $14 million. In fiscal year 1997, Congress included an additional $1 million for the EMP and we are hopeful that Congress will again affirm its support for this important program by providing full funding for the EMP.

The proposed budget reductions for the EMP are of grave concern to the basin states for a variety of reasons:

—The EMP partner agencies have initiated a comprehensive evaluation of the EMP which will be used to formulate a "Report to Congress." In the 1986 authorizing legislation, Congress directed that such a report be submitted prior to the end of the authorization period (i.e., 2002). That report is to evaluate the program's strengths and weaknesses and include recommendations regarding whether the EMP should be terminated, continued, or modified. While the EMP authorization does not expire for another four years, it is generally agreed that such a report would be particularly useful now.

More specifically, over the past eleven years numerous advancements have been made in the art and science of environmental restoration and we have gained considerable experience through the EMP in understanding both the opportunities and limitations of existing techniques and programs. We should utilize that experience to shape improved strategies for environmental restoration including changes to the EMP itself.

It would be particularly unfortunate and ironic if the EMP were to face funding cutbacks at a time when an effort is underway to assess its effectiveness and make recommendations regarding its future. If funding cuts continue to weaken the program, Congress may have limited options for designing a "second generation" EMP authorization.

—Unlike most other Corps projects, the EMP is "capped" by its Congressional authorization both in terms of annual appropriations and overall time frame. Therefore annual funding decisions have a far greater impact on whether the program is ultimately able to accomplish its goals. No other Corps program or project of which we are aware is constrained by this unique synergistic combination of time and financial limitations.

In the first four years of its authorization (1988–1991), the EMP suffered from funding shortfalls of more than $30 million below authorized levels. The annual cap on appropriations makes it impossible to "recapture" this shortfall.

—Funding reductions in the closing few years of the current EMP authorization period will have a particularly debilitating effect on the program. Habitat projects for which planning and design have been initiated will not be able to proceed to construction, thus negating the investment which has already been made in these projects. The fiscal year 1998 budget of $14 million will support the continuing construction of 8 projects, the completion of 4 projects, and continuing design of 7 projects. However, it is currently estimated that 7 projects will experience construction delays. Even more importantly, the construction of 5 projects will have to be abandoned entirely.

—The success of the Long Term Resource Monitoring (LTRM) component of the EMP is dependent, in part, upon relatively reliable and constant funding levels. As a non-construction element of the EMP which supports teams of scientific and field personnel, the LTRM is particularly sensitive to annual funding variances. In this regard, the LTRM is unique within the Corps' construction general account, where there is typically more flexibility to respond to annual budgetary fluctuations.

—The economic and ecological health of the Upper Mississippi River are inexorably linked. Congress recognized this fact when, in 1986, it declared this river system to be "a nationally significant ecosystem and a nationally significant commercial navigation system." Yet funding cuts for the EMP are widening the already large discrepancy between federal investment in these two major river purposes. In fiscal year 1998, the Corps of Engineers will invest over $130 million in operation and maintenance of the Upper Mississippi River System for commercial navigation purposes. Another $27 million is scheduled for major rehabilitation of aging locks and dams. Though some of these investments have incidental environmental benefits, full funding ($19.455 million) for the EMP is critical if the federal commitment to multi-purpose management is to be maintained.

NAVIGATION STUDY

In 1993 the Corps of Engineers initiated a feasibility study of navigation capacity expansion on the Upper Mississippi River and Illinois Waterway, a transportation system that is vitally important to the Midwest and the nation in linking agricultural commodities to international markets. The states in the region have been providing advice and counsel to the Corps throughout the study via a special "liaison committee" comprised of gubernatorial appointees from each of the five basin states. The results of this study will be critical to our ability to make reasoned decisions about the future of the Upper Mississippi navigation system. Given that the merits of future multi-billion dollar investments will be judged based upon this study, the

states of the basin are deeply concerned that the study include adequate and timely data and analysis. Thus, the states urge that the study be funded to the Corps' maximum ability to execute in fiscal year 1998, which we understand to be $7.7 million. The following points are worthy of note:

—The Corps of Engineers recently revised its Project Study Plan (PSP) for the navigation study. These revisions were necessary to accommodate a variety of changes made since the original study plan was published in 1994. In particular, changes to the scope of the environmental studies, the addition of a regional economic analysis, and increased emphasis on assessment of small scale measures are all adjustments which the five basin states strongly supported. It is our understanding that the fiscal year 1998 budget request of $7.7 million reflects the revised study plan and is thus endorsed by the states.

—Fiscal year 1998 funding of $7.7 million will, among other things, support a number of study efforts of particular interest to the states. The streambank erosion study; plant, fish, and mussel impact studies; and the math modeling component of the environmental studies will continue. In addition, the economic analysis will focus on relative modal cost shifts and regional economic development analysis. Completion of these components of the study is critical, given that plan formulation activities are scheduled to begin in earnest in fiscal year 1998.

—In the conference committee report for the fiscal year 1996 Energy and Water Development Appropriations bill, Congress directed the Corps to complete the Upper Mississippi navigation study by 1999. It will be impossible to meet this deadline, without sacrificing components of the study which the Corps has judged to be essential for NEPA compliance, unless adequate funding is provided in a timely manner.

UPPER MISSISSIPPI RIVER SYSTEM FLOOD PROFILE STUDY

Flood frequency profiles for the Upper Mississippi River System are badly in need of revision. The flood profiles currently in use were developed in 1979 by an interagency task force of the Upper Mississippi River Basin Commission then in existence. The 1979 flood profiles replaced profiles that had been adopted in 1966. There are a variety of factors that suggest the 1979 profiles need to be updated:

—The 1979 flood profiles are generally lower than the earlier 1966 profiles. In the southern reaches of the Rock Island District, the difference is as much as five feet. For example, the 1979 flood frequencies show that in the short time frame of 29 years, a "100 year" flood, a "200 year" flood, and a "500 year" flood have occurred in the city of Hannibal, Missouri. This has caused many communities along the Upper Mississippi River to question whether the 1979 methodology and resulting profiles are accurate.

—There are now nearly 20 years of additional data available, including flow records from several high water events like the Great Flood of 1993. In addition, the Corps now has the capability to model the complex hydraulics of the Upper Mississippi River more accurately than it did with earlier methodologies. In particular, following the 1993 floods, the Corps developed a mathematical hydraulic model (UNET) to answer "what if" questions such as the impact of levee failures or reservoir operations on stages of the Mississippi River. That model is now essentially complete and will allow computation of water surface profiles. In fact, when the interagency task force developed the 1979 flood profiles, the need for future revisions was recognized and the original agreement states that the flood flow frequencies should be revisited as additional data and math models become available.

—Flood elevation profiles have a variety of uses including flood insurance; floodplain management; and the study, design, and construction of flood control projects. The need for updated math models and flood profiles has been widely recognized, especially since the Great Flood of 1993. The "Galloway Report" which the Clinton Administration commissioned following the 1993 Midwest floods, recommended that the methodology used for flow-frequency analysis be reassessed. Similarly, the Flood Plain Management Assessment published by the Corps in June 1995 recommended that hydrology and hydraulics data be updated, including water surface profiles. The five states of the Upper Mississippi River Basin have been strong supporters of these recommendations.

The Corps of Engineers has reprogrammed approximately $350,000 of fiscal year 1997 funding to begin developing a scope of work for the proposed flood profile study. It is our understanding that the fiscal year 1998 budget request of $1.957 million will be used to complete the scoping process and then initiate the study it-

self. The basin states strongly endorse appropriation of funds for the flood profile study in fiscal year 1998.

UP-FRONT FUNDING FOR NEW STARTS

The Administration's fiscal year 1998 budget request reflects a new policy for funding new construction starts. Rather than scheduling annual incremental funding, new starts are fully funded up-front. The stated reason for this policy shift is to enhance the efficiency of managing construction schedules and to assure non-federal cost-share partners of the federal government's commitment to the project. Both of these purposes are commendable.

However, the consequences of the policy are of concern to the states. In particular, at a time when budgetary resources are becoming increasingly limited, an up-front funding policy locks up those scarce resources on projects which cannot utilize all the funds allocated to them in their first year. It also has the effect of limiting the amount available for on-going projects as well as the number of new construction starts. In addition, it limits the flexibility which is important in managing both individual projects and multi-project construction budgets.

As an example, in the Upper Mississippi River Basin, the new up-front budget policy was applied to the major rehabilitation construction work that is to begin on Lock and Dam 3 in fiscal year 1998. While $12.4 million is included for that project, it is our understanding that only $800,000 of work is expected to be executed in fiscal year 1998. Because it is a major rehabilitation project, 50 percent of the funding is provided by the Inland Waterway Trust Fund and there is no local sponsor.

While the states of this region are supportive of the rehabilitation work that needs to be done at Lock and Dam 3 to maintain the physical integrity of that aging structure, it should be noted that the up-front funding policy has the effect of decreasing funds available for other worthy projects in the region. In particular, as previously described, the fiscal year 1998 budget includes only $14 million, rather than the fully authorized funding of $19.455 million, for the on-going Environmental Management Program (EMP).

PREPARED STATEMENT OF JOSEPH W. HARRINGTON, MAYOR, CITY OF VALLEY PARK, VALLEY PARK, MO

As Mayor of a city containing over 6,000 residents, and as the former president of the local school board, I can give first-hand witness to the terrible devastation that past flooding has wrought upon this community. The Valley Park levee, now in its third full year of construction, will provide complete relief from these disasters.

I urge you to continue your support by funding the Army Corps of Engineers' appropriations request for fiscal year 1997. This will insure the economic well being of the community and provide an incentive for our families and their children to stay and thrive in this established community.

Thank you for your past support and your anticipated future support of this worthwhile flood control project.

LETTER FROM DENNIS R. LEA, SUPERINTENDENT, VALLEY PARK SCHOOL DISTRICT, VALLEY PARK, MO

VALLEY PARK SCHOOL DISTRICT,
Valley Park, MO, March 20, 1997.

Senator PETE V. DOMENICI,
Chairman, Subcommittee on Energy and Water Development, Committee on Appropriations
Washington, DC.

DEAR SENATOR DOMENICI: This letter is in reference to the Valley Park Levee Project currently being reviewed by the Appropriations Subcommittees. The Valley Park School District supports wholeheartedly the efforts of the City of Valley Park in requesting continued funding of the levee project.

Several years ago, the school district decided to support the levee project financially through participation in a tax increment finance district. It is estimated that the school district alone will contribute $4 million to the levee project. We believe the project is one of the most significant activities that could be undertaken to improve the quality of life and overall opportunities for our community.

It was just a short three years ago this spring that our community, including our total school campus, was completely under water from the flooding of the Meramec

River. Discounting the devastation to the community at large, school district facilities suffered $2.3 million of damage and the loss of sixteen regularly scheduled attendance days for our students.

We sincerely hope you will continue your efforts to financially assist our community in its endeavor to provide a safe and secure environment for its children.

Sincerely,

DENNIS R. LEA,
Superintendent.

PREPARED STATEMENT OF CHRISTOPHER J. BRESCIA, PRESIDENT, MIDWEST AREA RIVER COALITION 2000

Mr. Chairman and Members of the Subcommittee, I am Christopher Brescia, President of the Midwest Area River Coalition 2000 (MARC 2000), based in St. Louis, Missouri. Thank you for the opportunity to submit our views on certain portions of the U.S. Army Corps of Engineers' program for fiscal year 1998.

Our testimony expresses support for the items presented in the President's fiscal year 1998 funding requests identified in this testimony. MARC 2000 opposes the introduction of full funding/advanced appropriations concept to the Corps' budget. Rather, we support the traditional incremental funding process utilized since 1922. In addition, we support raising the overall allocation for the Corps of Engineers to the $3.994 Billion level in order to meet pressing infrastructure demands around the nation.

MARC 2000 represents members who generate over $125 Billion in economic activity from the Midwest and conservatively employ or self-employ more than 150,000 people in 21 states. We reach from Minnesota to Louisiana on the Mississippi River, from Chicago to St. Louis on the Illinois Waterway and from Sioux City to St. Louis on the Missouri River. MARC 2000 continues to grow aggressively in the region bringing a river-based international competitiveness and economic development message to the public's attention.

Under the following funding categories, MARC 2000 supports these individual funding requests included in the President's budget. However, as already indicated we urgently support overall increased funding for the Corps of Engineers. Some of the funding increases requested by MARC 2000 could be funded with elimination of the advanced appropriations/full funding concept (e.g. Major Rehabilitation). Other funding increases would be appropriate with an overall budget allocation increase to the Energy and Water Development Subcommittee.

GENERAL INVESTIGATIONS

MARC 2000 urges support and priority under General Investigations for funding of the six-year Upper Mississippi/Illinois Waterway Navigation Feasibility Study at the President's requested level of $7.7 M and for the St. Louis Harbor study at the $.5 M level.

CONSTRUCTION, GENERAL

Under construction general, MARC 2000 supports the President's request and additional funding support for the following projects:

[In millions of dollars]

	Fiscal year 1998 budget	Increase requested
Melvin Price Lock and Dam, IL & MO	1.900	1.2
Mississippi River Regulatory Works	3.460	2.5

MAJOR REHABILITATION

The Major Rehabilitation program is critical to the Upper Mississippi and Illinois Rivers continued future functioning. MARC 2000 supports the following programs:

[In millions of dollars]

	Fiscal year 1998 budget	Increase requested
Lock and Dam 24, Mississippi River, IL & MO	4.370	1.0
Lock and Dam 25, Mississippi River, IL & MO	4.230	.....
Lock and Dam 14, Mississippi River, IA	6.600	2.7
Lock and Dam 3, Mississippi River, MN (New Start)	12.400	[1] (11.2)

[1] The St. Paul District does not have the capability to expend $12.4 Million on this new start. However, under the Administration's Advanced/Full Appropriations scheme, funds are made available in the fiscal year 1998 budget that could be expended under incremental appropriations at other projects in the Upper Mississippi Basin. This scenario assumes that the overall allocation levels will remain under incremental funding. There is a total of $19.2 Million in combined Construction General and Major Rehabilitation needs for which these funds could be utilized, leaving a balance of $7.6 Million to be allocated if the overall allocation levels can be increased to the $3.994 Billion level.

OPERATION AND MAINTENANCE

The continued operation and maintenance of the Upper Mississippi, Illinois and Missouri Rivers support almost 100 million tons of commodities annually. The movement of these products on the river system in our region supports over 400,000 full and part-time jobs, accounts for over $4 Billion in income to residents and generates between $11–$14 Billion in business revenue annually. MARC 2000 supports a level of funding that will permit this region to operate the system efficiently and in anticipation of growing demand especially from the agricultural sector. Our organization urges support at the following funding levels necessary for baseline and non-deferrable functions:

[In millions of dollars]

	Fiscal year 1998 budget	Increase requested
Mississippi River (LMVD Portion)	10.535	2.980
Mississippi River (NCD Portion)	81.363	10.335
Mississippi River (Cairo-MO River, Reg. Works)	14.839	2.810
Illinois Waterway (LMVD Portion)	1.310	.....
Illinois Waterway (NCD Portion)	22.738	.263
Kaskaskia River Navigation	1.430	.350
Missouri River—Sioux City to Mouth	6.496	.807

ENVIRONMENTAL STEWARDSHIP

Over the last year, MARC 2000 has encouraged and participated in a collaborative process in the region to identify key environmental concerns and means by which to address those concerns. The Upper Mississippi River Summit dialogue has identified a range of projects endorsed by key stakeholder groups, many that might require funding from the U.S. Army Corps of Engineers and other federal and state agencies. Attached to this testimony is a copy of the Vision statement signed and endorsed by 84 individuals and organizations. We would be pleased to have the Subcommittee address the means by which these initiatives could become a reality.

Meanwhile, the President's budget requests $14 million for the Environmental Management Program (EMP) in our region. MARC 2000 supports funding of environmental stewardship needs for the Upper Mississippi, Illinois and Missouri Rivers, but urges Congress to assess this and other environmental funding requests according to key investment criteria. First, how does this program and other efforts on the Upper Mississippi River fit into an overall systems needs assessment? It is unclear that such an assessment has ever been conducted. Second, are these funds addressing priority concerns in the most cost-effective fashion? Finally, what has been the overall return on investment for this program? A report seeking re-authorization of this program is expected to be completed this year and forwarded to Congress for review. MARC 2000 will be pleased to address the substance of this report at that time.

CONCLUSION

The infrastructure needs of the Upper Mississippi Region are significant. MARC 2000 supports an increase in the allocation for the U.S. Army Corps of Engineers and reallocation of advanced/fully appropriated funds to fund priority projects in our region. The return on these type of investments have been repeatedly proven over the years. The consequences of not reversing a declining trend will be increased failures in the system due to inadequate maintenance and untimely modernization of the Upper Mississippi region that will counter the significant achievements in multilateral market access and opportunities for agricultural exports to the world market. We thank the Subcommittee for supporting these projects in the past and urge full consideration for the funding requests outlined in this presentation.

ATTACHMENT TO MARC 2000

VISION STATEMENT II—UPPER MISSISSIPPI RIVER SUMMIT

Vision for the Upper Mississippi River.—To seek long term compatibility of the economic use and ecological integrity of the Upper Mississippi River.

Objective of summit meeting.——To seek commitment to develop a multi-interest strategy for managing the Upper Mississippi River.

Whereas:

(1) The Upper Mississippi River is for purposes of this document defined as the main stem of the Mississippi River from Minneapolis, Minnesota, to Cairo, Illinois, recognizing main stem impacts from measures taken throughout the entire 714,000-square mile watershed;

(2) The Upper Mississippi River is a multi-purpose resource recognized by Congress as both a "nationally significant ecosystem and a nationally significant commercial navigation system" (Section 1103 of 1986 Water Resources Development Act);

(3) The Upper Mississippi River is important for economic and non-economic uses;

(4) The initial Summit Meeting in February 1996 focused on identifying natural resource issues of the Upper Mississippi River, we now need to consider how to make identifiable projects a reality and integrate economic issues into established objectives.

Therefore: We are committed to:

(1) Collaboratively address Upper Mississippi River needs;

(2) Identify and prioritize issue and geographic areas in which cooperative action is most likely;

(3) Seek ways to remove obstacles to cooperative action within existing programs and authorities;

(4) Seek funds and/or new authorities, as appropriate for the following:

—Enhanced pool management in pools 8, 13, 24, 25, & 26, identify other opportunities for pool management, including the Illinois River, and engage all identifiable stakeholders;

—A needs assessment to identify measures for flood damage reduction and enhancement of flood plain habitat to include among others, the U.S. Army Corps of Engineers and the U.S. Department of the Interior;

—One floodplain habitat project in each state through voluntary means and request up to 60,000 acres of NRCS wetland reserve easements;

—USDA policies which promote flood-resistant economic uses of the floodplain, a workshop on alternative floodplain land uses, and a pilot project;

—Innovative river training structures in pools 8, 13, 16 and side channels on middle Mississippi, monitor project performance and use data to predict future benefits;

—Economically viable and ecologically sound land and water management practices which improve water quality, and biotic resources exploration of their regional applicability and encouragement of voluntary adoption by individuals and communities;

—An evaluation of the current and future physical structure of the river floodplain under current management practices and the development of models to achieve a greater understanding of the economic and ecological interrelationships of management alternatives;

—Measurable ecologically-based natural resource objectives for selected river reaches; and,

—A web site to share information.

—A comprehensive analysis of the region that describes the total economic values (including commercial, recreational and other natural resource-based values) derived from the river.

(5) Seek means of addressing economic concerns identified at February 1997 Summit Meeting though established teams;

(6) Convene again in approximately one year to review progress and reevaluate strategies, with a progress report in six months.

PREPARED STATEMENT OF CHARLES E. OWSLEY, PRESIDENT, MISSOURI-ARKANSAS RIVER BASINS ASSOCIATION

Following is the list of projects with the money requested for the 1998 budget. They are endorsed by our delegation of volunteers from the Missouri-Arkansas Association. We ask your serious consideration in budget development for fiscal year 1998 Budget.

Estimated Fiscal Year 1998 Appropriation

Blue River Channel, Kansas City, Missouri—Start Construction Stage 3. Complete Construction by 2002	$19,700,000
Turkey Creek, Kansas City, Kansas and Missouri—Complete Design for a 1998 Construction start. Slow! Sponsors may precede Corps project w/relief project from their own funds to prevent further flooding, w/credit for their Project costs	290,000
Missouri River Levee System:	
Restudy all levees for 100/500 year protection	830,000
Unit L–385—Revise plans (Quindaro Bend)—Local sponsor funding plan is approved. ROW required by sponsor, pending CMA approval	120,000
Unit L–142—Begin Design (Jeff City)—Studies for reduced scope since Cedar City buyout	550,000
Blue River Basin, Kansas City, Missouri—Complete pre-construction engineering and design	750,000
Swope Park Industrial Area, Kansas City, Missouri—PMP to be developed, begin feasibility study	180,000
Total	22,420,000

The list has been prepared in order of priority, as supported by our Board. Local sponsors will make separate statements for their most serious and pressing needs. Thank you for the opportunity to place this request on the record.

PREPARED STATEMENT OF MAYOR MAX HOGAN, CITY OF WEST JORDAN, UT

WEST JORDAN WATER REUSE PROJECT

I appreciate the opportunity to submit testimony regarding West Jordan's Water Reuse Project. West Jordan is seeking $500,000 in the fiscal year 1998 Energy and Water Appropriation Bill, which will provide funding for the design and engineering portion of the project, and also allow the project to begin construction.

Thanks to the efforts of our congressional delegation, the City of West Jordan received an authorization for our water reuse project in H.R. 3660, the Reclamation Recycling and Water Conservation Act of 1996. The total cost of the water reuse project is now projected at $6.6 million. H.R. 3660 authorized a 25 percent federal share for the project, or $1.65 million.

The City of West Jordan believes federal support for the reuse of recycled wastewater is critical for arid states such as Utah, who must find alternative water sources in a rapidly developing region. West Jordan is currently developing a water reuse project, and the federal share authorized will make the project feasible by reducing the cost of the water, thereby making it more competitive with other water rates in the Salt Lake Valley.

WEST JORDAN'S WATER REUSE PROJECT

West Jordan City, located in Salt Lake County, Utah, is experiencing rapid growth which has led to an increasing demand for water. Water use in West Jordan City more than doubled from 6,611 acre-feet in 1984 to 13,263 acre-feet in 1994. That's over a 100 percent increase in just ten years. This rapid growth has continued. Wells owned by West Jordan City currently supply about 40 percent of the City's total water demand, and water purchased from the Salt Lake County Water Conservancy District (SLCWD) supplies the balance of the City's water demand. To

meet this significant increase in water demand, West Jordan City has little other alternative than to purchase more water from SLCWCD. Unfortunately, this is not a long range alternative since SLCWCD is projected to reach their committed peak flow capacity within the next two to three years. Without an alternative water source, West Jordan City, which currently purchases sixty percent of their water supplies from SLCWCD, will face a severe water shortage supply. Water conservation programs have already begun, but water conservation alone is insufficient to handle the burgeoning water demands of the Salt Lake Valley.

To meet these anticipated water demands, West Jordan City believes that reclaimed water must be used as a water source for non-potable use. Reclaimed water is defined as properly treated municipal wastewater, and water reuse is defined as putting the reclaimed water to a beneficial use. Replacing potable water with reclaimed water for non-potable purposes will make additional water available for potable use. Reclaimed water is being used in a number of areas for agricultural and landscape irrigation, industrial use, groundwater recharge, and recreational and environmental enhancement, but has seen only very limited use in Utah.

The Utah State Legislature passed legislation in 1995 allowing municipalities to reuse water discharged from wastewater treatment plants if the water originated under the water rights held by that municipality. Wastewater generated by West Jordan is currently treated at the South Valley Water Reclamation Facility (SVWRF), a regional wastewater treatment facility. West Jordan City could reuse their share of the effluent from SVWRF, once properly treated, to irrigate parks, golf courses, cemeteries, schools, and other open areas.

The City will need to contract with the regional waste treatment facility for the purpose of reusing the effluent. The General Manager of the South Valley Water Reclamation Facility, John Callis, has indicated that SVWRF strongly supports water reuse and will cooperate with West Jordan's water reuse project.

PROJECT DESCRIPTION

West Jordan's water reuse project would consist of the construction of the facilities to treat and distribute reclaimed water for the irrigation of public and, possibly, private properties. Based on the "West Jordan City Water Reuse Feasibility Study", conducted in 1995, with updated costs to 1998 dollars, the project is estimated to cost $6.6 million. The overall system would include piping, a main pump station, a booster pump station, a storage reservoir, and polishing filters. Reclaimed water could be pumped to the high end of the system throughout the day and night. During periods of irrigation, the overall demand would be met from both the reservoir and the pump stations. The main pipeline would connect the SVWRF to the storage reservoir located near Old Gingham Highway at Elevation 4720. The main pipeline would be located primarily in the railroad right-of-way and consist of 24 inch diameter PVC pipe. Lateral pipelines ranging from 6 inch diameter to 18 inch diameter would connect the main pipeline to the irrigated areas.

Pumping requirements would be met by a main pumping station at or near the SVWRF and a booster pump located at approximately the mid-point of the water distribution system. The main pump station would be located near the outlet of the polishing filter. The overall system layout is shown in Appendix C. Results of the feasibility study show that 1 to 2 days of storage volume would be required to efficiently use the reclaimed water. Storage would be necessary because most irrigation would occur in a 7 to 8 hour period during the night, while effluent discharge from the SVWRF would have a tendency to be higher during morning and evening hours. Storage requirements for 1 to 2 days of operation during the period of peak demand would be 4.5 to 8.9 million gallons. A concrete lined, open reservoir with a total storage capacity of about 6 million gallons was recommended in the feasibility study.

The filtration system is critical to the West Jordan Water Reuse Project, since the State Wastewater Reuse Rules require that the wastewater intended for Type 1 water reuse pass through a filtration system. Final effluent filtration is currently not in place at the SVWRF, so the filters would need to be constructed before Type 1 water reuse could be implemented. Disinfection would be required following filtration.

COST COMPARISON

The cost per acre-foot of reclaimed water is estimated to be $280 or more. This is within the range of the costs of Salt Lake County Water Conservancy District's potable water, which costs on a weighted average to West Jordan City approximately $240 per acre-foot. However, West Jordan City has purchased water from SLCWCD at upwards of $340 per acre-foot. The cost per acre-foot of reclaimed water could be reduced by selling more reclaimed water at off-peak hours to industrial

users or to other reuse alternatives. Grants or subsidized financing could significantly reduce West Jordan's cost for a water reuse project.

West Jordan capacity for groundwater sources is limited, and cannot depend on the SLCWCD, which wholesales water to over half of the geographic area of the Salt Lake Valley, to provide additional water since peak capacity will be reached within three years. The SLCWCD will have to expand their capacity of aqueduct and treatment facilities by the year 2005 to meet increasing water demands in the Salt Lake Valley. West Jordan's water reuse project will reduce our dependency on potable water from the Conservancy District, and therefore reduce the need for expansion of their facilities. Over half of SLCWCD's capacity is devoted to outdoor irrigation. West Jordan's water reuse project, which is intended to be used to irrigate parks, golf courses, and other public entities, will reduce the peak loading on the SLCWCD system. For this reason, David Ovard, the General Manager of the SLCWCD, strongly supports our project.

SUMMARY

West Jordan's water reuse project for irrigation of parks, cemeteries, and golf courses is feasible and has the support of the South Valley Water Reclamation Facility as well as the Salt Lake County Water Conservancy District. However, the estimated per acre-foot cost of the reclaimed water would likely be higher than water purchased from the Salt Lake County Water Conservancy District or supplied by West Jordan's wells. As a result, alternative methods of financing must be found in order to make the project cost-effective.

Water reuse would become more economically feasible if options are utilized that lower the construction costs for the reuse system or increase the annual water sales without increasing the peak demand. While West Jordan is pursuing low cost loans with the state and federal government, grants are also needed to make the water reuse project cost-effective. For this reason, West Jordan would greatly appreciate the Subcommittee's support for providing $500,000 to begin the West Jordan Water Reuse Project in the fiscal year 1998 Energy and Water Appropriation Bill. West Jordan would be prepared to provide a local match of $1.5 million. The appropriation request of $500,000 would provide funding for design and engineering, as well as begin construction on the project. This critical grant will make our project cost-effective, while at the same time mitigating the need for the water wholesaler in the Salt Lake Valley to make costly upgrades.

Thank you again for the opportunity to submit testimony before the Energy and Water Development Subcommittee regarding the West Jordan Water Reuse Project. I hope that the Subcommittee will see fit to provide $500,000 for West Jordan's project in the fiscal year 1998 Energy and Water Appropriation Bill.

PREPARED STATEMENT OF COUNCILMEMBER DAVID RAIL, CITY OF PROVO, UT

PROVO FLOOD CONTROL PROJECT

I would like to request the Subcommittee's support for providing $350,000 in the fiscal year 1998 Energy and Water Appropriation Bill for a Feasibility Study for the Flood Damage Reduction Project in Provo, Utah.

From 1982 through 1984 Provo City was impacted by severe flooding which caused significant damage to the community. A state of emergency was declared in Utah County as well as Salt Lake County. The Army Corps of Engineers was called in at that time to construct dikes and levees. The Army Corps spent approximately $2 million to upgrade an existing dike adjacent to the Provo airport, and a new dike was constructed along the south side of Provo River from the Utah Lake State Park linking it with the airport dike. An additional dike was built along the north shore of Provo Bay to protect residential areas in the southwest section of the City. Congress specifically directed the Army Corps in 1983 to construct these flood control projects in Provo. However, Provo still spent $5 million in repairing damaged property and constructing emergency flood control projects, many of which were temporary in nature. Since Provo's annual budget at that time was only $15 million, providing $5 million was an enormous share for the City to finance. Most of the emergency flood control projects were related to runoff from Rock and Slate Canyons, which are part of federal lands owned by the U.S. Forest Service.

As a result of this flooding disaster, Provo prepared a master plan which identified $30 million in flood control projects to be constructed, consisting of channels and pipes along with detention basins, inlet boxes, and related facilities. In an attempt to finance these improvements Provo created a Service District in 1992 that generates $500,000 a year for these capital improvements projects. However, at this

rate of revenue generation it will take more than 50 years to fund the flood projects identified in the master plan. Provo critically needs another source of funding to finance this flood control project.

The flood control projects identified in the City's Master Plan are the next logical step in flood control for Provo, beyond the Utah Lake and Provo River Diking Project completed in cooperation with the Corps of Engineers in 1983 and 1984. Major elements of the capital improvement program are flood control projects required to handle snowmelt runoff from the canyons on federal lands immediately east of the City. Runoff from these canyons does not occur frequently, but when flooding does occur it can cause high flow quantities requiring large and expensive capital improvements. The flood control projects associated with canyon runoff have an estimated cost of $9 million. It is this portion of the flood control project for which the City of Provo is seeking involvement from the Army Corps of Engineers. The remaining $21 million in flood control improvements are considered local flooding problems in which the Corps has traditionally not had an interest. The City of Provo will finance the local flood control projects through the special taxing district established in 1992. As you can see, Provo is taking a proactive stance in preventing future flooding events from damaging our community. However, funding the entire project is beyond the local community's capabilities.

The Corps has indicated that flooding caused by snowmelt from the mountains was clearly a flood control issue that should have Corps involvement, as opposed to a local drainage problem which would not fall under the Corps' jurisdiction. Major flooding events do not occur frequently in Provo, but when these events occur they can be massive in scope. A community the size of Provo, which has a population of approximately 90,000, cannot be expected to fund $30 million in flood control improvements entirely on our own. Provo has taken steps to largely finance flood control improvements in the City, but help is needed from the federal government for portions of the flooding that are not local in nature* * * especially since the major flooding events occur from lands owned by the federal government.

The President's Budget Proposal included $350,000 for a Feasibility Study to continue the Provo Flood Damage Reduction Project. I respectfully request that the Subcommittee provide funding for this project in the Fiscal 1998 Energy and Water Appropriation Bill.

Thank you again for the opportunity to submit testimony before Subcommittee on Energy and Water Development.

PREPARED STATEMENT OF MAYOR CATHIE BROWN, CITY OF LIVERMORE, CA

On behalf of the City of Livermore, I appreciate the opportunity to submit testimony before the Energy and Water Development Subcommittee regarding the Greenville Road Improvement Project located near the Lawrence Livermore National Laboratories in Livermore, California.

The City of Livermore began discussions with the Lawrence Livermore National Laboratory several years ago to define the Federal responsibility for improving Greenville Road, which is a major route to the laboratory. The improvements consist of widening Greenville Road from a two-lane to a four-lane roadway, and straightening a railroad overcrossing. Approximately 95 percent of the traffic on Greenville Road originates from the DOE facilities, which have approximately 11,000 employees.

Both Congress and the Lawrence Livermore National Laboratory have provided support in the past for the DOE's role in improving transportation facilities in Livermore. In 1991, thanks to combined efforts by the Laboratory and the City, two grants totaling $2.2 million were allocated for widening and improvement of Vasco Road, which is another main entrance to the DOE facility. In addition, the fiscal year 1992 Defense Authorization Act and the Energy and Water Appropriation Act provided $1.8 million towards transportation improvements, which was used to conduct design and engineering for the Greenville Road Improvement Project.

Before Congress would provide additional support for the project, they directed the DOE to develop a policy regarding their responsibility for transportation improvements. This policy was issued in September 1994 and outlines the process for DOE approval of a specific request for transportation improvements. The local DOE official responsible for a DOE site must determine that a request from a local taxing entity conforms to the policy, and then submits the request to the appropriate Assistant Secretary in Washington. A decision could then be rendered on whether or not DOE will seek funding for implementing the transportation work.

Section 3165 of the fiscal year 1997 National Defense Authorization Act directed DOE to include in the fiscal year 1998 Budget a request for funds to pay the federal

portion of the cost of transportation improvements under the Greenville Road Improvement Project at Livermore, California. The DOE was directed to work with the City of Livermore to determine the cost of the transportation improvements.

As a result, officials from the DOE Oakland Office and the City of Livermore worked together last fall to determine the federal costs for the transportation project. The total cost for improving Greenville Road is $99.5 million, and it was mutually agreed that the federal responsibility for the Greenville Road Improvement Project should be $12.6 million, which includes widening Greenville Road near the laboratories and improving a railroad overcrossing. This amount included previous federal funding provided by the Laboratory, which totaled $4 million. Therefore, the remaining amount of $6.8 million was determined to be the balance of the DOE's responsibility.

The President's Budget Proposal included $6.8 million for the Greenville Road Improvement Project, and the City of Livermore is now requesting the Subcommittee's support for providing half of the funding for the project, or $3.4 million, in the fiscal year 1998 Energy and Water Appropriation Bill. It was determined that only half of the funds for the project could be spent in one fiscal year. The City of Livermore is working concurrently with the National Security Committee to ensure that this project is authorized in the fiscal year 1998 Defense Authorization Bill.

Last November, the Livermore City Council approved a resolution stating that the City will consider the funding from the DOE of $6.8 million as payment in full for DOE's portion of all future City road improvements in and around the vicinity of the Lawrence Livermore National Laboratory and Sandia National Laboratory.

I appreciate the opportunity to submit testimony regarding the Greenville Road Improvement Project, and hope that the Subcommittee will support funding the project at a level of $3.4 million in the fiscal year 1998 Energy and Water Appropriation Bill.

PREPARED STATEMENT OF CHARLES E. OWSLEY, P.E., CITY ENGINEER, PUBLIC WORKS DEPARTMENT, KANSAS CITY, MO

The City of Kansas City, Missouri welcomes the opportunity to provide written testimony to the Subcommittee on Energy and Water Development regarding appropriations for fiscal year 1998. Herein we discuss our major flood mitigation projects which are supported by federal funding and, when complete, will provide substantially increased levels of flood protection. All of these projects are essential to the sustainment and revitalization of prominent and long standing commercial, business and industrial communities in Kansas City.

We presently have four major flood mitigation projects underway. These consist of the Blue River Channel, Blue River Basin, (also known as Dodson Industrial District), and Swope Industrial Park Area, all along the Blue River in Kansas City, Missouri; and the Turkey Creek Basin, Kansas and Missouri. In the near future we hope to begin a fifth project, the restudy of seven Missouri River levees officially titled, Kansas Citys, Missouri and Kansas.

Our largest project, 12 miles of channel modification along the Blue River, has been under construction since 1983. Construction was originally scheduled to be complete in 1998 but, due to federal funding constraints completion is now projected in 2005 by the Corps of Engineers. This is the most important of our current projects and also represents our most urgent need as we are determined to reclaim as much of the lost schedule as possible. This project also includes environmental clean-up along the Blue River and will serve as a means to reclaim a Brownfield area within Kansas City for redevelopment into a once again thriving business district. Funding in the amount of $19.7 million in fiscal year 1998 will allow for construction completion in 2002. Additionally, to achieve this completion date, the project requires funding of $18.5 million in fiscal year 1999, $19.8 million in fiscal year 2000, $20 million in 2001, and $24.4 million in 2002.

Plans, engineering and design (PED) for the Dodson Industrial District levee project as recommended by the Blue River Basin, Kansas City, Missouri, feasibility study are currently being prepared and construction authorization was included in the 1996 WRDA bill. This levee will protect this valuable industrial district located in the Blue River Basin, upstream of the channel modification project and the Swope Park Industrial Area. The PED phase was scheduled to be complete in September, 1999, but due to a lack of funding the schedule is beginning to slip. We request that the funding shortfall experienced in fiscal year 1997, which resulted in the delay, be compensated for by providing funds in the amount of $725,000 in fiscal year 1998, and again in fiscal year 1999, so that completion of PED may be achieved in 1999, and 2001 targeted as the construction start for a two year contract.

The reconnaissance study of the Swope Park Industrial Area, Kansas City, Missouri, also located along the Blue River, just downstream of the Dodson Industrial District, was certified by Washington on March 1, 1997. The City has worked together with the Corps to develop a Project Study Plan (PSP) and hopes to sign the Feasibility Cost Sharing Agreement within the next few weeks. The Swope Park Industrial area has limited access, one-way in and out with a railroad track crossing, which is inundated during the initial phases of rising flood waters. We are anxious to begin and complete the next phases of this project and move on to construction prior to the loss of life due to these especially hazardous flooding conditions. To that end we request that the feasibility study, estimated to cost $950,000, be funded with $178,000 in fiscal year 1998, such that it may be completed in less than the usual three year period. It is our expectation that construction will qualify for funding in the Small Flood Control Authority program, thereby realistically allowing construction to commence in the foreseeable future provided that upcoming phases are sufficiently funded to keep the project moving forward. It is our goal to complete construction on all three of these Blue River projects by September 30, 2003, thereby providing a comprehensive flood mitigation project, together with the accompanying final FEMA map revisions, for this vital industrial region in Kansas City.

The Turkey Creek Basin, Kansas and Missouri, feasibility study has been underway since 1989 and is scheduled for completion in November, 1997. This bi-state drainage basin poses a dual flood threat, from hillside drainage on both sides of the state line and also from flooding of Turkey Creek itself. Commercial and industrial areas in this basin typically experience severe flooding on a three to five year recurrence interval, and a repeat of the July 1993 flood event will very likely lead to abandonment of a large portion of businesses in this presently thriving metropolitan community. We urge continued support of this project with funding in the amount of $291,000 in fiscal year 1998 and will be requesting that it receive new construction authorization in the 1998 WRDA bill.

In addition to the above mentioned ongoing projects, another effort to address flooding in our area is the reconnaissance study of seven existing levees along the Missouri River, Kansas Citys, Missouri and Kansas. These levees, namely, Fairfax, Armourdale and Argentine, all in Kansas; CID in Missouri and Kansas; and North Kansas City, East Bottoms, and Birmingham, all in Missouri; provide the primary flood protection for the most densely developed business regions in the Kansas City area. There exists a critical need for this study as evidenced by the great flood of 1993 when several of the levees were nearly overtopped. Evaluation of how this Missouri River levee system, comprised of these seven levees, namely, functions as a whole is needed to determine inadequacies and inconsistencies in the current level of protection. Due to the immense scope and complexity of this study, which has five separate local sponsors, we request that it be funded with $830,000, approximately $100,000 per levee, to be appropriated equally over a two year period beginning in fiscal year 1998.

Furthermore, I would like to express the City's strong support of several key programs which provide federal assistance for flood mitigation. Among these: Small Flood Control Authority, Section 205 of the 1948 Flood Control Act as Amended; Flood Plain Management Services, Section 206 of the 1960 Flood Control Act; Planning Assistance to States, Public Law 93–251; and Emergency Bank Stabilization, Section 14 of the 1946 Flood Control Act as Amended. We appreciate the availability of these programs and will continue to seek beneficial uses for them within Kansas City, Missouri.

In closing, Kansas City, Missouri, appreciates the past assistance we have received with these very important flood mitigation projects, is prepared to provide its share of funding in the future, and respectfully requests that federal funding adequate to keep these projects on schedule and within budget be appropriated in the upcoming fiscal year. Thank you for your time, attention and consideration.

PREPARED STATEMENT OF GERALD HOLMAN, SENIOR VICE PRESIDENT, WICHITA AREA CHAMBER OF COMMERCE, AND CHAIRMAN, ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

Mr. Chairman and members of this distinguished Committee, my name is Gerald Holman. I am Senior Vice President of the Wichita Area Chamber of Commerce. I am honored to serve as Chairman of the Arkansas River Basin Interstate Committee. Our committee is represented by members from the great states of Arkansas, Colorado, Kansas, Missouri, and Oklahoma. As Chairman, I present this summary testimony as a compilation of the most important projects from each of the member states. Each of the states unanimously support these projects without reservation.

I also respectfully request that the testimony submitted by each state be made a part of these official proceedings.

The Arkansas River Basin Interstate Committee strongly supports the urgently needed Montgomery Point Lock and Dam project at the confluence of the McClellan-Kerr Arkansas River Navigation System and Mississippi River. The Interstate Committee has held this project as our number one priority for the past several years.

Continuing problems caused by sediment and lowering of the Mississippi River plague McClellan-Kerr entrance channel users. During times of low water on the Mississippi River the entrance channel is drained of navigable water depth. Without Montgomery Point the on-going integrity and future use of the navigation system are in peril.

The lock and low water dam is needed to maintain navigation to and from the McClellan-Kerr and thereby protect some $5 billion in public and private investments already made in this system over the past twenty-five years. Thousands of jobs created along the waterway will be preserved and future economic development enhanced.

We are most appreciative that this Committee and the Congress have recognized the urgent need for Montgomery Point Lock and Dam by appropriating $25.6 million to date. We are also grateful Congress has made it clear that it wants this project built.

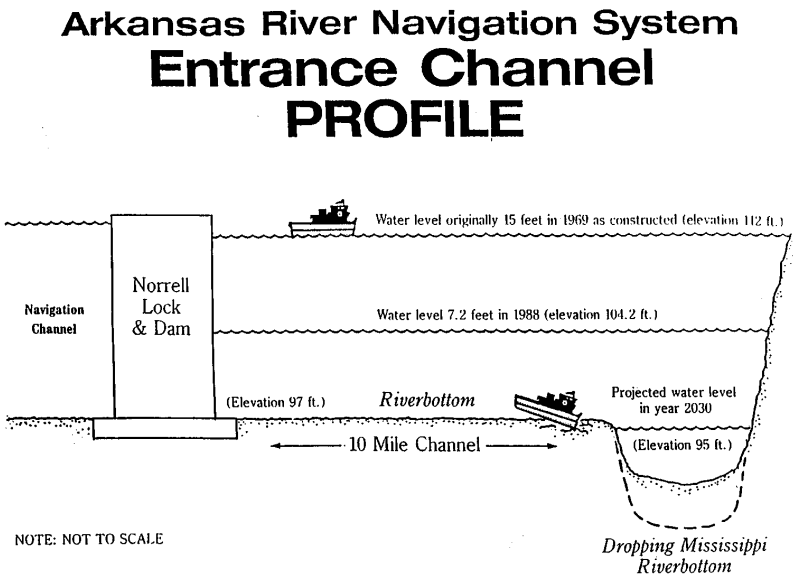
An appropriation of $25 million is needed for fiscal year 1998 to keep Montgomery Point moving forward on schedule in the most economical and cost effective manner possible.

Also of great importance to the Interstate Committee is the Planning Assistance to States Program (Section 22 of the 1974 Water Resources Development Act) which authorizes the Corps of Engineers to use its technical expertise in water and related land resource management to help States and Indian Tribes solve their water resource problems. The program is used by many states to support their State Water Plans. As natural resources diminish, the need to manage those resources becomes more urgent. We recommend your continued support of this important program as it supports States and Native American Tribes in developing resource management plans which will benefit citizens for years to come. The program is very valuable and effective, matching Federal and non-Federal funds to provide cost effective engineering expertise and support to assist communities, states and tribes in the development of plans for the management, optimization and preservation of basin, watershed and ecosystem resources. The Water Resources Development Act of 1996 increased the annual program limit from $6 million to $10 million, however, the fiscal year 1997 appropriation was limited to $2 million. The Committee requests that the annual appropriation for this valuable program be increased to $10 million.

Finally, the Arkansas River Basin Interstate Committee requests your support of the vitally important demonstration project currently underway in Kansas. The project is called the "Equus Beds Groundwater Recharge Demonstration Project." This project is taking flood waters and using them to recharge underground storage for use during times of low rainfall and dry conditions. This project when completed will provide technology for water poor areas throughout the nation. We respectfully request that you provide $500,000 to the Bureau of Reclamation to specifically continue this project.

Mr. Chairman, Members of this Committee, we respectfully request that you and members of your staff review and respond in a positive way to the attached individual statements from each of our states which set forth specific requests pertaining to those states.

We thank you for your consideration and assistance and are deeply appreciative of the foresight and wisdom you and your colleagues have shown in providing solutions to water resource problems each and every year.



PREPARED STATEMENT OF WALLACE A. GIERINGER, CHAIRMAN, ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

Mr. Chairman and Members of the Committee, thank you for the opportunity to present testimony to this most important committee. I recently retired as Executive Director of the Pine Bluff-Jefferson County Port Authority and serve as Arkansas Chairman for the Interstate Committee. Other committee members representing Arkansas, in whose behalf this statement is made, are Messrs. Wayne Bennett, soybean and rice farmer from Lonoke; Colonel Charles D. Maynard, U.S. Army, retired, from Little Rock; Barry McKuin, a Director of the Morrilton Port Authority at Morrilton; and N.M. "Buck" Shell, transportation specialist of Fort Smith and Van Buren.

To each of you, your staff and the Congress—our most heartfelt thanks for appropriating $7 million for fiscal year 1997 for the urgently needed Montgomery Point Lock and Dam.

With these funds the Corps of Engineers is now developing the necessary power supply, completing construction engineering, and is now scheduled to begin construction on the lock and dam proper this summer. Access facilities are already under construction. When completed, Montgomery Point will protect over $5 billion in public and private investments, thousands of jobs and world trade created as a result of the McClellan-Kerr Arkansas River Navigation System.

Without Montgomery Point Lock and Dam the future of our wonderful McClellan-Kerr navigation system is threatened. Let me explain.

—The water level of the Mississippi River controls the level of the entrance channel. In recent years. the surface of the Mississippi River has lowered resulting in navigation restrictions on, and occasional closing of, the entrance channel.

—The low water level of the Mississippi River is projected by the Corps of Engineers to continue to decline. Consequently, the navigable depth of the entrance channel will continue to become less and less thereby drastically reducing the carrying capacity for barges going to or from the system. By 2030 not even empty tows will be able to enter or leave the navigation system. They will be resting on the bottom with no water unless Montgomery Point Lock and Dam is constructed.

The absence of Montgomery Point Lock and Dam continues to deter economic growth along the entire McClellan-Kerr and the project is certainly time sensitive! As the Mississippi River bottom continues to lower the McClellan-Kerr moves toward total shutdown. Existing dredge disposal areas are virtually full. Ongoing

dredging and disposal of material can mean environmental damage. Construction must continue as rapidly as possible if the project is to be in place before disposal areas become inadequate.

We are very grateful that you. your associates, the Congress and the Administration have recognized the urgency of constructing Montgomery Point. Appropriations of $25.6 million have been made to date for engineering, site acquisition and construction for this $163 million project (1993 dollars) which should be completed in 2003 according to the Corps of Engineers published schedule of construction finding.

Mr. Chairman and Members of the Committee, continuing Congressional support is essential at this crucial time in the history of the project. We respectfully request and urge the Congress to appropriate $25 million for use in fiscal year 1998 to continue construction. This funding will insure that the urgently needed facility is in operation as soon as possible at the lowest possible cost.

Other projects arc vital to the environment, social and economic well-being of our region and our nation. We recognize the importance of continued construction of needed features to the MeClellan-Kerr Arkansas River Navigation System and strongly recommend that you favorably consider the following in your deliberations:

Support continued funding for the construction, operation and maintenance of the McClellan-Kerr Arkansas River Navigation System.

Continue construction authority for the McClellan-Kerr Arkansas River Navigation Project until remaining problems identified by the Little Rock District Corps of Engineers have been resolved.

Provide funds and direct the Corps of Engineers to begin construction of the Arkansas River Levees Project as authorized by Section 110 of the Water Resources Development Act of 1990. Continuing engineering and design is needed for these levees which have been previously studied in the cost shared Arkansas River Arkansas and Oklahoma Feasibility Study.

Funds need to be specifically provided and the Corp of Engineers directed to begin rehabilitation construction on the Plum Bayou and Tucker Creek Levees.

Fund continued repair and rehabilitation of the power units at the Dardanelle Lock and Dam which first went into operation in 1965. After this work is completed, power output will be increased by 13 percent and thus increase income to the Federal Treasury.

Direct the Corps of Engineers to complete the Morgan Point Environmental Restoration project in accordance with the cost sharing clarification contained in the Water Resource Development Act of 1996.

Provide funding and direct the Corps of Engineers to install low haulage equipment on the locks and dams between Little Rock and Fort Smith. This efficiency feature will reduce lockage time by as much as 50 percent while permitting tonnage to double in each tow with only a minor increase in operating cost.

We also urge the Congress to encourage the Military Traffic Management Command to continue to identify opportunities to accelerate use of the nation's navigable waterways to move military cargoes thereby helping contain the nation's defense costs.

In conclusion, Mr. Chairman, please help prevent a crisis for the Arkansas River Navigation System and the multi-state region it serves by appropriating $25 million for use in fiscal year 1998 for Montgomery Point Lock and Dam.

The entire Arkansas River Navigation System is at risk, and its long-term viability is threatened. The system will remain at risk until Montgomery Point is constructed, which could be by 2003. Some $5 billion in federal and private investments and thousands of jobs and growing exports are endangered. The proposed lock and dam was in the original project. Thanks to Congressional insistence, the construction authority remains open.

We fully endorse the statement presented to you today by the Chairman of the Arkansas River Basin Interstate Committee. We appreciate the opportunity to testify to your most important subcommittee and urge you to favorably consider our request for needed infrastructure investments in the natural and transportation resources of our nation.

PREPARED STATEMENT OF STEVE ARVESCHOUG, DISTRICT GENERAL MANAGER, SOUTHEASTERN COLORADO WATER CONSERVANCY DISTRICT

Mr. Chairman and Members of the Appropriations Subcommittee on Energy and Water Development thank you for the opportunity to present these comments and requests on behalf of Colorado as participants in the Arkansas River Basin Interstate Committee.

Let me first voice my support for the Interstate Committee's priority funding request for the 1998 budget. The Montgomery Point Lock and Dam project as authorized under the McClellan-Kerr Arkansas River Navigation System in 1946 is well under way and needs the continued support of the Congress. It is an important part of the vital river transportation system.

Allow me to update the Subcommittee members on the needs and issues in Colorado's Arkansas River Basin.

U.S. BUREAU OF RECLAMATION—FRYINGPAN-ARKANSAS PROJECT

Authorized by Congress in 1962 the Fryingpan-Arkansas Project is today greatly benefiting the citizens of Southeastern Colorado. Since the Project began delivering water in 1972 the District and the U.S. Bureau of Reclamation have cooperated to provide 1,014,176 acre-feet of water for agricultural and municipal use within the nine-county service area of the District. The Project has also provided storage for 873,959 acre-feet of valuable winter-stored water for use during the dry summer months in Southeastern Colorado. Local tax payers and water users have paid the USBR over $42 million since signing the Repayment Contract in 1982 and over $50 million in total. Those payments have met the District's repayment obligation to date and paid for our share of the Operations and Maintenance of the Project.

The U.S. Bureau of Reclamation will again request funding for the Multipurpose Operation and Maintenance and the General Project expense for the Fryingpan-Arkansas Project. Mr. Chairman and Members I encourage your continued support for this key water delivery and power generation project in Colorado's Arkansas River Basin by supporting the USBR/Fryingpan-Arkansas request.

Central to the operation of the Fryingpan-Arkansas Project is Pueblo Reservoir, which is located on the Arkansas River just 10 miles west of Pueblo, Colorado. The Reservoir is the delivery point for nearly all Project Water and can store in excess of 360,000 acre-feet. The Reservoir also provides much needed flood control storage during peak runoff periods and storm events in the basin.

The Fryingpan-Arkansas Project is now over 20 years old and will require extraordinary maintenance over the next few years to guarantee reliable operation throughout the Project. Much needed repairs at Pueblo Reservoir Dam are among the highest priority at this time.

The Pueblo Dam's outlet works requires sand blasting and painting, and several electrical gate operators are beginning to experience operational and maintenance problems. The power feed to the dam needs to be replaced, and the form drains need to be repaired. Pumps, gates, operator, emergency generator, supply transformer and gate control equipment are being programmed for major overhaul and/or replacement. In addition, a couple of the main construction joints between the monolithic blocks are leaking excessively and will need to be sealed. These extraordinary repairs, just to the Project's Pueblo Dam, are estimated to cost $600,000 and are over and above the routine annual O&M costs.

Ruedi Dam, a Western-Slope feature of the Fryingpan-Arkansas Project, will also require increased extraordinary maintenance work and it is estimated to cost $80,000.

The U.S. Bureau of Reclamation and the Southeastern District will be working to partially fund these items through the Department of Interior budgeting process and the Congressional appropriations process in the near future—1999 budget.

U.S. ARMY CORPS OF ENGINEERS/COLORADO WATER CONSERVATION BOARD

In December of 1995 the Colorado Water Conservation Board formally requested the assistance of the U.S. Army Corps of Engineers in a study to plan for restoring channel capacity and river ecosystem values in the Arkansas River below John Martin Dam. Study efforts began with the signing of a 50/50 cost share agreement between the Corps of Engineers and the CWCB in August 1996.

The Corps of Engineers portion of the funding comes from the Section 22 Planning Assistance to States Program. That Program has been a valuable tool for addressing water resource planning issues in Colorado. Continued Congressional support for the Program is important.

The "Arkansas River Channel Capacity and Riverine Habitat Study" initially targeted the river reach extending from John Martin Dam downstream to the Colorado/Kansas state line. Continuation of the study reach to at least Garden City, Kansas is possible if a non-federal sponsor for the Kansas reach elects to participate. In addition, a reach from John Martin Dam upstream to Pueblo Reservoir is now included as Part Two of the Channel Capacity Study, and is funded under a separate cost share agreement.

The purpose of the study is to develop and evaluate long-term maintenance plans which, when implemented, can improve channel capacity for flood flows and restore river habitat along the Arkansas River. The study is scheduled for completion in August 1997. This important study effort would not be possible without the cooperation and financial support of many state and local agencies, and of course the Corps of Engineers Planning Assistance Program. As stated earlier, Congressional support for this planning program is needed and appreciated.

ENDANGERED SPECIES ACT REAUTHORIZATION

Many members of Congress will again be challenged with the day-to-day work of bringing to closure the Reauthorization of the Endangered Species Act. I encourage the work of the Senate and House Resources Committees toward striking a balance between the need to conserve the natural species of our world and the demands of resource development. I recognize that to be a tall order.

The Act mandates "conservation" at any costs, even at the cost of the effective use of our water resources. The Arkansas River Basin in Colorado has not yet been directed to curtail water operations in compliance with an endangered species recovery plan. However, that threat exists, with potential new listings and habitat designation. The U.S. Fish and Wildlife Service is now reviewing a recent native aquatic species inventory and a listing may be in our future.

Water users run in fear of such a listing with water rights implication, because the Act grants considerable power to the USFW Service, with no consideration for the economic impacts of species listings, or consideration for the monetary and future costs of recovery. The Southeastern District now spend tens of thousands of dollars each year protecting our publicly held water rights and the private water rights of our constituents from the potential burdens of an Endangered Species Act listing. Yet, we too want to protect our native species.

The Southeastern Colorado Water Conservancy District actively supports the Upper Colorado River Basin Endangered Fish Recovery Program, which is designed to meet the recovery goals of the four listed fish species on the Colorado River, and allow water development to continue, including our transmountain diversions. That program attempts to work through the present rigidity of the ESA to find a balance of interests. It appears to work well, but, I understand that such collaborative efforts which offer assurances to land and water interests are under fire. Even the Department of Interior's "safe harbor" policy under the Habitat Conservation Plan process is now being challenged. Those that challenge these policies claim the ESA does not offer such protection. I would call such "protection" a necessary balance of interests and values, which is very much needed if we plan to meet future water and land use needs for the generations to come.

Your continued work on ESA Reauthorization is encouraged and very much needed.

CONCLUSION

Mr. Chairman and Members, your time and interest in these matters is greatly appreciated. As I present these issues and funding requests to you, I recognize the difficulty you have in meeting these needs along with the many others you have been presented. Of course, like the others, the requests of the Arkansas River Basin Interstate Committee are important to us and our constituents. Your fair consideration of the needs of the member states of the Interstate Committee is all that I can ask.

Thank you for your commitment to the water resource need of our citizens.

Please call on me if you need additional information on the Fryingpan-Arkansas Project of the Southeastern Colorado Water Conservancy District (Steve Arveschoug, 719–544–2040).

PREPARED STATEMENT OF GERALD H. HOLMAN, CHAIRMAN, ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

SUMMARY STATEMENT

The water resource projects in the Kansas Portion of the Arkansas River Basin have been carefully reviewed and reflect accurately the need. Many of the projects are safety, environmental and conservation oriented.

In addition to the projects summarized below, we state our unanimous support for the fiscal year 1998 request of $25 million for continued construction of the critical Montgomery Point Lock and Dam Project to maintain viable commerce of navigation between the McClellan-Kerr Waterway and the Mississippi River.

We ask for your support for these important Bureau of Reclamation Projects:

City of Wichita/Groundwater Management District No. 2/State of Kansas Groundwater Recharge Demonstration Project.—A multi-year pilot project to demonstrate the feasibility of recharging a major groundwater resource supplying water to nearly 500,000 municipal, industrial and irrigation users and will also reduce potential degradation of the existing groundwater quality by minimizing migration of saline water. Continued funding in fiscal year 1998 is requested in the amount of $500,000.

Cheney Reservoir.—On the North Fork of the Ninnescah River providing natural treatment of inflows in the upper reaches of Cheney Reservoir to control poor water quality due to agricultural runoff. Previous funding is appreciated. Bureau funding is not requested in fiscal year 1998.

On-going Water Quality/Environmental Research.—Authorization of on-going Bureau of Reclamation research is critical to protecting existing supplies.

We ask for your support for these equally important projects of the Corps of Engineers:

Arkansas City, Kansas Flood Protection.—To protect homes and businesses from catastrophic damages resulting from either Walnut River or Arkansas River flooding. Previous funding is appreciated and continued funding is needed to complete the project as authorized.

Winfield, Kansas Flood Protection.—This project will raise and extend an existing levee to provide badly needed flood control for the city. Fiscal year 1996 and fiscal year 1997 funding is appreciated and continued funding is requested to complete the project.

Grand/Neosho River Basin.—Fiscal year 1997 research funding in the amount of $500,000 is appreciated to evaluate the adequacy of federal flood control easements around Grand Lake. Needed solutions impact both Kansas and Oklahoma. The study can be completed in fiscal year 1998 with continued funding at the level needed by the Corps of Engineers.

On-going Water Quality/Environmental Protection Research.—Authorization of on-going Corps of Engineers research is essential as is demonstration project funding.

Kanapolis Lake Water Quality Storage Reallocation.—We urge you to support the Kansas Water Office request of the Corps of Engineers to reallocate existing water quality storage for public supply availability for communities.

We urge your continued support of the Department of Interior project:

Quivira National Wildlife Refuge.—An engineering study to identify the watershed-based options available for producing the most efficient use of resources for the refuge and irrigation needed to support the area agricultural economy. The study can be completed with no additional funding. Your future support to implement solutions will be appreciated.

PREPARED STATEMENT

Mr. Chairman and Members of this distinguished Committee, I am Gerald H. Holman, Senior Vice President of the Wichita Area Chamber of Commerce, Wichita, Kansas and Chairman of the Kansas Interstate Committee for the Arkansas River Basin. This statement is submitted on behalf of the entire Kansas Delegation. Other members of the Kansas delegation are Arthur T. Woodman, Architect with offices in Wichita, and Frank Liebert Attorney-At-Law, Coffeyville.

We are honored to join with our colleagues from the states of Arkansas, Colorado, Missouri and Oklahoma, which five states, including Kansas, comprise the Arkansas River Basin Interstate Committee. We are unified as a region and fully endorse the statement of the combined Arkansas River Basin Interstate Committee.

In addition to the important projects listed below, we state our unanimous support for the construction of the critical Montgomery Point Lock and Dam Project to maintain viable navigation for commerce between the McClellan-Kerr Waterway and the Mississippi River. This inland waterway is vital to the economic health of the five state area and your support is needed to maintain its future viability. We hereby state our unanimous support for the $25 million needed by the Corps of Engineers to maintain the most economical and cost efficient construction schedule.

The water resource projects in the Kansas portion of the Arkansas River Basin have been carefully reviewed by the Kansas delegation and reflect accurately the need. Many of the projects are safety, environmental and conservation oriented. We are grateful for your past commitment and respectfully request your continued commitment.

We ask for your support for these important Bureau of Reclamation projects for the Wichita area:

City of Wichita/Groundwater Management District No. 2/State of Kansas Groundwater Recharge Demonstration Project.—This is the continuation of a Bureau of Reclamation project entitled "Equus Beds Groundwater Recharge Demonstration Project" to demonstrate the feasibility of recharging a major groundwater resource supplying water to nearly one-half million municipal, industrial and irrigation users. This model technology has application to other areas throughout the nation. The full scale project when implemented, will capture flood flows from the Little Arkansas River providing water for use during times of low rainfall or dry conditions and will also reduce potential degradation of the existing groundwater quality by minimizing migration of saline water.

The Equus Beds provide approximately half of the Wichita area municipal water supply. This recharge project is vital to the future of the metropolitan Wichita area and surrounding farming communities. We are grateful for the $1 million funding in fiscal year 1995 and fiscal year 1996 and the $875,000 in fiscal year 1997. Fiscal year 1998 funding in the amount of $500,000 is requested to cost share with City of Wichita funding for this on-going federally supported project. Governor Graves supports this much needed project as a benefit to 20 percent of the state's population.

Cheney Reservoir.—The reservoir provides approximately 50 percent of Wichita's water supply. Two environmental problems threaten the water quality and longevity of the reservoir. One is sedimentation from soil erosion and the other is non-point source pollution, particularly the amount of phosphates entering the reservoir resulting in offensive taste and odor problems. Potential pollution sites in the watershed above the reservoir have been identified along with Best Management Practices that can help reduce the pollution from those sites. The City of Wichita has committed $1.2 million to this project for implementing soil conservation practices consistent with the Management Plan. The Bureau of Reclamation constructed the reservoir and has remained involved in on-going support. Bureau funding in fiscal year 1997 in the amount of $235,000 was approved as cost share support for the local funding provided by the City of Wichita. Bureau funding in fiscal year 1998 is not requested for this model project although future funding requests may be made.

On-going Water Quality and Environmental Research.—Aggressive and innovative treatment techniques must be identified and implemented to protect our valuable water resources from increasing environmental problems. Authorization of on-going Bureau of Reclamation research is critical to protecting existing resources.

This Committee has given its previous support to many important local protection projects in Kansas. Many projects are now completed and we are most grateful for your construction authorization. Since our agricultural communities have historically experienced major flood disasters, we are justifiably interested in rapidly moving other needed projects to completion. These projects all have multi-state impacts involving portions of the state of Oklahoma. However, our small communities do not have the funds nor engineering expertise necessary to provide adequate flood damage reduction measures.

Therefore, consistent with your previous authorizations and consistent with the multi-state direction of the Corps of Engineers, we ask for your continued support for the following projects:

Arkansas City, Kansas Flood Protection.—This project is in response to a critical need to protect the environment, homes and businesses from catastrophic damages that would result from either Walnut River or Arkansas River flooding which could include flood borne petroleum products from the Arkansas City refinery. The Corps of Engineers has extensively coordinated with the city and various state agencies in the development of this project, which when completed will eliminate damage in a multi-county area and also result in benefits to the state of Oklahoma just a few miles south of the project. We appreciate $700,000 fiscal year 1996 and $1 million fiscal year 1997 funding. Also in fiscal year 1997, the Secretary of the Army, civil works, was authorized to construct the project. We request your continued support for the immediate implementation of construction as authorized in fiscal year 1997 at the funding level needed by the Corps of Engineers.

Winfield, Kansas Flood Protection.—This project will raise and extend an existing levee to provide badly needed flood control for the city. Your fiscal year 1996 support in the amount of $670,000 and $1 million in fiscal year 1997 is appreciated. All design studies are completed. We urge your continued support for project construction at the level needed by the Corps of Engineers to insure the safety of Winfield's citizens.

Grand/Neosho River Basin.—The Grand/Neosho River Committee was formed at the request of both the Kansas and Oklahoma congressional delegations to evaluate water resource problems affecting both Kansas and Oklahoma. We appreciated your

$500,000 fiscal year 1996 funding as well as the follow-on funding in fiscal year 1997 to initiate the Flood Easement Adequacy Study to evaluate the adequacy of federal flood control easements around Grand Lake. This study can be completed in fiscal year 1998 with your continued support at the level needed by the Corps of Engineers. We also support additional basin-wide resource planning in the Grand/Neosho River basin to ensure Grand Lake operations are protective of the entire basin within the two state area.

On-going Water Quality/Environmental Protection Research.—Environmental problems are increasing the importance of continued research to protect our valuable water resources. Aggressive and innovative treatment techniques must be identified and implemented. Authorization of on-going Corps of Engineers research is essential, and as appropriate, demonstration project funding.

Kanapolis Lake Water Quality Storage Reallocation.—Agricultural communities in central Kansas are in need of additional public water supplies. A cost effective solution is reallocating existing water quality storage in Kanapolis Lake for public supply availability. The Kansas Water Office has made a request of the Corps of Engineers to authorize the reallocation which is a most expeditious solution for central Kansas. We urge you to support our request of the Corps of Engineers.

Your authorization of funding for a most important U.S. Department of Interior, Fish and Wildlife Service project is also requested:

Quivira National Wildlife Refuge.—This is a joint project involving the U.S. Fish and Wildlife Service—Region 6, the State of Kansas, the local groundwater management district and the Water Protection Association of Central Kansas. Quivira provides a resting area for waterfowl and endangered species during their annual migrations in the Central Flyway. The Refuge is comprised of a series of shallow pools totaling about 6,500 surface acre-feet and is part of the Rattlesnake Creek basin. The Rattlesnake Creek basin has experienced significant groundwater and streamflow declines in recent years due to climatic conditions as well as expansion of irrigated agriculture. An engineering feasibility study is underway to identity the watershed based options available for producing the most efficient and effective use of the water resources of the Rattlesnake Creek basin to protect the Wildlife Refuge as well as the agriculture economy of the area. Fiscal year 1996 funding in the amount of $760,000 and $1,400,000 in fiscal year 1997 is very much appreciated and will complete the study. No funding is requested for fiscal year 1998 although future funding requests may be made.

Finally, we are most concerned with any proposal to limit participation of both the Corps of Engineers and Bureau of Reclamation in development and protection of water resources infrastructure. It is essential to have the integrity and continuity these agencies provide on major public projects. Your continued support of these vital agencies including funding, will be greatly appreciated.

Mr. Chairman and Member of this Committee, we thank you for the dedicated manner in which you and your distinguished colleagues have dealt with the Water Resources Programs and for allowing us to present our views and recommendations. We look forward with great expectations and hope for the future of water resource development in Kansas and the Arkansas River Basin.

PREPARED STATEMENT OF JAMES M. HEWGLEY, JR., CHAIRMAN, ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

SUMMARY

The water resource needs for the State of Oklahoma have been carefully reviewed and the following accurately represents the needs of the citizens of our region.

We hold as our number one priority the construction of the Montgomery Point Lock and Dam in Arkansas. The completion of this project is critical to the continued use of the navigation system and the continued growth of the entire region. We request an appropriation of $25 million for fiscal year 1998.

Our committee recommends that $250,000 be made available to the Tulsa District, Corps of Engineers, to initiate an Assessment of the McClellan-Kerr Arkansas River Navigation System and related purposes.

We also request your support of the Planning Assistance to States Program which authorizes the Corps of Engineers to use its technical expertise in water and related land resource management to help States and Indian Tribes solve their water resource problems. This committee requests that the annual appropriation for this valuable program be increased to the allowable $10 million.

We support the ongoing effort to evaluate water resource problems in the Grand/Neosho River Basin in Kansas and Oklahoma. We support the completion funding

of studies to determine the adequacy of existing real estate easements necessary for flood control operations of Grand Lake, Oklahoma.

We also support funding for the Continuing Authorities Program, including the Small Flood Control Projects Program, and the Emergency Streambank Stabilization Program.

The committee supports funding for a Dam Safety project at Tenkiller Ferry Lake, Oklahoma.

We request your continued support of the Flood Plain Management Services Program which authorized the Corps of Engineers to use its technical expertise to provide guidance in flood plain management matters to all private, local, state and Federal entities.

We also request your continued support of and funding for the Environmental Restoration Program.

On a related matter of grace importance to the Interstate Committee, we would respectfully request that during the reauthorization of the Endangered Species Act, the Congress should consider amending the Act to require the consideration of the economic impacts in a decision to list a species as endangered or threatened.

Finally, the committee supports the reactivation of the Arkansas Basin Advisory Committee.

PREPARED STATEMENT

Mr. Chairman and members of the committee, I am James M. Hewgley, Jr., Oklahoma Chairman of the Arkansas River Basin Interstate Committee, from Tulsa. Oklahoma.

It is my privilege to present this statement on behalf of the Oklahoma Members of our committee in support of adequate funding for water resource development projects in our area of the Arkansas River Basin. Other members of the Committee are: Mr. E.R. Albert, Jr., Tulsa; Mr. Robert S. Kerr, Jr., Oklahoma City; and Mr. Coleman Fite, Muskogee.

Together with representatives of the other Arkansas River Basin states, we fully endorse the statement presented to you by the Chairman of the Arkansas River Basin Interstate Committee. We appreciate the opportunity to present our views of the special needs of our State concerning several studies and projects.

As we have testified in the past, serious problems exist at the waterway entrance to the McClellan-Kerr Arkansas River Navigation System. Extensive testing has proved that construction of Montgomery Point Lock and Dam will be necessary to correct the problem. This project must be started soon to regain/maintain the shippers confidence in the reliability of the system.

Your recognition, as well as that of the Administration, of the importance of constructing Montgomery Point Lock and Dam is very gratifying. To date, you and your colleagues have appropriated $25.6 million for engineering, site acquisition and construction. This action is very much appreciated.

We are thankful the Congress, in Public Law 102–580 directed that "The Secretary shall proceed expeditiously with design, land acquisition and construction of the Montgomery Point Lock and Dam on the White River, Arkansas, authorized as part of the MeClellan-Kerr Waterway by section 1 of the River and Harbor Act of July 24, 1946 (60 State. 635–636)."

We respectfully request the Congress appropriate $25 million in the fiscal year 1998 budget cycle to continue construction for the authorized project. This is the amount that the Corps of Engineers has indicated that they can effectively contract during fiscal year 1998. This will help to insure that the project is completed and in operation as soon as possible at the lowest possible cost.

Mr. Chairman, members of this distinguished Committee, we respectfully remind each of you that this navigation system has brought low cost water transportation to Oklahoma, Arkansas and surrounding states. The Federal Government has invested $1.4 billion in constructing the system and there has been over $4 billion invested by the public and private sectors to develop the land side facilities and more than 53,000 jobs have been created as a result.

The Interstate Committee recommends that $250,000 be made available to the Tulsa District, Corps of Engineers, to initiate an Assessment of the McClellan-Kerr Arkansas River Navigation System and related purposes in fiscal year 1998. This assessment will evaluate the economic impacts that the construction and operation of this major resource system has had on the Nation the impacted states and local areas along the system. Project outputs will be identified as to incidence of principal beneficiary and nature and magnitude of the outputs (benefits). Project features will be examined from the perspective of whether or not greater efficiencies can be achieved by defederalizing project components including the operation and mainte-

nance of those features such as transfer to non-federal governmental bodies or the private sector. Such an assessment will provide a basic model for similar projects around the nation.

We also request your support of the Planning Assistance to States Program (Section 22 of the 1974 Water Resources Development Act) which authorizes the Corps of Engineers to use its technical expertise in water and related land resource management to help States and Indian Tribes solve their water resource problems. The program is used by many states to support their State Water Plans. As natural resources diminish, the need to manage those resources becomes more urgent. We recommend your continued support of this program as it supports States and Native American Tribes in developing resource management plans which will benefit citizens for years to come. The program is very valuable and effective, matching Federal and non-Federal funds to provide cost effective engineering expertise and support to assist communities, states and tribes in the development of plans for the management, optimization and preservation of basin, watershed and ecosystem resources. The Water Resources Development Act of 1996 increased the annual program limit from $6 million to $10 million, however, the fiscal year 1997 appropriation was limited to $2 million. The committee requests that the annual appropriation for this valuable program be increased to $10 million.

We are particularly pleased that the President's budget includes funds to advance work for Flood Control in Oklahoma. Of special interest to our committee is funding for Mingo Creek, Tulsa, Oklahoma and Fry Creeks, Bixby, Oklahoma.

Studies conducted by the Tulsa District in the 1970's identified the potential for flood damage reduction measures in the Cimarron River Basin. Several potential multiple purpose reservoirs were considered for development in response to needs for flood control, water supply, fish and wildlife and recreation. Development and operation of these projects in conjunction with the existing system of reservoirs in the Arkansas River Basin would provide for flood damage reduction along the Cimarron River downstream, as well as along the Arkansas River from Keystone Dam near Tulsa to Fort Smith, Arkansas. These projects would also offer the potential for development of hydropower and navigation benefits along the McClellan-Kerr Arkansas River Navigation System. Considerable local interest has developed in these projects, particularly the potential Crescent Lake which would be located about 15 miles north of Oklahoma City and the Tulsa District has received letters of support for initiation of reconnaissance studies from the Oklahoma Water Resources Board and the mayors of Guthrie, Crescent and Oklahoma City. The committee requests funding in fiscal year 1998 to initiate a reconnaissance study of the Cimarron River Basin.

We also support the ongoing effort to evaluate water resource problems in the Grand-Neosho River Basin in Kansas and Oklahoma. We support the completion funding of studies to determine the adequacy of existing real estate easements necessary for flood control operations of Grand Lake, Oklahoma. The study, authorized by the Water Resources Development Act of 1996 and partially funded in fiscal year 1997, will evaluate whether the Corps of Engineers has adequate flood control easements in the upper reaches of Grand Lake. If that evaluation indicates additional real estate interest is required, the Act further authorizes acquisition from willing sellers. That study can be completed in fiscal year 1998 if funding is provided: we urge you to fund this important project. The committee also supports a follow-on study in the Grand-Neosho basin which would evaluate potential changes to Grand Lake operations and the resulting impacts to other basin water resource needs and interests. The committee fully supports those studies which could provide relief to the property owners upstream of Grand Lake, Oklahoma.

In addition, the committee supports a study for additional basin-wide water resource planning in the Grand-Neosho River basin. That study would focus on the evaluation of institutional measures which could assist communities, landowners and other interests in northeastern Oklahoma and southeastern Kansas in the development of non-structural measures to reduce flood damages in the basin. The committee requests funding to initiate reconnaissance studies in fiscal year 1998.

We also support funding for the Continuing Authorities Program, including the Small Flood Control Projects Program. (Section 205 of the 1948 Flood Control Act, as amended) and the Emergency Streambank Stabilization Program, (Section 14 of the 1946, Flood Control Act, as Amended). We want to express our appreciation for your continued support of those programs.

Although the Small Flood Control Projects Program addresses flood problems which generally impact smaller communities in rural areas and would appear to benefit only those communities, the impact of those projects on economic development crosses county, regional and sometimes state boundaries. The communities served by the program frequently do not have the funds or engineering expertise

necessary to provide adequate flood damage reduction measures for their citizens. Continued flooding can have a devastating impact on community development and regional economic stability. The program is extremely beneficial and has been recognized nation-wide as a vital part of community development, so much so, in fact, there is currently a backlog of requests from communities who have requested assistance under this program. Oklahoma communities that have requested assistance from the Corps of Engineers under the Section 205 authority and are currently on a waiting list include Bartlesville, Bixby, Clinton, Dewey, Lawton, McAlester, Sayre and Stillwater. Additionally, the Pawnee Indian Tribe has requested the Corps' assistance with flooding problems.

The committee also supports funding for a Dam Safety project at Tenkiller Ferry Lake, Oklahoma. The project is authorized by the Flood Control Act of 1938. The Tenkiller Dam is located on the Illinois river 7 miles northeast of Gore, Oklahoma and 22 miles southeast of Muskogee, Oklahoma. Construction of the existing project began in June 1947, embankment closure was completed in May 1952. The proposed project consists of an auxiliary spillway with five 50 feet wide by 35 feet high tainter gates to be constructed near the right abutment of the embankment. The spillway structure will be similar to the existing spillway.

The problem is that the existing spillway is inadequate to pass the probable maximum flood, and if occurred, the embankment would be over-topped for a duration of 30 hours. The existing spillway would pass approximately 85 percent of the probable maximum flood. If this event occurred and over-topping caused dam failure, severe economic damage would be incurred downstream. The town of Gore is located about 7 miles downstream from the dam; however, the risk of loss of life would not be high as the town would be inundated by flood releases prior to dam failure because of the small downstream channel capacity.

The Administration supports this project.

Likewise, the Emergency Streambank Stabilization Program provides quick response engineering design and construction to protect important local utilities, roads and other public facilities in smaller urban and rural settings from damage due to streambank erosion. The protection afforded by this program helps insure that important roads, bridges, utilities and other public structures remain safe and useful. By providing small, affordable and relatively quickly constructed projects, these two programs enhance the lives of many by providing safe and stable living environments. There is also a backlog of requests under the program; counties in Oklahoma that have requested assistance under the Section 14 authority and are on a waiting list include: Blain, Caddo, Canadian, Choctaw. Cleveland, Garvin, Grady, Payne and Woods. Other Oklahoma communities needing assistance include Bartlesville and Shawnee.

We also request your continued support of the Flood Plain Management Services Program (Section 206 of the 1960 Flood Control Act) which authorizes the Corps of Engineers to use its technical expertise to provide guidance in flood plain management matters to all private, local, state and Federal entities. The objective of the program is to support comprehensive flood plain management planning. The program is one of the most beneficial programs available for reducing flood losses and provides assistance to officials from cities, counties, states and Indian Tribes to ensure that new facilities are not built in areas prone to floods. Assistance includes flood warning, flood information is provided on a cost reimbursable basis to home owners, mortgage companies, Realtors and others for use in flood plain awareness and flood insurance requirements.

We also request your continued support of and funding for the Environmental Restoration Program (Section 1135 of the Water Resources Development Act of 1986). The Environmental Restoration Program is a relatively new program which offers the Corps of Engineers a unique opportunity to work to restore valuable habitat, wetlands and other important environmental features which previously could not be considered. Local interest has been expressed for potential environmental restoration projects located at Great Salt Plains Reservoir, Lake Arcadia, Lake Eufaula, Lower Illinois River, Mountain Fork River, Meadow Lake, North Canadian River and the Sequoyah National Wildlife Refuge.

On a related matter of grave importance to the Interstate Committee, we would respectfully request that during the reauthorization of the Endangered Species Act, the Congress should consider amending the Act to require the consideration of economic impacts in a decision to list a species as endangered or threatened as well as mandatory designation of critical habitat at the time the specie is listed, if critical habitat is to be considered. In addition we request that the Congress direct the U.S. Fish and Wildlife Service to develop procedures to objectively share information and specimens with parties that have a beneficiary interest in the listing process.

And finally, the committee supports the reactivation of the Arkansas Basin Advisory, Committee. That committee, chaired by the Southwestern Division Commander, has been an important link between the Corps of Engineers and the beneficiaries of the outstanding water resource development projects on the Arkansas River and its major tributaries in the Tulsa and Little Rock Districts. The committee provides an ongoing forum for the discussion of water resource problems and addresses the need for changes to the system operations.

PREPARED STATEMENT OF TERRENCE J. O'BRIEN, METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

On behalf of the Metropolitan Water Reclamation District of Greater Chicago (District), I want to thank the Subcommittee for this opportunity to present our priorities for fiscal year 1998 and, at the same time, express our appreciation for your support of the District's projects in the years past. The District is the local sponsor for three Corps of Engineers' priority projects of the Chicagoland Underflow Plan: the O'Hare, McCook and Thornton Reservoirs. We are requesting the Subcommittee's full support for these vital projects. Specifically, we are asking that reprogrammed funding be made available for the O'Hare Reservoir in the Subcommittee's Energy and Water Development Appropriations Act for Fiscal Year 1998. Further, we request the Subcommittee to ensure that $5 million in carry-over construction funding for McCook and Thornton Reservoir projects is identified in the bill. Finally, we are requesting that bill language be included in the Act directing the transfer of the Natural Resources Conservation Service (NRCS) portion of the Thornton Reservoir to the Corps for initiation of construction of the project. The following text outlines these projects and the need for the requested funding. Also, attached is a booklet indicating the municipalities in our area which directly benefit from these projects and the need for the requested funding. The booklet reviews the history of the issues involved, including newspaper articles and pertinent data from the Corps of Engineers and the Illinois State Water Survey.

THE CHICAGOLAND UNDERFLOW PLAN

The Chicagoland Underflow Plan (CUP) consists of three reservoirs: the O'Hare, McCook, and Thornton Reservoirs. The O'Hare Reservoir project was fully authorized for construction in the Water Resources Development Act of 1986 (Public Law 99–662). The authorization provides for the construction of a 1,050 acre-foot floodwater storage reservoir which will be connected to the existing O'Hare segment of the District's Tunnel and Reservoir Plan (TARP). Adopted in 1972, TARP was the result of a multi-agency effort which included officials of the State of Illinois, County of Cook, City of Chicago, and the District.

TARP was designed to address the overwhelming water pollution and flooding problems of the Chicagoland area. These problems stem from the fact that the capacity of the area's waterways has been overburdened over the years and has become woefully inadequate in both hydraulic and assimilative capacities. These waterways were no longer able to carry away the combined sewer overflow discharges nor were they able to assimilate the pollution associated with these discharges. Severe basement flooding and polluted waterways (including Lake Michigan which is the source of drinking water for millions of people) was the inevitable result. We point with pride to the fact that TARP was found to be the most cost-effective and socially and environmentally acceptable way for reducing these flooding and water pollution problems. Experience to date has reinforced such findings with respect to economics and efficiency.

The plan called for the construction of new "underground rivers" beneath the area's waterways. The "underground rivers" would be tunnels up to 35 feet in diameter and 350 feet below the surface. To provide an outlet for these tunnels, reservoirs were to be constructed at the end of the tunnel system. Approximately 93.4 miles of tunnels have been constructed and are operational or are under construction at a total cost of $2.1 billion. These tunnels capture the majority of the pollution load by capturing all of the small storms and the first flush of the large storms. Another 15.5 miles of tunnels costing $365 million need to be completed. The tunnels currently have no place to discharge when they fill up during large rainstorms because the O'Hare, Thornton, and McCook Reservoirs have not yet been built. Without these outlets, the local drainage has nowhere to go when large storms hit the area. Therefore, the combined stormwater and sewage backs up into over 470,000 homes. This is a reduction from the 550,000 homes impacted before the operational tunnels were put on line.

THE O'HARE RESERVOIR—CHICAGOLAND UNDERFLOW PLAN

The O'Hare Reservoir project is the first component of CUP, the Corps' reservoir plan. Understanding the severe flood threat to the densely populated north central Cook County area, Congress authorized the project in 1986. The project's 1,050 acre-feet of storage is the optimum cost-effective storage capacity for flood control purposes. In the fiscal year 1990 Energy and Water Development Appropriations Act, Congress provided $1.5 million in first-year construction funds for the O'Hare Reservoir and specified that the reservoir be built to at least 1,050 acre-feet in size as authorized, and in full accordance with the cost-sharing percentages specified in Section 103(a) of the Water Resources Development Act of 1986. The Fiscal Year 1992 Energy and Water Development Appropriations Act provided $4.0 million in additional construction funds to continue construction on the O'Hare Reservoir project and contained language directing the Corps of Engineers to award continuing contracts until construction is completed. Total Federal funding contributed since 1990 is $22 million for this project.

As we have stated to this Committee over the years, the District is the local sponsor for this project and is fully committed to it. The District purchased the necessary land at a cost of $4.4 million and spent $3.0 million for utility relocations. The District will continue to meet its remaining cost-sharing obligations under the law, and will contribute $1.8 million in cash for this project.

Based on the present high flood risk and potential damage due to inadequate channel capacity, we, along with our supportive congressional delegation, are requesting that the Subcommittee make reprogrammed funds available to complete critical construction work on the O'Hare Reservoir project in the fiscal year 1998 Energy and Water Development Appropriations Act. With this funding the Corps of Engineers will be completing the first reservoir for the overall TARP system.

Based on two successive Presidentially-declared flood disasters in our area in 1986 and again in 1987 and dramatic flooding in the last several years, we believe the probability of this type of flood emergency occurring before implementation of the critical flood prevention measure is quite high. As the public agency for the greater Chicagoland area responsible for water pollution control, and as the regional sponsor for flood control, we have an obligation to protect the health and safety of our citizens. We are asking your support in helping us achieve this necessary and important goal of construction and completion.

Our most recent flooding occurred just two weeks ago when, on February 20, 1997, almost four inches of rain fell on the greater Chicagoland area. Due to the frozen ground, almost all of the rainfall entered our combined sewers, causing sewage back-ups throughout the area. When the existing TARP tunnels filled with approximately 1.2 billion gallons of sewage and runoff, the only remaining outlets for the sewers were our waterways. Between 9:00 p.m. and 3:00 a.m. the Chicago and Calumet Rivers rose six feet. For the first time since 1981 we had to open the locks at all three of the waterway control points; these include Wilmette, downtown Chicago, and Calumet. Approximately 4.2 billion gallons of combined sewage and stormwater had to be released directly into Lake Michigan.

THE MC COOK AND THORNTON RESERVOIRS—CHICAGOLAND UNDERFLOW PLAN

The McCook and Thornton Reservoirs of the Chicagoland Underflow Plan (CUP) were fully authorized for construction in the Water Resources Development Act of 1988 (Public Law 100–676). CUP, as previously discussed, is a flood protection plan that is designed to reduce basement and street flooding due to combined sewer back-ups and adequate hydraulic capacity of the urban waterways. These projects are the second and third components of CUP, they consist of reservoirs to be constructed in west suburban Chicago and Thornton in south suburban Chicago.

These reservoirs will provide a storage capacity of 15.6 billion gallons and will produce annual benefits of $104 million. The total potential annual benefits of these projects are approximately twice as much as their total annual cost. The District, as the local sponsor, is actively pursuing land acquisition for these projects, and is prepared to meet its cost sharing obligations under Public Law 99–662.

These projects are a very sound investment with a high rate of return. They will enhance the quality of life and the safety and the peace of mind of the residents of this region. The State of Illinois has endorsed these projects and has urged their implementation. In professional circles, these projects are hailed for their far-sightedness, innovation, and benefits.

This year, based on significant flooding in the Calumet area, we have a specific request for Thornton Reservoir. While the Natural Resources Conservation Service (NRCS) has responsibility for constructing a portion of the reservoir, its schedule for completion of the reservoir is locally unacceptable. Therefore, we are requesting

the Committee to include bill language directing the NRCS to transfer its portion of the Thornton Reservoir to the Corps and directing the initiation of construction in accordance with the NRCS document. We understand carry-over funds for the project are sufficient to allow the Corps to initiate construction of this portion of the Thornton Reservoir. As Congress has already authorized the project and the NRCS plan is currently tied to the Corps plan, we will be saving federal dollars by moving to construction quicker. Recent analysis by the District has shown that a combined reservoir provides significant benefits in terms of costs, constructibility and early availability.

We have been very pleased that over the years, the Subcommittee has seen fit to include critical levels of funds for this important project. We were delighted to see the $6,700,000 in unobligated construction funds included in the Energy and Water Development Appropriations Bill for fiscal year 1997. However, it is critical that we receive carry-over funds in fiscal year 1998 to maintain the commitment to this project. Given the Corps' progress, Congress' direction and in order to provide critical flood relief, the District is urgently requesting that the Subcommittee ensure that $5 million in carry-over construction funding for the McCook and Thornton Reservoir projects is identified in the Fiscal Year 1998 Energy and Water Development Appropriations Act.

SUMMARY

Given the broad sweep of our jurisdiction and the severity of flooding in our area, the Corps was compelled to develop a plan that would compliment the uniqueness of TARP and be sizable enough to accommodate our service area. With a combined sewer area of 375 square miles, consisting of the City of Chicago and 51 contiguous suburbs, there are 550,000 homes within our jurisdiction which are subject to flooding at any time. Of these, 185,000 homes flood on a regular basis because of inadequate conveyance and outlet capacity.

The annual damages sustained exceed $150 million. If these projects were in place, these damages could be eliminated. We must consider the safety and peace of mind of the two million people who are affected as well as the disaster relief funds that will be saved when these projects are in place. As the public agency in the greater Chicagoland area responsible for water pollution control, and as the regional sponsor for flood control, we have an obligation to protect the health and safety of our citizens. We are asking your support in helping us achieve this necessary and important goal. It is absolutely critical that the Corps' work, which has been proceeding for several years, be continued on schedule.

Therefore, we urgently request that necessary reprogrammed funds be made available in the Fiscal Year 1998 Energy and Water Development Appropriations Act to complete construction of the O'Hare Reservoir and ensure that the $5 million in carry-over construction funding for the McCook and Thornton Reservoirs be made available in the appropriations bill.

Further, we request that bill language be included in the Act to direct the transfer of the NRCS portion of Thornton Reservoir to the Corps and for the Corps to initiate construction of the project using carry-over funds.

Again, we thank the Subcommittee for its support of our projects over the years and we thank you in advance for your consideration of our request this year.

[CLERK'S NOTE: The briefing for Illinois Congressional Delegation prepared by the Metroplitan Water Reclamation District of Greater Chicago is being held in the files of the subcommittee.]

TEXAS WATER RESOURCE DEVELOPMENT PROJECTS

PREPARED STATEMENT OF DAVID JENKINS, PRESIDENT, TRINITY RIVER AUTHORITY OF TEXAS

Mr. Chairman and Members of the Committee: My name is David Jenkins, and I serve as President of the Trinity River Authority of Texas Board of Directors.

TRA supports the level of capability expressed by the U.S. Army Corps of Engineers for projects located in the Trinity River Basin.

Wallisville Saltwater Barrier Project

After 14 years of bitter litigation with environmental opponents to Wallisville, it was reshaped and reborn as an environmentally neutral project. Construction on this most important federal project was resumed in 1991. Progress on Wallisville has been acceptable since that time.

When completed, Wallisville and Lake Livingston, a 90,000 surface acre water supply project completed in 1970 with 100 percent local funds, will operate as a system extending the City of Houston's water supplies through the year 2035. By eliminating the need to wastefully release large amounts of fresh water to hydraulically flush saltwater from the intake structures of a series of rice irrigation systems and the coastal water authority during low river flow conditions, this system operation will make more water available for beneficial use in the greater Houston metropolitan area and in the lower Trinity River Valley. Until the Federal Government completes Wallisville as specified in the 1967 local sponsors' cost-sharing agreement, and approved by Congress in 1983, the system benefits of these two projects cannot be realized.

The Galveston District of the Corps of Engineers has expressed a capability of utilizing $15 million during fiscal year 1998 for the Wallisville saltwater barrier's completion. Trinity River Authority strongly supports an appropriation in this amount and requests this committee's continuing support.

Upper Trinity River Basin

Flooding and flood control have re-emerged as major issues in the Dallas/Fort Worth metropolitan area. TRA, along with nine cities, three counties and one other special purpose district, have been participating in a feasibility study related to flooding along the Elm and West Forks of the Trinity River for the last several years. The Corps of Engineers has expressed the capability to beneficially spend an additional $1.2 million for fiscal year 1998 on three specific projects for which sponsors and the local share of funding exist. TRA supports this appropriation.

Dallas Floodway Extension

This federal project would extend the levees that protect Dallas southward to protect a section of the metropolitan area that has been historically challenged from an economic standpoint. The Corps of Engineers has expressed a spending capability of $940,000 to begin preconstruction and design. TRA supports this appropriation.

Trinity River and Tributaries

Navigation to the Port of Liberty on the lower Trinity River is run of the river. Maintenance dredging to keep this otherwise natural channel open for shallow draft navigation is necessary. There was no mention of funding for this purpose included in the budget. Experience with maintenance dredging along this portion of the river indicates that at least $1,000,000 could be beneficially spent for this purpose. TRA respectfully requests that an appropriation of at least $1,000,000 be added for this purpose.

Operations and Maintenance Funds

TRA supports appropriations for fiscal year 1998 operations and maintenance funds necessary to maintain operations for federal water projects within the Trinity River Basin. These projects include Bardwell Lake, Navarro Mills Lake, Joe Pool Lake, Wallisville Saltwater Project, and the Trinity River and tributaries maintenance dredging in Chambers and Liberty Counties.

Conclusion

The Trinity River Authority thanks this committee for the opportunity to testify. We also thank Congress for the many improvements that the Federal Government has funded in the Trinity River Basin over the years. They have produced great benefits for the public and represent a very sound investment of federal funds.

PREPARED STATEMENT OF ERNIE ZIESCHANG, PRESIDENT, PORT OF LIBERTY COMMISSION

Mr. Chairman and Members of the Committee: My name is Ernie Zieschang and I am testifying today as President of the Port of Liberty Commission.

The Port of Liberty is extremely important to the economic well being of our community and the lower Trinity River Valley. The lower Trinity River, when adequately maintained with revenues appropriated by this Committee, could be considered the economic lifeline of our primarily rural slice of southeast Texas.

It greatly concerns us that no line item appropriation has been included in this year's budget for maintenance dredging under the caption of Trinity River and Tributaries. It is our firm belief, based on considerable past experience with maintenance dredging of our run of the river channel to the Port of Liberty, that $1,000,000 would be an appropriate amount for this Committee to dedicate toward

this purpose. We sincerely request that you add this amount to your final appropriation for fiscal year 1998.

We also request that you appropriate $15,000,000 for the completion of the long delayed Wallisville Saltwater Barrier. The Wallisville project will interface with and enhance navigation to the Port of Liberty. It will also greatly enhance the water supply capabilities of the lower Trinity River Basin. Please do everything in your power to keep this most important project moving forward.

Thank you for your attention to our requests for fiscal year 1998 and for your past contributions to our port and economic well being.

PREPARED STATEMENT OF THE CITY OF HOUSTON, TX

Mr. Chairman and Members of the Committee: My name is Frederick A. Perrenot, and I serve as General Manager of the Houston Public Utilities. On behalf of the City of Houston, I ask for this Committee's continued support for the Wallisville Saltwater Barrier Project. This project is of critical importance to the City's overall water supply plan for the Greater Houston Area.

By developing three major reservoirs, a raw surface water conveyance/distribution system, and a water treatment/distribution system, the City of Houston has become the regional supplier of fresh water for the four million residents of the Houston-Galveston area. At a cost of about $1.8 billion, the development of all of these facilities has been very expensive for the City's ratepayers and outside customers. However, it has been necessary in order to maintain a continuing, economical supply of drinking water, to prevent saltwater intrusion into the Trinity River, and to eliminate the devastating problem of land subsidence which has reached levels of more than 10 feet in some areas of the City.

The Wallisville project is an essential part of this reservoir supply system. It was planned and developed to allow the full utilization of drinking water stored in Lake Livingston by eliminating the need for releases from that reservoir to prevent saltwater from intruding up the river and contaminating water supply intakes. The City first entered into a contract with the Corps of Engineers (Corps) to build the barrier in 1967. Construction has been started, halted to resolve environmental issues, and after resolution of those issues, was resumed in 1991 with funds appropriated by Congress. The Corps awarded the final construction contract for the saltwater barrier on December 22, 1995. The City is committed to fulfilling its obligations under the terms of the contract and supports the Corps expressed capability of $14.5 million for fiscal year 1998. An appropriation in that amount will complete the total funding needs of the project. A smaller appropriation of $9.2 million would be sufficient to make the saltwater barrier operable.

As responsible managers, the City is also proceeding with major studies to evaluate and enhance programs in the areas of water conservation, reservoir system operation, waste water reuse, and other methods to effectively and efficiently manage existing water supplies. However, even with these programs, it is projected that water demands will exceed the existing available water supplies by the year 2010. With an operational Wallisville Saltwater Barrier, the additional drinking water supplies in the Lake Livingston reservoir will be available to serve the area and will meet expected demand until about 2035.

The City would like to thank this Committee for its long-term support for this essential project and to assure you that it remains a high priority in our continuing efforts to meet our responsibilities as the regional surface water supplier.

PREPARED STATEMENT OF DOUGLASS W. SVENDSON, JR., EXECUTIVE DIRECTOR, GULF INTRACOASTAL CANAL ASSOCIATION

This testimony for the record is submitted by Douglass W. Svendson, Jr., Executive Director of the Gulf Intracoastal Canal Association. Ours is the oldest of the regional waterway associations, having been established in Victoria, Texas in 1905. The Gulf Intracoastal Waterway transports 120 million tons of freight annually, the third highest volume among our inland and coastal waterways after the Mississippi and Ohio Rivers.

GICA's membership includes both shallow draft and deep draft ports, port commissions and navigation districts, barge and towing companies, petroleum refineries, chemical manufacturers, shipyards, marine fabricators, fuel terminal facilities, and individuals whose businesses are waterway related and dependent. We have 200 members in the five states of Texas, Louisiana, Mississippi, Alabama, and Florida served by the Gulf Intracoastal Waterway. In addition, the GIWW is the link that binds the North-South rivers to the canal, the coastal ports, and ultimately the

heartland of America. The Mississippi River intersects the GIWW at New Orleans, one of our busiest ports, and the Tenn-Tom intersects the GIWW at Mobile.

I would first like to address the general direction and policy choices in the 1998 Civil Works Budget.

In the February 6, 1997 press announcement accompanying the 1998 budget, Assistant Secretary of the Army for Civil Works, Mr. H. Martin Lancaster stated the Corps would be able to meet all of its maintenance, construction, flood control, environmental and other responsibilities under that proposed budget. I have great respect for the U.S. Army Corps of Engineers and I have no doubt about their good and honest intentions.

However, when I see the magnitude of outlay reductions in operations and maintenance and flood control, and see how large an amount has been added to construction general for the coming years, I have serious doubts that it can all be accomplished. Proposed maintenance spending on many of the waterways in the Gulf South region of the U.S., including the Gulf Intracoastal Waterway, has been reduced so sharply that physical and environmental safety margins will be severely narrowed, and overall efficiency of a major commodity transportation mode will be impaired. Anticipated further reductions beyond 1998 will compound these operations problems. Please refer to the page of my testimony on the subject of operations and maintenance's importance to the GIWW.

What I am referring to as large additions to the construction general account is the "crowding out" effect on many of the Corps' other responsibilities by fully funding, up front, a very large portion of a declining budget. When advance appropriations become effective for fiscal year 1999 to 2002, these built-in increases for construction general only mean less of what remains is allocable to other Corps responsibilities, including operations and maintenance.

The United States is not the low cost producer for many of the basic commodities in energy, agriculture, chemicals, and chemical feedstocks. The inland and coastal barge and towing industry is however, the low cost transportation and distribution system. This system, in which America is preeminent, is the mechanism for distributing our agricultural, energy, and chemical output into the world trading economy. The result is income to our farmers, inexpensive food, energy, and electricity for our citizens, a wide variety of products made from plastics, a favorable balance of trade in most of these areas, and huge revenues to local, state and Federal governments. Almost all of these commodities are sold on world markets. Our low cost transportation system provides the U.S. with a competitive advantage. We will lose that advantage if our inland waterway system is not properly maintained.

There are severe navigation and flooding problems on the Mississippi River, in and around New Orleans, and the Lower Atchafalaya River, which we recommend your committee address. Many of these navigation problems are worsened by natural disasters, such as Tropical Storm Josephine last fall from October 4 to October 8, 1996, and the floodwaters now pouring through Louisiana.

The U.S. Army Corps of Engineers, New Orleans District, consumed a substantial part of its maintenance budget dredging the Mississippi River Gulf Outlet after the hurricane, and is now confronted with extensive dredging responsibilities in the Mississippi River as a result of flood waters and sediment. Funds have actually been "borrowed" from Gulf Intracoastal Waterway maintenance to meet the river emergency.

These problems also are directly related to replacement/continued maintenance of the Industrial Lock in New Orleans. Significant amounts of shallow draft traffic move south on the Mississippi to New Orleans where it enters the Gulf Intracoastal Waterway east, through the Industrial Lock. This traffic requires a properly maintained Mississippi River, a properly maintained Industrial Lock, and a properly maintained alternate route below New Orleans through Baptiste Collette.

The GIWW east serves electric utilities, petroleum refineries and industrial chemicals in the Gulf South region, all crucial to this area's economy. In addition, the GIWW East is vital to our agricultural and wood industries. Of particular importance are chemical fertilizers, logs and chips. Due to a lack of funds in the New Orleans District, dewatering of Industrial Lock cannot occur. Due to intense neighborhood opposition, replacing the aged facility appears remote. The Coast Guard has agreed to mark the Baptiste Collette Channel, but funds have not been provided in the President's 1998 budget to maintain it. The bottleneck in the flood plagued Mississippi River due to less than adequate funding, and at the Industrial Lock, as well as Baptiste Collette, threatens over 25 million tons of traffic annually in the GIWW. We urge the Committee to make adequate funding available to the New Orleans District for these pressing needs, both in the Supplemental Appropriations Bill and regular 1998 Appropriations Act.

It is not fair to the wide range of users who depend on this lock, waterway, river system and alternate route to have access denied, or threatened, because of inadequate funding. The Corps budget and press kit released February 6, 1997, shows $154 billion in annual U.S. Treasury receipts from import and export trade through our ports. This figure dwarfs the 1998 Civil Works program budget of $3.7 billion. Funds shortages during both critical and non critical times should not exist in circumstances where Federal tax receipts are so large in relation to Federal outlays.

THE PRESIDENT'S BUDGET REQUEST FOR FISCAL YEAR 1998

GICA continues to support funding at the Corps' full capability for the project to enlarge the Victoria, Texas Channel to make its dimensions compatible with those on the Gulf Intracoastal Waterway.

We also support funding at the Corps' full capability for what should be the final year of construction at the beach erosion control project at Sargent, Texas. We sincerely express our appreciation to this committee for its prior years funding of the Sargent Beach project, designed and constructed to prevent the Gulf of Mexico from breaching the Gulf Intracoastal Waterway.

We support funding at the level of the President's budget request for the Section 216 studies being conducted in increments along the Texas coast.

A concern for navigation in the Galveston District is that while operations and maintenance funding may appear to be sufficient this far in advance of fiscal year 1998, implementation of studies, Interagency Coordination team activities, and Dredged Material Management Plans must all be paid from the operations and maintenance account. These financial commitments necessarily take away from actual field operations and dredging.

In addition, dredging requirements of about $2 million annually have been delayed in the Lower Laguna Madre since litigation over disposal practices began in 1994. Likewise, maintenance dredging in the channel to Victoria has been delayed because construction contracts were delayed. These maintenance obligations are going to return, probably in fiscal year 1998, and the District will be short in that area unless more level funding is provided for operations and maintenance.

Taken together, the ICT studies, DMMP plans and maintenance dredging requirements in Laguna Madre and the channel to Victoria are going to impose added financial burdens on the Galveston District. To avoid shortages in the GIWW O&M account in fiscal year 1998, it should be funded at the level of $20 to $21 million annually.

GICA continues to support funding for the Industrial Canal Lock, New Orleans, Louisiana. See testimony, Page two.

GICA continues to support appropriations for the Louisiana Lock Study, which includes all of the locks on the GIWW in Louisiana west of the Mississippi River. The study is evaluating which improvements will maximize efficiency of the GIWW and its connections with the Mississippi River while minimizing costs.

THE IMPORTANCE OF ADEQUATE OPERATIONS AND MAINTENANCE FUNDING FOR THE GULF INTRACOASTAL WATERWAY

The Gulf Intracoastal Waterway travels the coast line of Texas, Louisiana, Mississippi, Alabama, and Florida, connecting those state's deep and shallow draft Gulf Coast ports to each other, and mid-America through the Mississippi River the Tennessee-Tombigbee, The Red River Waterway, the Warrior Tombigbee, the Applachicola-Chattahoochee-Flint Waterway, and other north/south tributaries. The GIWW transports 120 million tons of cargo annually through these five states' coastal zone. The protection of this nationally valuable environment requires the constant efforts of carriers, shippers, State and Federal governments. Proper maintenance dredging and sufficient O&M funding for the GIWW lock system is essential to preserve the efficiency and environmental superiority of the Gulf Intracoastal Waterway.

Many of the locks on the GIWW operate to equalize water depths associated with Corps of Engineers flood control responsibilities. Some operate to relieve excess water in agricultural basins, which also relieves flooding of valuable farm land. At other times of the year the locks are operated to prevent salt water intrusion. Therefore, proper maintenance of these assets is vital for flood control, navigation, and agriculture.

The navigation industry along the Gulf Coast, including carriers, shippers, and ports, has a crucial stake in safe efficient operations. Industry works with the Coast Guard and the Corps of Engineers through Government/industry safety advisory groups to achieve these goals. Industry also works closely with shippers through the

responsible carrier program to maximize physical and environmental navigation safety.

As rail and motor transportation have evolved in the last 15 years to "on time" and "just in time" delivery systems, shallow draft barge transportation, through agreements with its shippers, has evolved to play the same role. This system reduces costs for shippers and manufacturers, provides a cost advantage for United States producers of chemicals, for example, and results in thousands of jobs for American citizens.

The Texas chemical industry has calculated that from 1981–1991, when our nation had roughly a $1 trillion foreign trade deficit, it nevertheless showed a $126 billion foreign trade surplus in chemicals. Because chemicals and other commodity groups in agriculture and energy, are traded on world markets, the United States' highly efficient transportation and distribution system gives our producers a cost advantage in those world markets. Insufficient operations and maintenance funding will undermine this highly efficient transportation system faster than any other factor.

PREPARED STATEMENT OF GEORGE A. WILLCOX, GENERAL MANAGER, CHAMBERS-LIBERTY COUNTIES NAVIGATION DISTRICT

Mr. Chairman and Members of the Committee: Thank you for the opportunity to express the importance of the Wallisville saltwater barrier to the Chambers-Liberty Counties Navigation District. The Navigation District, along with the City of Houston and the Trinity River Authority, acts as a local sponsor for the project which is located in Chambers County, Texas.

The purpose of the project is to prevent saltwater intrusion from the Trinity and Galveston Bay Complex into the freshwater supply from the Trinity River. It is vital to the protection of the freshwater supplies of the City of Houston as well as several rural canal systems including C.L.C.N.D. The C.L.C.N.D. system supplies water for agricultural irrigation, to the Anahuac National Wildlife Refuge for wildlife enhancement and to the City of Anahuac and the Trinity Bay Conservation District for treatment for municipal use.

The barrier is located on the Trinity River near the Trinity-Galveston Bay Complex. It is down stream of Lake Livingston, which is a joint project of the City of Houston and the Trinity River Authority. Currently, during periods of low flow in the river, releases of freshwater must be made from Lake Livingston in order to maintain freshwater for the intake of the C.L.C.N.D. canal system. This intake is located upstream of the barrier and it will be protected upon completion of the barrier project. During last year's drought, releases of 1500 cubic feet per second were required from Lake Livingston in order to maintain freshwater at the C.L.C.N.D. intake point. This equates to approximately 970 million gallons per day during that period or an annualized rate of some 260 million gallons per day. Completion of the barrier will eliminate the necessity of these kinds of releases.

Although the project has been long and controversial, the major issues of concern from the environmental community have been addressed. The downsized project is no longer a storage reservoir, however, its importance for the protection of saltwater intrusion has not diminished. In addition, it will be providing recreational and tourism facilities that will he utilized by local families as well as state, national and foreign visitors.

Construction on this project is proceeding ahead of schedule and adequate funding is now essential for completion. We will greatly appreciate your consideration in appropriating the funds as requested by the Galveston District Corps of Engineers and thank the Committee for its past support of the project.

PREPARED STATEMENT OF GARY SKAGGS, CHAIRMAN, TRINITY RIVER STEERING COMMITTEE, NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

I am Gary Skaggs, Chairman of the Trinity River Steering Committee at the North Central Texas Council of Governments (NCTCOG). On behalf of the 9 cities, 3 counties, and 2 special districts participating in the Upper Trinity River Feasibility Study, I thank you for the opportunity to address the Committee during your deliberations on the fiscal year 1998 federal appropriations. We appreciate the long-term federal commitment demonstrated in the U.S. Army Corps of Engineers' (USACE) Feasibility Study appropriations since 1990.

The Trinity River is the common thread connecting over 4 million residents of one of the nation's largest inland metropolitan areas and it remains the single most important resource to the North Central Texas area. Since the initiation of the Fea-

sibility Study in 1990, our cooperative efforts have produced many important products and implemented significant flood plain management policies resulting in improved flood plain management practices. The Feasibility Study is an important component of NCTCOG's COMMON VISION program. The COMMON VISION Program's objective for the Trinity River Corridor is to achieve a Safe, Clean, Natural, Enjoyable and Diverse river corridor. These objectives are consistent with the Feasibility Study's goal of addressing flood damage reduction, water quality, environmental enhancement and recreation. Over the last six and a half years, detailed flood plain mapping, new computer flood damage assessment models, the Corridor Development Certificate (CDC) Process, new Trinity River flood plain regulatory information and the preliminary analysis of diverse alternative measures have been developed and produced.

The Feasibility Study is an outstanding example of an intergovernmental partnership that has generated positive results. The participating local governments have demonstrated their support by contributing to the success of the Feasibility Study with financial commitments and cooperative effort. We remain committed to generating a positive return on those investments of time and money. Accordingly, as the local government's representative, I am pleased to report that the local government officials are eager to continue the progress made during the second phase of the Feasibility Study. This progress will result in implementable projects. I would like to highlight the achievements of Phase II of the Study for you and outline the remaining efforts to be undertaken in this important regional program.

The Upper Trinity River Feasibility Study has projected that a model storm would cause over 22,000 homes and over 141 million square feet of commercial/industrial property to be flooded, with untold loss of life—a graphic picture of the potential catastrophic losses to flooding in the Dallas-Fort Worth Metroplex. The detailed flood analyses for the Standard Project Flood (SPF) have validated previous predictions of flooding severity in the Upper Trinity River Basin.

The Feasibility Study continues to utilize sophisticated computer modeling tools based highly accurate and detailed topographical and topological mapping that provides unique capabilities for analyzing the flood plain. In addition, our cooperative effort has resulted in the implementation of a uniform set of flood plain development criteria by the local governments along the Trinity River in the Metroplex. This uniform criteria, known as the Corridor Development Certificate (CDC) Process, is designed to stabilize the existing level of flood risk of the Trinity River through innovative techniques and technical criteria. The most unique feature of the CDC Process is a peer pressure system of regional review and comment. The CDC Process was originally implemented in 1993. We are currently re-evaluating the CDC Process and developing the 2nd Edition of the CDC Manual.

This funding request includes three projects currently being supported with local funds. The funding requested for fiscal year 1998 will be used to support the locally sponsored projects underway in the cities of Arlington, Dallas and Fort Worth. The support for the Feasibility Study demonstrated by the participants through their continued funding support for the program clearly recognizes the Trinity River's value to the communities of the region. The Project Study Plans for the projects in Arlington, Dallas and Fort Worth emerged from the major cooperative and technical efforts of the Feasibility Study. The Feasibility Study continues to "break new ground" in Multiple Objective Management through development of these innovative projects which live up to the 1989 Congressional authorization to investigate "flood damage reduction, water quality, environmental enhancement, recreation and other allied purposes."

Arlington Johnson Creek

In March, the Arlington City Council formally approved the Johnson Creek Watershed Concept Plan recommendations of the Johnson Creek Citizens Committee. The multiple objective plan has an initial cost estimate of $130 million and includes transportation improvements, flood damage reduction measures, environmental restoration and preservation, recreation amenities and a variety of economic development proposals. The City is hopeful that the Feasibility Study project investigation will be able to minimize local costs of implementing the many elements of the Johnson Creek plan, the locally preferred plan.

At the outset of this project investigation, the City of Arlington asked the USACE to evaluate the feasibility of relocating flood-prone homes that had been identified by the City. The USACE assessment determined that the relocation of up to 64 residential structures could be justified under a federal flood plain relocation plan, with an initial cost estimate of $8.625 million. The flood plain evacuation plan is anticipated to be a major component of the total federal project plan developed for Johnson Creek. A letter from the Assistant Secretary of the Army for Civil Works re-

cently approved the financial credit of this buyout plan, thus clearing the way for the City to start purchasing homes for removal from the flood plain. The resulting federal project will be heavily influenced by the adopted Concept Plan for Johnson Creek. These steps represent positive actions toward improving safety and quality of life along the 11 miles of the historic Arlington stream.

Dallas Floodway and Stemmons North Industrial Corridor

The Dallas Floodway Project Study Plan will investigate the modification of the existing Trinity River floodway. The project plan may include river channel improvements, pier protection of existing bridges, and levee modifications to improve the level of flood protection for the City of Dallas. In the Stemmons North Industrial Corridor, two levee alignments along the existing Luna Road and Burlington Northern Railroad will be investigated to identify the optimum levee alignment. Each levee alignment will be analyzed in conjunction with a downstream levee in the Daniels Creek and Bachman Lake area.

The Dallas project plans would also include numerous recreational and environmental amenities such as: a series of on-channel and off-channel lakes; hike/bike trails within the floodway or on the levees; vehicular access to the floodway (including roads and parking); canoe launches; pedestrian bridges; recreation facilities for picnicking, sports fields and open-space areas; and vegetation and supporting structural amenities. Potential connections to existing business areas, park lands and recreational facilities within or near the study area will also be considered. These features would be consistent with the City Council adopted recommendations found in the Trinity River Corridor Citizen's Committee Plan, as well as recommendations from the Dallas Plan.

In conjunction with the Dallas Floodway Project Study Plan, several other important and extensive Trinity River Corridor coordination efforts are underway at this time. Extensive coordination with the Texas Department of Transportation will facilitate the significant thoroughfare improvements being proposed along the Trinity River and Dallas Floodway as part of the Trinity Parkway Major Transportation Investment Study. The Corps is also in the final stages of negotiating the project parameters for a federal project in the area downstream of the Dallas Floodway, commonly known as the Floodway Extension Project. In March, the City of Dallas approved the final component of the Floodway Extension Plan, which is comprised of a $127 million levee, chain of wetlands and various recreational amenities. Additionally, the City approved a Great Trinity Forest Park Master Plan which is located in the Floodway Extension project area. The ultimate combination of all of these projects and plans will not only address many serious flood-related problems but also provides the citizens of Dallas with an enormous opportunity for creating an extremely valuable community asset along the Trinity River.

Fort Worth Sump Projects

The Fort Worth Floodway Sumps 14W and 15W Measures include improved sump storage and pumping capabilities. This project incorporates environmental restoration, water quality protection and recreational features, consistent with the Multiple Objective Management (MOM) nature of the Feasibility Study. The City of Fort Worth and the Tarrant Regional Water District are the co-sponsors for the study of Sumps 14W and 15W, which was initiated in June 1996.

The Phase I assessment of the interior drainage of the Fort Worth Floodway for existing conditions has been performed on Sumps 14W and 15W. Currently the project sponsors are evaluating the proposed project alternatives before committing to complete the remaining two phases of the project study. A decision is expected to be reached during April 1997. Additionally, the co-sponsors are considering the study of a similar project for Sump 12W along the Fort Worth Floodway.

In addition to the 3 projects just discussed, the Study's Executive Committee has already approved four Regional Implementation/Work Plans identified as having a local and federal interest. Work is now underway on these plans, including:

Trinity Trails System.—This system would encompass all of the major arms of the Trinity River in the Study area—the Elm Fork, Mainstem, and West Fork. The focus of the planning effort is to produce coordinated greenway improvements along the Corridor that provide recreational and open space amenities while protecting the natural values and functions of the flood plain.

Regulatory Flood Modeling and Mapping Work Plan.—This work plan has the goal of a coordinated modeling and mapping product that could be used by all the flood plain-related agencies. Local governments, the USACE and the Federal Emergency Agency (FEMA) will all benefit from this coordinated modeling. The USACE is rapidly nearing completion of the revised flood insurance study for the Trinity River for the Dallas-Fort Worth Metroplex. New flood plain models and flood insur-

ance rate maps will be submitted to FEMA in April 1997. This work will result in better, more consistent flood plain decisions and a streamlined development permitting process.

CDC Process Implementation Plan.—The CDC process was implemented by the local participants to stabilize existing flood risks in the Trinity River Corridor. The intergovernmental review and information tracking elements of the process help local government staff make the best flood plain management decisions possible. The CDC Process implementation plan will establish a methodology for keeping the criteria and process up-to-date into the future. A revised CDC Manual is being produced this year. The USACE and the local governments will implement a permit fee system to maintain the flood plain tools that have been developed through the Feasibility Study.

Regional Flood Warning and Emergency Response Work Plan.—This work plan involves enhancing and coordinating existing local flood warning systems throughout the Trinity River Corridor. Focusing attention on the operation of these systems will provide better information to all of the participating governments and provide improved emergency response, not only along the Trinity, but also along all the major tributaries in the Upper Trinity River Basin.

Summary

In each of these efforts, the goal is to provide a desirable plan for implementation which has Federal and non-Federal support and which will provide benefits at a reasonable cost. The steps remaining to achieve this goal are the technical analysis of alternatives; provision of economic, real estate, environmental, and engineering services; and final determination of the recommended plan(s). The division of the study into these three phases is rooted in the desire to produce a feasible solution as quickly as possible.

Given the positive results generated by this important regional effort thus far, the Trinity River Corridor Steering Committee encourages the continuation of federal funds for the concluding pieces of the Feasibility Study. Significant local, state and federal governmental investment has been made in this study, which should be continued through the project implementation phase. We urge Congress to continue to fund cost-shared projects for implementation within major urban areas. Specifically, we request your support of the Corps of Engineers' $1.2 million appropriations for fiscal year 1998 to continue the Upper Trinity River Feasibility Study. Additionally, we ask for your support for the Corps' fiscal year 1998 funding requests of $940,000 and $70,000 for the Dallas Floodway Extension and Fort Worth Sumps 14W and 15 W projects, respectively, as we pursue the important watershed and floodway projects in Arlington, Dallas and Fort Worth, as well as the other multi-purpose projects in the Dallas-Fort Worth area.

For more information on the status of the Feasibility Study Projects, please contact Chris Brooks with NCTCOG at (817)695–9212. Thank you very much for giving me the opportunity to address you today and for your continued support of this important multiple objective management program.

PREPARED STATEMENT OF H. THOMAS KORNEGAY, EXECUTIVE DIRECTOR, PORT OF HOUSTON AUTHORITY

On behalf of the Port of Houston Authority (PHA) and the 196,000 Americans whose jobs depend upon activity at the Port of Houston, we extend gratitude to Chairman Domenici, and members of the subcommittee for the opportunity to submit testimony in support of several important navigation projects included in the U.S. Army Corps of Engineers Civil Works budget for fiscal year 1998.

For many years, the Port of Houston Authority has provided testimony to this subcommittee expressing appreciation for providing the funds necessary for the Houston Ship Channel (HSC) to remain fully functional by maintaining proper dredge depths and dewatering of dredge disposal sites; and, in recent years, by completion of required studies prior to authorization of the improvement project to deepen and widen the Houston Ship Channel. Each year, this subcommittee has listened carefully to the story of this vital waterway and has responded with the necessary support. We are deeply grateful for this support and are particularly excited about the partnership of this subcommittee, the Corps of Engineers and the Port Authority in marching forward with an insightful view of the future of one of our Nation's most vital waterways by this year finally beginning construction on the long-awaited, critically needed improvement project.

We express full support of the fiscal year 1998 Corps of Engineers' budget request in the following amounts:

Houston-Galveston Navigation Channels (Construction)	$15,000,000
Houston Ship Channel (O&M)	7,617,000
Bayport Channel (O&M)	1,170,000
Barbours Cut Channel (O&M)	845,000

Each of these funding requests is important to ensure the continuous flow of commerce through this very busy waterway.

The Port of Houston—One of the Nation's busiest ports

Port of Houston commerce generates over $5.5 billion annually to the Nation's economy and an estimated 53,000 people work in jobs that are directly related to Port of Houston activity and another 143,000 jobs are indirectly related to the port's activity. Moreover, the port generates nearly $300 million in customs fees and over $200 million annually in state and local taxes.

It is no exaggeration to say that the Houston Ship Channel is one of the most important economic lifelines between our Nation and the world. Houston's favorable geographic location provides easy access to the entire world business community through key ocean, land, and air routes. More than 150 shipping lines connect Houston with more than 250 world ports. Four major railroads provide cargo distribution throughout the United States with the intermodal link of more than 160 trucking lines. The Port of Houston forms the core of the Houston international community which includes more than 350 U.S. companies with global operations and Houston offices for more than 45 of the world's largest non-U.S. companies. In addition, Houston is the home of one of the largest consular corps in the Nation, with over 66 foreign governments represented. Also, more than 20 countries operate trade office here. These factors have made the Port of Houston a preferred gathering and distribution point for shippers transporting goods to and from the Midwestern and Western United States.

THE PORT OF HOUSTON—PROTECTING OUR NATION

During the Desert Shield/Desert Storm operation, the U.S. government deployed 106 vessels carrying 458,342 tons of government cargo and military supplies from the Fentress Bracewell Barbours Cut Terminal at the Port of Houston. In fact, between August of 1990 and October 1991 the Port of Houston was the second busiest port in the Nation in support of our troops. We are proud that the strategic location of the Port of Houston allows us to play such an important role in the defense of our Nation and the world.

MODERNIZATION & THE ENVIRONMENT—SUCCESSFUL PARTNERSHIP

The Houston Ship Channel, which opened in 1914, is believed to be the result of the first-ever federal/local cost-sharing agreement. At that time, the channel was 18½ feet deep. It was subsequently deepened to its current depth of 40 feet with a width of 400 feet. This last improvement was completed in 1996. While Houston is one of our Nation's busiest ports, it is also one of the narrowest deep draft channels. As you can imagine, ships and shipping patterns have dramatically changed to meet the demands of world trade over the last 30 years. Yet, this busy waterway has not been widened or deepened to accommodate these changes. As the local sponsor for the Houston Ship Channel, the Port Authority began its quest to improve the channel in 1967. For reasons of safety, environment, and economics, the Houston Ship Channel is long over-due to be improved. The Port of Houston, and its partner in maintaining this federal waterway—the Corps of Engineers—are leading the way to a unique approach to addressing the environmental interests in the improvement of the Houston Ship Channel. In the late 1980's , the Port Authority and the Corps of Engineers joined with federal and state agencies to form an Interagency Coordination Team (ICT) in a cooperative effort to address environmental concerns with the project—a process advocated by environmental groups and various resource agencies. The ICT included: the U.S. Army Corps of Engineers (USACE), the U.S. Fish and Wildlife Service (USFWS), the U.S. Natural Resources Conservation Service (USNRC), the U.S. Environmental Protection Agency (EPA), the Texas General Land Office (GLO), Texas Parks and Wildlife (TPWD), the Texas Natural Resources Conservation Commission (TNRCC), the Texas Water Development Board (TWDB), the Galveston Bay National Estuary Program (GBNEP), National Marine Fisheries Service (NMFS), the Port of Galveston, and the Port of Houston Authority. Several committees were established by the ICT. One of the most important committees established was the Beneficial Uses Group (BUG). The BUG, chaired by the Port, was charged with developing a disposal plan to utilize dredged material in an environmentally sound and economically acceptable manner that also incorporated other public benefits into its design. Most important was the

Port Authority's committed objective that the final plan would have a net positive environmental effect over the life of the project.

We are pleased to report that the ICT unanimously approved the beneficial use plan for disposal of dredged material from the HSC project as one that will have a net positive environmental effect on Galveston Bay, while significantly increasing the net economic benefits to the region and our Nation. Three basic principles guided the BUG in their efforts: dredged material should be considered a potentially valuable resource; development of an environmentally acceptable disposal plan is intrinsic to the approval of the project; and, the adopted disposal plan must have long term environmental benefits for the Galveston Bay system. The approach utilized by the BUG for Galveston Bay made this effort unique and precedent setting. What was attempted had never been done before. The BUG developed a preferred disposal plan rather than reviewing a proposal in a regulatory setting. The BUG also addressed one of the largest navigation projects in recent years (approximately 62 Million Cubic Yards (MCY) of new work material and an estimated 200 MCY of maintenance material over the next 50 years. Most importantly, the BUG actively solicited beneficial use suggestions from environmental interests and bay user groups whose collective ideas were given full consideration during the development of the recommended plan. In fact, the community identified more beneficial uses than the material available from the project plus 50 years of maintenance dredging. The result was the identification of beneficial uses for the material to be dredged from the improvement project. The final plan includes the creation of 4,250 acres of marsh—a bird island, boater destination, restorations of two islands lost over the years due to erosion and subsidence. In addition, an underwater berm will be constructed to provide storm—surge protection and habitat.

PORT OF HOUSTON-LOOKING TOWARD THE FUTURE

The voters of Harris County in 1989 committed significant local funding to support these improvements. By a 2 to 1 vote, citizens approved a measure that will provide the local funding ($130,000,000) to deepen the channel to 45 feet and widen it to 530 feet. The Corps of Engineers and resource agencies involved in the ICT and BUG process have worked diligently to address all concerns and to develop a truly unique approach. The Port Authority heartily commends the cooperation and hard work of the Corps of Engineers and the state and federal agencies who have participated in the process that has this project being applauded across the maritime and environmental communities. This project is the first in history to have netted no negative comments, during the public review phase of the Supplemental Impact Statement (SEIS).

HOUSTON-GALVESTON NAVIGATION CHANNELS (CONSTRUCTION)

Each year, since 1989, the Port Authority has come before this committee to request the appropriate funds for the studies (pre-construction, engineering and design) necessary to ready this project for construction. Each year, this subcommittee has responded with full-funding these requests. From fiscal year 1990 through fiscal year 1997, Congress has appropriated nearly $20,000,000 toward this goal. The Port Authority has contributed thus far over $1,020,000 to support this effort. This year, we are ready to begin the construction phase of this 30-year dream. The Corps of Engineers' budget request for this project for fiscal year 1998 included $119,100,000 for phase one of a new full-funding budget authority approach to new projects. The Port Authority understands that the Subcommittee will decide whether to provide full budget authority for new starts. We would only request that, if the Subcommittee in its wisdom concurs in this policy change, the Houston Ship Channel be treated no differently than other new starts. If the full-funding of budget authority becomes the model, then we would respectfully submit that $119,100,000 does not reflect full-funding of this project and would then request that the Houston Ship Channel project be granted the full-funded budget authority of the nearly $240,000,000 of the federal share authorized in WRDA'96. As we indicated earlier in this testimony, we did not ask for, nor do we expect this approach to become reality. We are fully prepared, as we have in years passed, to come before this subcommittee each year to request the funds necessary to build this project on an optimum schedule.

The budget outlay request of $15 million for fiscal year 1998 is compatible with both a five year and a seven year construction schedule. It does not, however, accommodate the most economical and realistic schedule. Based on our cooperative and productive discussions with the Corps of Engineers, we are convinced that the optimal time line for completing the navigation portion of this project is four years. A four year schedule will accelerate the benefits of the project and reduce its costs.

Each one year reduction in construction time adds more than $81 million in benefits, reduces escalation costs by $4.6 million and drives down investment costs by more than $17 million. To achieve these added benefits and reduced costs, we would need an additional $8.9 million in outlays for fiscal year 1998. We fully appreciate the stringent budgetary restrictions within which the Subcommittee must operate. Nevertheless, the significant savings of the four year schedule actually make it possible for the Subcommittee to deliver earlier benefits from this project, while simultaneously conserving funds for other worthy projects. Not the least of the accelerated benefits of a four year schedule are the improvements to the environment that are included in the project. For the second year, the PHA's Demonstration Marsh was included in the Audubon Society's Christmas Bird Count. This year, the Houston count totaled 155 species with 59 species found at or near the marsh. The Port Authority has a responsibility to the citizens of Harris County to operate the port in a cost-effective and efficient manner. We could not be fiscally responsible if we did not strive to realize the benefits of the project as soon as humanly feasible and a most-efficient cost to the partners involved. We would appreciate this subcommittee's careful consideration of the four-year schedule of funding requests.

HOUSTON SHIP CHANNEL-OPERATIONS & MAINTENANCE

The Corps' fiscal year 1998 requests for operations and maintenance funding includes $7,617,000 for maintenance dredging of key stretches of the channel. These include: dredging of 2,500,000 cubic yards of material from Red Fish Reef to Morgan's Point including raising levees at placement areas 14,15 and 16 to channel dimensions of 40 feet by 400 feet; the removal of 160,000 cubic yards of material in the Atkinson Island barge channel; and, dredging the HSC reach from Sims Bayou to the Turning Basin. In addition, this work order includes dredging of the light draft channel at the neck of the Turning Basin. Safety and environmental concerns confirm the critical necessity of these projects.

DREDGING OF BAYPORT CHANNEL

The Port of Houston Authority, the Bayport users and the Houston Pilots recognize the need for continued maintenance of this narrow portion of the channel. The fiscal year 1998 budget includes $1,170,000 for dredging of the Bayport flare, removing 1,000,000 cubic yards of material to placement areas 14 and 16, maintaining proper depth.

DREDGING OF BARBOURS CUT CHANNEL

The Fentress Bracewell Barbours Cut Terminal is the premier container facility in the Gulf. In addition to being an extremely busy container terminal, it has been the facility utilized by the federal government in times of national defense crisis, and will soon become the home of the first cruise business to operate out of Houston. The fiscal year 1998 budget includes an important $845,000 for dredging of Barbours Cut, removing 600,000 cubic yards of material to Spillman Island disposal area to ensure proper channel depth of 40 feet.

CONCLUSION

We greatly appreciate your past support and urge you to include the funds requested to fully support these projects in this busy federal waterway. These maintenance projects, and particularly the funds necessary to construct the HSC improvement project at an optimal schedule, are vital, not only to the Port of Houston's continued ability to move the Nation's commerce in a safe, efficient, and economical manner, but also, to ensure the competitiveness of this waterway in the world marketplace—an absolute necessity in this global economy.

UPPER PLAINS WATER RESOURCE PROJECTS

PREPARED STATEMENT OF THE IOWA DEPARTMENT OF NATURAL RESOURCES, KANSAS DEPARTMENT OF WILDLIFE AND PARKS, MISSOURI DEPARTMENT OF CONSERVATION, AND NEBRASKA GAME AND PARKS COMMISSION

Regarding the Missouri River Bank Stabilization and Navigation, Fish and Wildlife Mitigation Project

—A request for $10 million is being made for fiscal year 1998 to the U.S. Army Corps of Engineers

—The Corps of Engineers included $3.9 million in its budget for fiscal year 1998, while $10.2 million of project work is ready for implementation

—Provides for construction of projects and acquisition of land to restore and enhance habitats in the states of Iowa, Kansas, Missouri, and Nebraska that were degraded as a result of the Missouri River Bank Stabilization and Navigation Project
—Provides more opportunities and improved quality of experience for people in the four states that hunt, fish, hike, and enjoy the outdoors through various other recreational pursuits
—Reduced funding will result in the retraction of land acquisition agreements that have been successfully negotiated and the delay of construction projects that have approved designs and specifications
—Current authorization levels mitigate for 2 percent of the aquatic and 7 percent of the terrestrial losses; less funding equates to even less compensation for losses
—Projects do not conflict with other uses of the Missouri River and do not have public opposition

BACKGROUND

Seven acts of Congress provided for the construction and maintenance of a navigation channel and bank stabilization works on the Missouri River. The most important of these Acts were passed in 1912, 1925, 1927, and 1945 (Public Laws 62–241, 68–585, 70–560, and 79–14) respectively. The Missouri River Bank Stabilization and Navigation Project was conceived and designed for its stated purposes in an era of little recognition of the values of fish and wildlife resources. As a result, the natural features of the Missouri River were devastated. The project shortened the lower Missouri River by 127 miles.

In response to the habitat degradation, Section 601(a) of the Water Resource Development Act of 1986 (Public Law 99–662) authorized the Missouri River Fish and Wildlife Mitigation Project within the states of Missouri, Kansas, Iowa, and Nebraska. This authorization was based upon a report of the Chief of Engineers, dated April 24, 1984, entitled Missouri River Fish and Wildlife Mitigation, Iowa, Nebraska, Kansas, and Missouri. The Chief's report was based on a May 1981 Feasibility Report and Environmental Impact Statement (EIS) by the Missouri River Division, U.S. Army Corps of Engineers (CEMRD) which: (1) described the historical fish and wildlife habitat losses and those likely to occur due to the Missouri River Bank Stabilization and Navigation Project, (2) described various measures to mitigate for these losses, and (3) recommended a plan to restore, preserve, or develop 48,100 acres of habitat. These acres represent only 2 percent of the aquatic habitat loss, and 7 percent of the terrestrial losses. The U.S. Fish and Wildlife Service and the states of Iowa, Nebraska, Kansas, and Missouri made up the Coordination Team that was developed (as outlined in the Fish and Wildlife Coordination Act of 1958) to formulate and decide acquisition and development sites with the Corps. It was established that 48,100 acres (18,200 acres on public lands and 29,900 acres on lands to be acquired) would be developed within the four states at ratios comparable to the habitat types lost. This level of mitigation has always been considered by the states to be a good start to what is ultimately needed. Continuing authority will eventually be required to achieve total mitigation.

What progress has been made?

To date 17,634 acres have been acquired, 59 percent of the 29,900 acres authorized. There have been 14,641 acres of aquatic and terrestrial habitat developed, which is 30 percent of the 48,100 acres authorized for development. Some restoration has been completed in all four states. This progress has primarily occurred in the last 3 years and it is vital to maintain this momentum.

What benefits are provided by this project?

Mitigation projects benefit fish, wildlife, and people. Big river fish species, waterfowl, other birds, mammals, reptiles and amphibians are all benefiting through additional improved habitat. The completed sites are revegetating and returning to pre-channelization conditions, thus attracting fish for spawning and rearing. People are realizing that this restored habitat is providing places not only to hunt and fish, but to hike, enjoy nature, bird watch, and enjoy the Missouri River. Mitigation projects are bringing back hunting and fishing opportunities that have been lost in areas that in the past provided bountiful harvests.

Channelization and induced floodplain developments have reduced the natural flood carrying capacity of the Missouri River causing additional flooding and it has increased the flood stages in the receiving Mississippi River. This has led, in turn, to increased pressure to construct more downstream levees and other single purpose flood control projects. By restoring portions of the floodplain through fish and wild-

life mitigation, we are providing storage areas for flood waters and reducing local flood damages.

Fish and wildlife mitigation projects are not adversely impacting other uses of the Missouri River such as navigation, flood protection, and municipal water supplies. We are not aware of any public opposition to fish and wildlife mitigation. In other words, these projects would provide a wide array of benefits without significant effects on existing uses of the River.

What appropriations are necessary?

The U.S. Corps of Engineers requested $1.1 million for fiscal year 1997. Congress increased that appropriation to $3.1 million. The Corps is requesting $3.9 million for fiscal year 1998. They have estimated their spending capability for fiscal year 1998 to be $10.2 million. We would like to see the fiscal year 1998 and following budgets for the Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project be set at $10 million per year to complete the project in a timely manner. The sharp budget cut in fiscal year 1997 and projected fiscal year 1998 budget will make it very difficult to keep this program on schedule. Even at $10 million per year, it will be at least 2002 before the project is completed. It was envisioned that the project would be completed in 2000, but the Corps is now projecting a completion date of 2006. The fiscal year 1994 appropriation for the Missouri River Fish and Wildlife Mitigation Project was $7.5 million, the fiscal year 1995 was $8.1 million, and fiscal year 1996 was $8.4 million. These three years of funding resulted in individual project components being completed and, just as important, established momentum for the overall mitigation project. Last year's appropriation of $1.1 million and this year's projected budget of $3.9 million will destroy the momentum that has taken so long to build.

The Corps has indicated they will not have sufficient funds to acquire land already negotiated to purchase and they have contractors available to construct projects that have been engineered and designed. The Corps has stated that "Funding for fiscal year 1998 is for continuing construction for the Missouri River Mitigation Project. Because the funds for fiscal year 1998 are very uncertain it is unlikely there will be funding available for any large construction contracts or real estate acquisitions. Work will likely be restricted to completing planning documents at several sites as well as monitoring the completed sites."

Previous appropriations for planning, engineering, design and construction have been well spent. The current authorization under the 1986 Water Resources Development Act is $81.4 million (1996 dollars), of which $28.5 million has been expended. This indicates the project is only 35 percent complete and falling behind schedule rapidly because of cuts in the yearly appropriations and inflation. We are concerned that future appropriation cuts and inflation will only serve to delay and ultimately accommodate a less than successful mitigation project.

PREPARED STATEMENT OF THE STANDING ROCK SIOUX TRIBE

The Standing Rock Sioux Tribe respectfully requests construction funding for the Standing Rock Sioux Irrigation Project, planning funds for the expansion of the Standing Rock Sioux Municipal, Rural and Industrial Project, and funds for feasibility study of economic development along Lake Oahe, all in the amount of $2,300,000:

Standing Rock Sioux Irrigation Project Construction	$2,000,000
Standing Rock Sioux MRI Project Planning/NEPA	200,000
Standing Rock Economic Development Feasibility	100,000
Total	2,300,000

Funds for the irrigation project will be used to continue design and to construct facilities (intake, pumping station, pipeline and sprinkler systems) in the Kenel/Wakpala area in the southern half of the Standing Rock Indian Reservation.

Funds are requested to continue planning and NEPA requirements for the expanded MRI system on the Reservation, a project that will be submitted for authorization in fiscal year 1997.

Funds are requested to undertake feasibility investigations of recreational development on Lake Oahe.

Location

The Standing Rock Indian Reservation is located in Sioux County, North Dakota, and Corson County, South Dakota (Figure 1). Tribal headquarters are in Fort Yates, approximately 75 miles south of Bismarck. The Reservation is bounded on the east

by the Missouri River, on the north by the Cannonball River, on the west by a line of longitude of 102 degrees west and on the south by a line of latitude of 45 degrees 30 minutes north. The Standing Rock Sioux Reservation was a part of the Great Reservation of the Sioux Nation in the Territory of Dakota established by the Treaty of 1868. The Act of March 2, 1889, diminished the Great Reservation of the Sioux Nation, and the Standing Rock Indian Reservation was part of the diminished reservation set apart as a permanent homeland for the Indians at the Standing Rock Agency in the Territory of Dakota. Figure 1 shows the location of the Standing Rock Indian Reservation.

PART A—IRRIGATION

Plan of Irrigation Development

Planning studies of the Tribe address three major project alternatives for the development of the authorized 2,380 acres within the Standing Rock Indian Reservation. These alternatives are located in the Cannonball (north and south), Kenel/Wakpala, and Grand River areas. Resolution Number 299–94 of the Standing Rock Sioux Tribe, dated August 8, 1994, (1) limits the development along the Grand River to 250 acres in the vicinity of Bullhead, or another location determined more suitable, (2) addresses about 400 acres in the vicinity of Cannonball and (3) refers to the remaining 1,780 acres, more or less, along the Missouri River including, to the extent suitable, lands north of Kenel and other lands in the southern half (South Dakota portion) of the Standing Rock Indian Reservation.

North Cannonball Unit to be Constructed in Fiscal Year 1997

The Certification Report for this project area was completed in February 1997 and submitted to the Secretary of Interior. The environmental assessment is underway. Construction plans, specifications and bidding will be completed, and fiscal year 1997 funds will be used to construct the unit. The estimated construction cost is $1.5 million, and funds have previously been appropriated for that purpose.

The lands of the Cannonball Unit are part of the authorized 2,380 acres of irrigation development on the Standing Rock Indian Reservation and account for about 430 acres of lands to be irrigated. Detailed land classification studies were initiated on specific areas of the Standing Rock Indian Reservation by the Standing Rock Sioux Tribe in spring of 1996. Complimentary investigations have focused on cash flow during operation of the project, drainage investigations and trace element assessment. Those investigations were reported for the North Cannonball Unit as a part of the land classification investigation.

The Standing Rock Sioux Tribe submitted a Certification Report containing sufficient information concerning the North Cannonball Unit (NCU) lands to appraise and separate the land into classes reflecting similar degrees of suitability for sustained irrigation. Certification of lands is a prerequisite to development of 2,380 acres of irrigation authorized by the Garrison Diversion Unit Reformulation Act of 1986 (Public Law 99–294). "* * * no funds are authorized to be appropriated for construction of these projects until the Secretary has made a finding of irrigability of the lands to receive water as required by the Act of July 31, 1953 (67 Stat. 266; 43 USC 390 a). * * *[1]

Kenel/Wakpala Unit to Be Constructed in Fiscal Year 1998

Approximately 1,780 acres of land are located in the Kenel/Wakpala area in the Reservation's southern half. Field work for irrigability has been completed in the area, and a report similar to the North Cannonball Unit will be submitted to the Secretary in fiscal year 1997 as a pre-requisite to the start of construction in this area. Other activities to be undertaken in fiscal year 1997 are completion of an environmental assessment and final plans and specifications in advance of bidding in fiscal year 1998. Appropriations for fiscal year 1998 will provide for actual construction of parts of the Kenel/Wakpala Project.

[1] 43 USC 390a provides as follows: No part of any appropriation shall be available for the initiation of construction under the terms of reclamation law of any dam of reservoir or water supply, or any tunnel, canal or conduit of water, or any water distribution system related to such dam or reservoir unit the Secretary shall certify to Congress that an adequate soil survey and land classification has been made and that the lands to be irrigated are susceptible to the production of agricultural crops by means of irrigation or that the successful irrigability of those lands and their susceptibility to sustained production of agricultural crops by means of irrigation has been demonstrated in practice.

PART B—STANDING ROCK SIOUX MRI PROJECT

Plan Formulation Report

The Standing Rock Sioux Tribe has completed an investigation entitled Plan Formulation Report, Standing Rock Sioux Municipal, Rural and Industrial Water Project, dated February 1997. The report constitutes a final engineering report with study of alternatives and recommendations for development of a project to bring safe and adequate drinking water to all parts of the Standing Rock Indian Reservation. With funds authorized by the Garrison Diversion Unit Reformulation Act of 1986 (Public Law 99–294), the Tribe has completed $8.5 million in construction to be bring drinking water to the Cannonball and Fort Yates areas, as well as areas in the southern half of the Reservation. The Plan Formulation Report of 1997 recommends completion of the project throughout all of the Reservation at a cost of $102 million (1996$). Figure 2 shows the location of the principal transmission facilities of the existing and expanded project.

Purpose of fiscal year 1998 Funds Request

Funds requested for fiscal year 1998 will be used to investigate options with other Garrison parties for reformulation of the project in fiscal year 1998. Potential cost savings will be investigated. National Environmental Policy Act (NEPA) requirements will be fulfilled, in part. A Level I cultural resource inventory will be completed reservation-wide, subject to Tribal rules and regulations as well as federal requirements. A wetlands inventory will be completed. Endangered species and all other requirements necessary for completion of an environmental assessment will be properly addressed.

PART C. ECONOMIC DEVELOPMENT FEASIBILITY

Purpose of Fiscal Year 1998 Funds Request

Considerable off-Reservation planning for reformulation of Garrison has been conducted of the feasibility of recreational development. The requested funds will be used on the Standing Rock Indian Reservation to assess the feasibility of marina and other water-related economic development potentials along the Standing Rock Sioux shoreline of Lake Oahe.

PREPARED STATEMENT OF NORMAN HAAK, CHAIRMAN, GARRISON DIVERSION CONSERVANCY DISTRICT

Chairman Domenici and Members of the Subcommittee: My name is Norman Haak, Chairman of the Garrison Diversion Conservancy District Board of Directors. We wish to thank the Chairman and the Committee for their past support. In the past, a portion of Garrison Diversion Unit appropriations has been used to assure a high quality and reliable water supply in communities across the state. These appropriations have also provided funding for completion of the mitigation programs set in motion by the Reformulation Act of 1986. The District is grateful for the assistance, and the taxpayers from Dickinson to Grand Forks and from Hankinson to Rugby appreciate the reliable water supply and efforts to complete the mitigation requirements.

This year the President's budget includes a request of $20.4 million for the Garrison Diversion Unit in order to continue assistance to communities still in need of a guaranteed supply of water. We realize that federal funding is limited, but the state's water needs continually grow as people's needs remain unmet. The potential for growth and high value economic development in areas of the state is limited due to the uncertainty of future water supplies. We are requesting an additional $7.5 million for water systems in Hebron, Glen Ullin, and Neche and for the continued operation of the Oakes Test Area.

In December 1996, at a hearing in the State regarding Garrison Diversion, which was conducted by the North Dakota Congressional Delegation and the Governor, vivid pictures of inadequate water supplies were illustrated. One woman displayed a white shirt that looked dirty after just one washing with their existing water supply. She also asked if we could imagine how not knowing if you had enough water for the next day's meals and washing affected her family's quality of life.

The State Water Commission and Garrison Diversion have put together a plan for meeting the State's municipal, rural, anal industrial (MR&I) water supply needs as far as the existing authorizations will allow. The plan was assembled two years ago and has been adjusted since then to match declining levels of appropriations for the GDU. The President's request, if not increased, will decimate the planned pro-

gram for meeting the existing highest priority needs to financial assistance to municipal, rural, and industrial water systems.

The Southwest Pipeline Project, already serving many areas, has yet to reach the communities of Hebron and Glen Ullin. These communities have failed a primary water quality standard test and the prospect of an EPA fine as high as $25,000 a day exists. In Hebron, a new cheese plant has just opened with the expectation that they will have a quality water supply in fiscal year 1998. That will not be possible without additional funding for the MR&I Program. Therefore, as a part of this increased request for $7.5 million, $3.5 million would be used to extend the Southwest Pipeline Project to these southwest communities.

In addition, the community of Neche is in dire straits. They are also in violation of the primary water quality standards. This small community of 450 people cannot even afford to continue their current operation and have no alternative but to hook onto an expanded North Valley/Walhalla water system. Of our request, $3.5 million would be for the North Valley/Walhalla project so that it can serve the community of Neche.

Of the additional funding, $500,000 is needed to continue the operation of the Oakes Test Area. The Bureau of Reclamation determined that they no longer wish to operate the Oakes Test Area in fiscal year 1998 and asked that the appropriate state agency begin negotiations to develop legislation that would transfer title and responsibility for operation and maintenance of the test facilities to the state or its designee. The District has been negotiating in good faith to find an appropriate arrangement. The Bureau has no counter proposal to the operational proposal offered by the Garrison Diversion Conservancy District. Nevertheless, the current budget does not include funding for continued operation of the OTA in fiscal year 1998. Without this additional funding, the federal government's investment of over $50 million in the Oakes Test Area will be left to rust and decay. The Bureau's estimated cost to abandon the OTA is $5 million, but no such money has been requested. Without additional monies, operators in this area will be left without a water supply and no recourse except the courts. Such action, or lack of action, will certainly prompt a strong reaction from those farms and businesses damaged in the Oakes Test Area. $500,000 will allow the State and the Bureau additional time to work out an acceptable solution.

The new budget format includes $2.9 million in the Bureau of Reclamation's budget for operation and maintenance of Indian projects. We request that this budget format be reconsidered and funds for Indian OM&R be clearly identified as requirements outside of/or beyond those in the Garrison Diversion Unit.

We are committed to answering North Dakota's water needs. It is one of the top priorities. We sincerely hope you can find the additional funds we are requesting for Garrison Diversion.

PREPARED STATEMENT OF THE CROW CREEK SIOUX RURAL WATER SYSTEM

Fiscal Year 1998 Appropriations Request

The Crow Creek Sioux Tribe respectfully request funds and language in the appropriations report for fiscal year 1998 for a feasibility study of the Crow Creek Sioux Rural Water Supply System, South Dakota, in the amount of $185,000. The funds requested for fiscal year 1998 will be used to investigate the feasibility of building a separate and independent rural water system within the Crow Creek Indian Reservation, connecting, at least in part, to the MId-Dakota Rural Water System and other alternatives for sources of safe and adequate water for the residents of the Crow Creek Indian Reservation.

Status of Needs Assessment

The Crow Creek Sioux Sioux Tribe has completed the first draft of a Needs Assessment though a cooperative agreement administered by the Bureau of Reclamation. A second draft of that report will be completed in March 1997. Considerable progress has been made on the project, and the Tribe appreciates the administration and guidance provided by the Bureau of Reclamation. The Tribe now knows the quantity of water needed for present and future purposes and needs for improvement of water quality. The Tribe has identified the alternatives and prepared preliminary construction, operation and maintenance costs of a reservation-wide system that will serve the rural household and livestock needs as well as connecting the existing public water systems to an improved source of water with quality meeting drinking water standards.

Funds of the Bureau of Reclamation are inadequate to complete the Needs Assessment, even though the Tribe has conducted the work at less costs than originally

projected. Additional funds are needed for the necessary feasibilty study. We are informed by the Bureau of Reclamation that the agency cannot authorize the use of funds for feasibility studies without Congressional approval, and we seek that approval through this Committee and language in the House Report on Energy and Water Development appropriations. The Crow Creek Sioux Tribe has committed to work with the Mid-Dakota Project to determine if partial water service from that entity is feasible, and Mid-Dakota needs to know to what extent, if any, Mid-Dakota will provide water to the Reservation. Existing funds, will be used to assess the feasibility of Mid-Dakota supplying some of our water needs, provided Bureau of Reclamation can release fiscal year 1997 funds for that purpose. fiscal year 1998 funds will be used to address the feasibility of a comprehensive reservation-wide project, incorporating existing systems into the project, including any part of the Mid-Dakota system found feasible.

Background

The Crow Creek Sioux Tribe of the Crow Creek Indian Reservation resides in central South Dakota on the eastern bank of the Missouri River, a virtually unlimited water supply (Figure 1). Table 1 presents the findings of our investigations of water needs to date.

The report addresses needs of a water project throughout the Crow Creek Indian Reservation with a total cost of $18,010,000. The system would be designed to serve a future population of 2,843 persons, primarily members of the Crow Creek Sioux Tribe. Because the Crow Creek Sioux Tribe is youthful, with median age of 18.9 years, the population is growing at a moderately high rate, and the need for drinking water facilities will grow as time passes.

Existing facilities include the Fort Thompson, Crow Creek, Big Bend and Stephan public water systems, which serve an estimated population of 1,520. Distribution facilities in the public water system would be incorporated into the new project and improved upon where necessary. The existing intake and treatment plant with 450 gpm capacity at Fort Thompson would likewise be retained. Existing storage facilities with 241,000 gallons of capacity would be incorporated.

Quality of water in the public drinking water systems ranges from good to poor. The Fort Thompson and Crow Creek systems, for example, have total dissolved solids (TDS) within the range of acceptable limits, but the Stephan and Big Bend water systems have total dissolved solids that exceed suggested limits of acceptability, (Table 1). Some of the individual rural wells, not connected to public water systems, have acceptable water quality, but the majority of individual wells has poor water quality with total dissolved solids ranging as high as 4,440 milligrams per liter.

The Missouri River is a source of dependable water supply for a municipal, rural and industrial water project on the Crow Creek Indian Reservation. The average annual streamflow at Fort Randall Dam is 18,214,000 acre feet. Streams crossing the Crow Creek Indian Reservation, such as Campbell Creek, Elm Creek and Crow Creek, are not dependable supplies of water. While those sources have good flows during some of the months of the year, each of the tributary streams experiences zero flow during consecutive months of the year. Groundwater may be a reliable source of supply in the southeast corner of Big Bend and in the southeast corner of the Crow Creek Indian Reservation. Sufficient exploration of the terrace gravels at these locations has not been undertaken to determine the long-term availability of water and its quality.

Need for a municipal, rural and industrial water project on the Crow Creek Indian Reservation averages 262 gallons per capita per day, including 48 gallons per capita per day for a heavy water using industry, such as a meat packing plant. The average need reflects system losses of 38 gallons per capita per day, 15 percent of demand, an acceptable level of leakage in transmission, distribution and in-house fixtures. The average 262 gallons per capita per day reflects water uses for full employment, commercial and industrial development of the Reservation, provisions for livestock and moderate water conservation practices, the latter reflecting a future plumbing code requiring the use of water conserving fixtures in the home. Provision is also made for lawns and gardens surrounding each of the 978 households projected for the Reservation in year 2020, (Table 1).

TABLE 1–1.—STATISTICAL SUMMARY CROW CREEK SIOUX MUNICIPAL, RURAL AND INDUSTRIAL WATER PROJECT

	1990 Census	2020 Projected
Crow Creek Population	1,756	2,843
Indian	1,532	2,775
Non-Indian	224	68
Median Age:		
Crow Creek	18.9	.....
South Dakota	32.6	.....
Crow Creek School Enrollment:		
Ages 3 and 4	40	73
Ages 5 to 14	16	765
Ages 15 to 17	97	179
Ages 18 to 19	17	58
Over 20	42	122
Total	612	1,197
Housing:		
Households	434	948
Persons per Household	4.05	3.00

	Crow Creek	South Dakota
1990 Household Income	$12,673	$22,503
1990 Family Income	$13,125	$27,602
1990 Per Capita Income	$3,717	$10,661
Percent Families Below Poverty Level	49.5	11.6
1990 Labor Force	480	342,112
Unemployed	139	13,938
Percent in Labor Force	55.7	74.3
Percent Unemployed	29.0	4.1

	Value
Existing Public Water Systems:	
Population Served	1,520
Service Connections	305
Flow Capacity, gpm	535
Storage Capacity, gallons	241,000
General Water Quality, TDS, mg/l:	
Secondary Suggested Limit	500
Fort Thompson	479
Crow Creek	706
Stephan	1,500
Big Bend	1,928
Rural Wells	.....
Maximum Observed	4,440
Average Observed	702
Water Availability:	
Missouri River Streamflows, af/year	18,214,000
Campbell Creek Streamflows, af/year	2,669
Elm Creek Streamflows, af/year	5,195
Crow Creek Streamflows, af/year	13,749
Missouri River Monthly Minimum, af/month	260,668
Tributary Monthly Minimum, af/month	.....
Groundwater	(1)
Design Needs, gallons per capita per average day:	
In-Residence	81
Lawns and Gardens	62
School Enrollment	7
Labor Force	11
Commercial and Industrial	13
Heavy Industry	48

Livestock	14
System Losses	38
Water Conservation	−12
Total	262
Design Needs:	
Average Day, gallons	743,748
Maximum Day, gallons	1,926,308
Maximum Day, gpm	1,338
Annual, af	833

[1] Good to Poor.

The average future water need is 743,748 gallons per day. On days of the year when maximum water use is approached, needs will rise to 1,926,000 gallons, approximately 2.59 times the average day requirement. These values are equivalent to a maximum day flow of 1,338 gpm, of which 450 gpm will be provided from the existing system at Fort Thompson. The annual water requirement for the project is 833 acre feet, .005 percent of the average annual flow of the Missouri River at Fort Randall. It would require 200 similar projects to reduce the flow of the Missouri River by as much as 1 percent. The Crow Creek Sioux Tribe possesses water rights reserved by Tribal leaders at the time of the treaties with the United States, (including the 1868 Treaty) which significantly exceed the 833 acre feet of annual use proposed for this project. The water requirements of the municipal, rural and industrial water project are comparable to that required for approximately 250 acres of irrigation on the Crow Creek Indian Reservation, (Table 1).

Construction costs of the water project are estimated at $18,010,000. Twenty nine (29) pumping stations would be required throughout the system with a total of 463 horsepower. Electrical costs, based on 1996 dollars, would average $58,430 annually. Operation and maintenance costs of the pumping stations have been estimated at $17,000 annually, (Table 1–1). The project will require 181 miles of pipeline (985,000 feet).

The project as proposed will provide safe and adequate drinking water to the Crow Creek Indian Reservation for the projected population, the development of commercial and business activities, development of a heavy-water using industry and the support of all livestock within the Reservation.

Prepared Statement of Kurt Pfeifle, General Manager, Mid-Dakota Rural Water System, Inc.

Fiscal Year 1998 Funding Request

The Mid-Dakota Project is requesting $29,836,379 in federal appropriations for fiscal year 1998. As with our past submissions to this subcommittee, Mid-Dakota's fiscal year 1998 request is based on a detailed analysis of our ability to proceed with construction during the fiscal year. In all previous years, Mid-Dakota has fully expended its appropriated funds, including federal, state, and local, and could have spent significantly more were they available.

HISTORY OF PROJECT FUNDING

Federal Fiscal Year	Project's Request	President's Budget	Enacted Levels	Award Level (Underfinancing) Applied
1994	$7,991,000	.....	$2,000,000	$1,500,000
1995	22,367,000	.....	4,000,000	3,600,000
1996	23,394,000	$2,000,000	11,500,000	10,902,000
1996	NA	.....	([1])	2,323,000
1997	29,686,000	2,500,000	10,000,000	9,400,000
1998	29,836,379	10,000,000	.....	.....
Totals	113,274,379	14,500,000	27,500,000	27,725,000

[1] Additional funding.

Note: Additionally, the State of South Dakota has contributed $7,373,000 in grants to the Mid-Dakota Project, in previous years. It is likely that the Project will receive $1,000,000 in grant and $1,000,000 in a short-term loan this Legislative Session.

The Project was authorized by Congress and signed into law by President George W. Bush in October 1992. The federal authorization for the project totaled $100 million in a combination of federal grant and loan funds (grant funds may not exceed 85 percent of federal contribution). The State authorization was for $8.4 million. As of February 1996, the total authorized indexed cost of the project was $128,812,000, in fiscal year 1997. All federal funding considered, the Government is now 22 percent into its commitment to provide construction funding for the Project. Senate Bill 41 has overwhelmingly passed the South Dakota House and Senate and contains a grant of $1 million and a short term loan of $1 million for the project, which will be made available to the Project in March, 1997. It is anticipated that the 1998 South Dakota Legislature will appropriate its remaining commitment, slightly over $1 million. When you look at the federal and state combined awards, you find that the project is nearly 30 percent complete, at least in terms of monetary awards. With this progress into its total development, we are pleased to see that Congress, in particular the Appropriations, Energy and Water Development Subcommittees, intend to see the Mid-Dakota project through to its completion.

MID-DAKOTA FUNDING STATUS

	Amount	Percent
Federal	$27,725,000	21.52
State	9,373,000	7.28
Remaining	92,760,000	71.20
Total Authorization	128,812,000	

Mid-Dakota wishes to thank this committee for its support over the past four years. With the current federal awards and funds appropriated by the State of South Dakota, we have been able to make phenomenal progress on project construction.

Impacts of Award

The most obvious impact of any significant reduction from Mid-Dakota's request will be the delay of construction of one or more Project components. The $29.8 million dollar request will allow the Project to proceed with construction of contract(s) 4–1A, 4–1B and 3–2 (see map, page 4). An award of less than our request will result in the deletion or reconfiguration of one or more of these contracts from the fiscal year 1998 construction schedule. Further, reduced appropriations have the effect of adding more cost to the amount needed for completion of the Project.

For more specific instances where the impact of insufficient funding will most definitely be felt, we offer the following as evidence to this testimony:

City of Gettysburg, SD.—This small community (pop. 1,510) is facing a real danger of losing its water supply system. Currently, Gettysburg has an intake structure on the bank of the Missouri River. The pipeline carrying water from the intake to the community is caught in an area where the soil has been shifting and sliding. The City Water Manager and the City Council are very concerned that in the near future the hillside will give way and their water intake and supply pipeline will be lost or inoperable at best. The Community has corresponded with the Mid-Dakota Project and requested that we do whatever we can to accelerate construction of the Mid-Dakota pipeline to the Community. Mid-Dakota has replied that approximately $20 million in fiscal year 1998 federal appropriations would need to be awarded to bring construction activities to the Gettysburg area.

Ron and Betty Heckenliable.—of rural Highmore, SD, have been hauling water to their ranch for more than 43 years! As a weekly ritual Ron pulls a trailer mounted tank that holds 700 gallons to town and back, then fills his cistern to provide for his entire household water use. It is true that the extent of suffrage for Ron and Betty is in the minority of people within the Project area, but sadly it is not a rarity.

Another impact not readily apparent, but certainly one that exists, is the impact funding has on other States. Many believe that Mid-Dakota is a Project that ONLY benefits people who live in South Dakota. Nothing could be further from the truth. The Great State of South Dakota is blessed with many things, however, industrial resources are not among them. Mid-Dakota has made what we consider a conservative estimate, stating that more than 70 percent of the total cost of the Mid-Dakota Project will be spent outside of our State. By way of example, millions of dollars have already been spent in pipe purchases in Alabama. Similarly, millions have been expended by way of contractor payments to Companies in North Dakota, Wyo-

ming, Minnesota and Texas. Thousands and hundreds of thousands of dollars have been expended in many other States. Potentially, States such as Pennsylvania, Louisiana, Washington, Oregon and Kentucky will also benefit. The map to the right, denotes States that have already gained significantly from the construction of the Mid-Dakota Project (shaded red), as well as those States who potentially may realize significant purchases in the future as the type of materials and construction begin to change (shaded green). The point being, that Mid-Dakota is truly a "federal" Project, being constructed and providing benefits to people throughout the Nation, from California to Pennsylvania, from Texas to Montana. In very real as well as potential terms, Mid-Dakota may very well affect to varying degrees every State in the Nation.

Mid-Dakota has consistently informed members of Congress and the various federal agencies that we work with about the detrimental effects insufficient funding has on the Project and ultimately the people who will receive the water. Always in character with the tough and individualistic portrayal of people living in the Great Plains, Mid-Dakota and the people we will serve have accepted the hardships imposed on the Project with a quiet resolve. However, failure to provide full funding has had profound consequences.

Construction in Progress

Mid-Dakota began construction in September of 1994, with the construction of its Water Intake and Pump Station. Since that eventful day of first construction start, we have bid, awarded and are into construction on six Project components. The following bulleted list provides a synopsis of each construction contract:

—Contract 1–1 (Oahe Water Intake and Pump Station), Contract was awarded to Industrial Builders, Inc., of Fargo, ND, in August of 1994. The Intake structure is of a vertical caisson design and is currently at the 100 percent completion level. Only a few clean-up items need to be accomplished and the contract can be closed out in April, 1997. Cost of the Intake is approximately $3.95 million.

—Contract 2–1 (Oahe Water Treatment Plant), Contract was awarded to John T. Jones Construction Co., of Fargo, ND, in October of 1994. The Water Treatment Plant is a "Direct Filtration" design, capable of producing 9.0 million gallons of treated water per day. The Treatment Plant is currently at the 98 percent completion level and will be substantially complete in early March, 1997. Lack of completion of Contracts 3–1B, 3–1C, 4–1A and 5–1 (due to inadequate fiscal year 1997 funding), prevents completion and testing of the water treatment plant. However, the general contractor's, one year warranty covering the entire facility will commence upon substantial completion (some components of the facility have long warranties provided by the specific manufacturer). Cost of the Treatment Plant is approximately $10.3 million.

—Contract 3–1A (Raw Water Pipeline), Contract was awarded to Larry's Construction, Co., of Gillette, WY, in June of 1995. The contract consists of nearly four miles of large diameter (30 inch) "Ductile Iron Pipe." The Raw Water Pipeline is currently complete and awaiting only some clean-up items prior to closing the contract in April, 1997. Cost of the Raw Water Pipeline is approximately $1.7 million.

—Contract 3–1B (Main Transmission Pipeline—to Blunt, SD), Contract was awarded to Kenko Inc., of Minneapolis, MN, in April of 1996. The contract consists of nearly 24 miles of large diameter (30 and 24 inch) "Steel Pipe." The contract is 36 percent in place and construction will resume in the Spring of 1997, following a Winter shut-down, with completion anticipated in August, 1997. Cost of the contract is currently projected to be $6.9 million.

—Contract 3–1C (Main Transmission Pipeline—to Highmore Water Storage Tank), Contract was awarded to S.J. Louis Inc., of St. Cloud, MN, in April of 1996. The contract consists of nearly 18 miles of large diameter (30 and 24 inch) "Ductile Iron Pipe." The contract is 35 percent in place and construction will resume in the Spring of 1997, following a Winter shut-down, with completion anticipated in September, 1997. Cost of the contract is currently projected to be $4.8 million.

—Contract 5–1 (Highmore Water Storage Tank), Contract was awarded to Landmark Structures Inc., of Keller, TX, in April of 1996. The contract provides for the erection of a 1.5 million gallon water storage tank (composite design) near the Town of Highmore, South Dakota. The contract is 45 percent complete and construction will resume in the Spring of 1997, following a Winter shut-down, with completion in September 1997. Cost of the contract is currently projected to be $1.4 million.

Funding for the preceding contracts was reserved from previously appropriated and reprogrammed funds, except for a shortage of $796,172 for Contract 3–1C. With

the underfinancing of $600,000 subsequently applied, the Project is $1,396,173 short in fiscal year 1997. This shortfall will be covered with State funds from SB 41 (see above).

Use of Funds Requested

The following numbered items represent the Project's proposed use of the $29.8 Million request in fiscal year 1998. Reduction of award from our request will cause the Project to delete or modify (depending upon size of any reduction) one or more of the delineated Project Components:

Canning Dist. Area (Cont. 4–1A)	$4,265,960
Bid Contingency @ 5 percent	213,298
Change Order Contingency @ 5 percent	213,298
Inspection & Const. Services @ 8 percent	341,277
Add-on-Users @ 7.5 percent	319,947
Subtotal Canning	5,353,780
Highmore W. Dist. Area (Cont. 4–1A)	1,362,850
Bid Contingency @ 5 percent	68,143
Change Order Contingency @ 5 percent	67,143
Inspection & Const. Services @ 8 percent	109,028
Add-on Users @ 7.5 percent	102,214
Subtotal Highmore West	1,710,378
Onida Dist. Area (Cont. 4–1A)	2,041,000
Onida Water Storage Tank (Cont. 5–	434,000
Bid Contingency @ 5 percent	123,750
Change Order Contingency @ 5 percent	123,750
Inspection & Const. Services @ 8 percent	163,280
Add-on Users @ 7.5 percent	153,075
Subtotal Onida	3,038,855
Okobojo Dist. Area (Cont. 4–1A)	1,335,000
Okobojo Water Tank (Cont. 5–1A)	110,700
Bid Contingency @ 5 percent	72,285
Change Order Contingency @ 5 percent	72,285
Inspection & Const. Services @ 8 percent	115,656
Add-on Users @ 7.5 percent	100,125
Subtotal Onida	1,806,051
Agar Dist. Area (Cont. 4–1B)	2,130,533
Agar Water Tank (Cont. 5–1B)	361,825
Bid Contingency @ 5 percent	106,527
Change Order Contingency @ 5 percent	106,527
Inspection & Const. Services @ 8 percent	170,443
Add-on Users @ 7.5 percent	159,790
Subtotal Agar	3,035,645
Gettysburg Dist. Area (Cont. 4–1B)	4,430,480
Gettysburg Water Tank (Cont. 5–1B)	685,000
Bid Contingency @ 5 percent	255,774
Change Order Contingency @ 5 percent	255,774
Inspection & Const. Services @ 8 percent	409,238
Add-on Users @ 7.5 percent	332,286
Subtotal Gettysburg	6,368,552
Main Pipe to St. Law. (Cont. 3–2)	7,882,000
Bid Contingency @ 5 percent	394,100
Change Order Contingency @ 5 percent	394,100

Inspection & Const. Services @ 6 percent	472,920
Subtotal Main Pipe to St. Lawrence	9,143,120
Other Costs:	
Engineering & Design	300,000
Administration	300,000
U.S. Bureau of Reclamation	250,000
Subtotal Other Costs	850,000
Wetland Component (O&M)	15,000
Total Fiscal Year 1998 Program Needs	31,321,379
Financing:	
Federal	29,836,379
State	1,000,000
Local	485,000
Total Financing	31,321,379

Construction of schedules one through seven above, will provide for the connection of twelve small communities (Agar, Blunt, Gettysburg, Harrold, Highmore, Hoven, Lebanon, Miller, Onida, Ree Heights, St. Lawrence and Tolstoy, South Dakota). It will also make possible, the connection of approximately 910 rural accounts. Mid-Dakota estimates nearly 9,000 South Dakota residents will be enjoying the benefits of safe, clean, affordable drinking water upon completion of the preceding project components.

Closing

Mid-Dakota is now very close to completing the painstaking task of building nearly $30 million worth of facilities before ever serving a drop of water. Funding already in place will ensure the completion of the facilities necessary to make a hydraulically operable system. The next step is to begin putting water users on line. The first $20 million of our $29.8 million request will be dedicated to do exactly that, connecting users to the system. Further, the remaining $9.8 million of the request, while ostensibly, to be used for a main pipeline extension, will also connect users, such as the towns of Ree Heights, Miller and St. Lawrence, South Dakota.

Mid-Dakota is intensely aware of the difficult funding decisions that face the Energy and Water Appropriations Subcommittee and we do not envy the difficult job that lies ahead. We only ask that when the Subcommittee meets to make its funding decisions that you look closely at the Mid-Dakota Project and recognize the dire need that exists, the exceptionally high level of local and state support, the readiness of the Project to proceed, our credibility and ability, to actually accomplish those tasks we set out to do.

Again, we thank the Subcommittee for their strong support in the past!

PREPARED STATEMENT OF THE MNI WICONI PROJECT, SOUTH DAKOTA

Fiscal Year 1998 Budget Request

The Mni Wiconi Project beneficiaries (as listed below) respectfully request fifth year construction funding (fiscal year 1998) for the project in the amount of $37,155,000 as follows:

Oglala Sioux Rural Water Supply System:	
Core Facilities (Treatment Plant, Pipelines)	$12,223,000
Distribution System on Pine Ridge	9,233,000
West River/Lyman-Jones Rural Water Systems	7,661,000
Rosebud Sioux Rural Water System	7,004,000
Lower Brule Sioux Rural Water System	925,000
Total Mni Wiconi Project	37,155,000

The Oglala, Lower Brule and Rosebud Sioux Tribes were consulted as required by the Indian Self-Determination Act (Public Law 93–368, as amended) when the Department submitted its fiscal year 1998 budget of $33.19 million for the Mni Wiconi Project to OMB. Such amount, we believe, is in keeping with the judgement by the Bureau of Reclamation and Department of Interior that the project is pro-

gressing extremely well and that the higher level of funding is absolutely necessary to complete the Project by year 2003 and to bring good clean water to our people.

The Administration's budget of $20.976 million is a sharp reduction from its budget of $28.3 million last year. This has created a crisis in the project.

Construction Plans for Fiscal Year 1998 Funds

The project beneficiaries are capable of continuing significant on-going construction on the distribution systems within the service areas of the project (Figure 1). See Sections 5 through 8.

The Oglala Sioux Rural Water Supply System (OSRWSS) will execute contracts for major construction activities on the core system. Having completed the intake, construction contracts will be continued on the treatment plant (Table 1). Construction of the treatment plant will require $7.2 million in fiscal year 1998 to continue construction of this $20.6 million component. OSRWSS will use $5.6 million in fiscal year 1998 funds for construction contracts for large diameter pipelines and related facilities that will connect the treatment plant with the service areas (Table 1). The area proposed for pipeline construction is between the treatment plant and Vivian (Figure 1). Figure 1 is a diagram of the core facilities of the Oglala Sioux Rural Water Supply System that will deliver water to the interconnections of West River/Lyman-Jones, Rosebud and Lower Brule. Figure 1 shows the elements of the core system that will be constructed with fiscal year 1998 funds and the ultimate development of the core system.

Construction Schedule Revision

With the needs of the Mni Wiconi Project in mind, the councils and boards of the Indian and off-reservation service areas have prepared another revised plan for completion of the project by year 2003. The plan was designed to recognize the funding environment in which the appropriation committees are working and to seek a level of funding that is workable. The Project has five years after 1998 to complete the construction of the OSRWSS core system and the distribution systems within the respective service areas. The project participants are committed to working with the subcommittee to ensure that the expectations of the memberships are met. The request for 1998 is the average of the amount needed in the remaining five years of the Project.

This construction schedule is modified from the schedule presented in the Final Engineering Report and from the schedule submitted to the committee last year. Construction of the treatment plant and other core facilities has been moved to later years of the schedule and has been spread out over a longer period of years to reflect the appropriation history. The following table reflects the appropriation needs to complete the Project.

TABLE 1.—SCHEDULE AND APPROPRIATIONS FOR PROJECT COMPLETION

Year	OSRWSS Intake	OSRWSS Treatment	OSRWSS Core Pipelines				OSRWSS Core Cost	Service Area Cost	Appropriation Completion Schedule
			N Route	to Vivian	to Murdo	to Pine R			
1996	$3,775,104	$1,840,000	.....	.....	.....	.....	$5,615,000	$15,525,000	$21,140,000
1997	.....	4,386,000	.....	$8,065,000	.....	.....	12,451,000	14,056,000	26,507,000
1998	.....	7,160,000	.....	5,632,000	.....	.....	12,792,000	24,363,000	37,155,000
1999	.....	7,253,000	.....	5,034,000	.....	$643,000	12,930,000	24,175,000	37,105,000
2000	.....	.....	.....	1,240,000	$6,573,000	4,619,000	12,432,000	24,779,000	37,211,000
2001	.....	.....	$6,579,000	.....	5,171,000	3,168,000	14,918,000	25,399,000	40,317,000
2002	.....	.....	8,684,000	.....	4,330,000	2,277,000	15,291,000	26,034,000	41,325,000
2003	.....	.....	12,980,000	.....	.....	.....	12,980,000	26,685,000	39,665,000
Total	3,775,104	20,639,000	28,243,000	19,971,000	16,074,000	10,707,000	99,409,000	181,016,000	280,425,000

The construction sequence of the Oglala Sioux Rural Water Supply System (OSRWSS) will interconnect and supply all major population segments with Missouri River water in the project's "sunset" year, 2003. The first major population segment will be served with Missouri River water in 2000: a design population of 5,000 within the Lower Brule and Lyman-Jones systems. By year 2002, the Oglala core system will deliver Missouri River water at interconnections designed for a population of 38,000 members, and by year 2003, the Oglala core will deliver water at interconnections designed for a population of 52,000 members, the population projected for all service areas between years 2010 and 2020. Distribution systems will also be completed in the last year in the construction schedule (fiscal year 2003). The Project can be completed on time if the appropriations request is met or nearly met. It will become more difficult to bring the project benefits to the area by 2003 without an increase in the Administration's proposed budget for fiscal year 1998. Please note that the costs have been indexed in Table 1 through 2003 and are higher than shown last year by $23.5 million due to the shift of one year on completion of all project elements and movement of more cost originally proposed earlier in the project to its end. Delays in funding not only increase the direct cost of the Project, there are also human costs involved. As described below, our Project has unique needs in regard to health and poverty issues. The costs, in terms of health care and human suffering, remain unaddressed as construction is delayed. It is essential to remain on schedule to end this suffering and improve the quality of life for people in the Project area.

Unique Needs of This Project

Your consideration in this most important project, a project that brings hope, dignity and a spirit of cooperation between Indian and non-Indians, will be greatly appreciated. This subcommittee has provided us with considerable support for which we are grateful. This year we had hoped the Administration would provide a budget that would not require a significant adjustment by the subcommittee, but because of the devastating reduction during the OMB review period we are forced to petition for Congressional help to restore funds to the level requested here.

The threat of a radically lower level of appropriations in fiscal year 1998 is one crisis compounding another. The project beneficiaries, particularly the three Indian Reservations, have the lowest income levels in the Nation. The health risks to our people drinking unsafe water are compounded by reductions in health programs. We respectfully submit that our project is unique and that no other project in the Nation has greater needs. Poverty in our service areas is consistently deeper than elsewhere in the Nation. Health effects of water borne diseases are consistently more prevalent than elsewhere in the Nation, due in part to (1) lack of adequate water in the home and (2) poor water quality where water is available. Higher incidences of impetigo, gastroenteritis, shigellosis, scabies and hepatitis-A are well documented on the Indian reservations of the Mni Wiconi Project area. At the close of the 20th century one cannot find a region in which social and economic conditions are as deplorable. These circumstances are summarized in Table 2. Mni Wiconi builds the dignity of many, not only though improvement of drinking water, but through employment and increased earnings during planning, construction, operation and maintenance.

TABLE 2.—1990 BUREAU OF CENSUS ECONOMIC STATISTICS

Indian Reservation/State	Per Capita Income	Families Below Poverty Level (Percent)	Unemployment (Percent)
Pine Ridge (Shannon County)	$3,029	59.6	32.7
Rosebud (Todd County)	4,005	54.4	27.3
Lower Brule (Lyman County)	4,679	45.0	15.7
State of South Dakota	10,661	11.6	4.2
National	14,420	10.0	6.3

Financial support for the Indian membership has already been subjected to drastic cuts in funding programs through the Bureau of Indian Affairs and through Welfare Reform. This project, progressing through the budget fighting efforts at the National level, was a source of strong hope that would off-set the loss of employment and income in other programs and provide for a healthier environment. Tribal leaders anticipate that Welfare Reform legislation and other budget cuts nation-wide will create a crisis for tribal government when tribal members move back to the res-

ervations in order to survive. This movement has already started and will create water needs that will more than utilize the benefits of the Mni Wiconi Project Act. Public policy has resulted in accelerated population growth on the reservations. The Act mandates that: "* * * the United States has a trust responsibility to ensure that adequate and safe water supplies are available to meet the economic, environmental, water supply and public health needs of the Pine Ridge, Rosebud and Lower Brule Indian Reservations * * *."

Indian support for this project had not come easily because of the historical experience of broken commitments to the Indian people by the Federal Government. The argument was that there is no hope and the Sioux Tribes would be used to build the non-Indian segments of the project and the Indian segments would linger to completion. These arguments have been overcome by better planning and an amended authorization. It will be difficult to argue that the reduction in funding levels proposed in the Administration's budget is not in fact the beginning of another broken commitment.

Oglala Sioux Rural Water Supply System within Pine Ridge Indian Reservation

Table 3 summarizes the status of the Oglala Sioux distribution system on the Pine Ridge Indian Reservation. With projects now designed and proceeding toward construction award, there are 1,687 services and 725.9 miles of distribution and service pipelines. These projects will be started in fiscal year 1997 and will require fiscal year 1998 appropriations for completion.

TABLE 3.—PROGRESS ON OSRWSS DISTRIBUTION SYSTEM

OSRWSS Project	Status	Rural Residential Connections (number)	Mainline Pipeline (miles)	Distribution Pipeline (miles)
White Clay/Wakpamni	Operating	187	38.8	26.1
Slim Buttes	Operating	76	27.5	14.9
Kyle North	Operating	77	15.2	13.1
Kyle to Sharps Corner	Operating	107	26.6	17.1
West Boundary	Operating	3	6.5	3.0
Manderson Loop I	Constructing	106	15.8	26.3
Manderson Loop II	Constructing	55	15.2	18.4
Manderson Loop III	Construct Start Fiscal Year 1997	145	8.1	28.2
Manderson Loop IV	Construct Start Fiscal Year 1997	100	12.5	20.0
Manderson Loop V	Construct Start Fiscal Year 1998	100	19.5	15.0
Kyle to Allen	Construct Start Fiscal Year 1998	171	51.5	19.8
Rockyford to Redshirt	Design Start Fiscal Year 1996	40	46.2	9.8
Kadoka to Kyle I	Design Start Fiscal Year 1996	20	20.8	10.0
Kadoka to Kyle II	Design Start Fiscal Year 1997	500	100.0	100.0
Totals		1,687	404.2	321.7

West River/Lyman-Jones Rural Water System

The West River/Lyman-Jones systems have completed their third construction season. We are presently serving 417 of the original 2,016 members signed up. With fiscal year 1997 funds provided by Congress and non-federal funding provided by the State of South Dakota and individual members, we will extend service to 95 users in the Reliance service areas. The requested fiscal year 1998 funding will extend water service to 774 locations, 39 percent of our total project membership.

WR/LJ has now gone as far as we can without water service from the OSRWSS core pipeline. The core pipeline is our primary water supply. It will replace our interim sources and those communities will in turn become users of Mni Wiconi Project water which is of far superior quality. As the OSRWSS core pipeline becomes operational, we will extend water service to the 13 municipalities and the remaining 1,599 individual members.

TABLE 4.—PROGRESS ON WR/LJ DISTRIBUTION SYSTEM

WR/LJ Service Area	Status	Residential Connections (number)	Mainline Pipeline (miles)	Service Pipeline (miles)
Creighton	Operating	89	179	8
Elbon	Operating	136	274	13
Kadoka	Operating	119	247	11
Grindstone South	Operating	73	128	7
Reliance North and South	Construct	95	100	9
Ft. Pierre to Vivian	Design	95	118	9
Kennebec North	Design	89	97	8
Kennebec South	Design	78	92	8
Totals		774	1,235	73

Rosebud Sioux Rural Water System

The past year was memorable one for the people of the Rosebud Sioux Reservation. Construction of the Rosebud Sioux Rural Water System began in July and the first phase, the He Dog/Upper Cut Meat Project, should be in operation this spring. Close to 400 people will benefit from the quality water provided by this project. The He Dog day school will also have greatly improved fire protection.

Rosebud has ambitious plans for fiscal year 1997. The Soldier Creek/Ring Thunder Project will be bid this month. Construction will begin on a second contract in the Mission/Rosebud area this summer. These projects serve an area with a design population of 5,000 people. Completion of the Mission/Rosebud work will require fiscal year 1998 funds.

The remainder of the fiscal year 1998 funds will be used on construction of the Rosebud core pipeline north towards Horse Creek, White River and Swift Bear. These communities are all suffering from serious water problems. The water quality and supply problems in these communities are so severe, for Indians and non-Indians alike, that the Rosebud Sioux Tribe, West River/Lyman-Jones, and the town of White River are exploring ways to cooperatively solve these problems as quickly as possible. This Rosebud core pipeline will be extended over the course of the next five years to connect with the OSRWSS core line when it reaches Murdo in 2002.

Lower Brule Rural Water System

The Lower Brule Rural Water System has completed its Needs Assessment and Water Conservation Plan, thereby meeting the pre-requisites to use of construction funds. The existing water system serving the communities of Lower Brule and West Brule has been turned over to the Lower Brule Rural Water System. Discussions are underway with West River/Lyman-Jones to construct Phase I of the Lower Brule core system from West Brule to Reliance in both fiscal year 1997 and fiscal year 1998. The Lower Brule core system will interconnect with Phase I of the Lower Brule distribution system, Fort Hale and Lower Brule South to be constructed with fiscal year 1998 funds, as well as the community of Reliance. The Lower Brule core system from Vivian to Presho will be the additional focus of construction in fiscal year 1998.

Closing In our testimony above, we described the urgency of this year's appropriations caused by an inadequate budget proposed by the Administration. We close by asking the Subcommittee to consider additional factors:

—Fiscal Year 1998 is the fifth year of construction. At the conclusion of fiscal year 1997, we will be on schedule for completion in fiscal year 2003;

—We are on schedule with design of fiscal year 1998 facilities and need the fiscal year 1998 funds to continue ongoing construction contracts and initiate new ones;

—The following finding of Congress in Public Law 100–516, as amended, underscores the nature of this project relative to others in the fiscal year 1998 budget: "* * * the United States has a trust responsibility to ensure that adequate and safe water supplies are available to meet the economic, environmental, water supply and public health needs of the Pine Ridge, Rosebud and Lower Brule Indian Reservations * * *."

PREPARED STATEMENT OF STEVEN G. OLTMANS, GENERAL MANAGER, PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

The Papio-Missouri River Natural Resources District is a tax levying, local subdivision of the State government and is governed by an elected board of directors. We have within our borders and jurisdiction, over 137 miles of the channelized portion of the Missouri River that is in desperate need of restoration and habitat improvement.

The entire Missouri River Ecosystem has been deteriorating over the last several decades. Over 500,000 acres of riverine wetlands, backwaters, floodplain forest, prairie and oxbow lake habitat have been lost in the 735 mile channelized reach from Sioux City, Iowa to St. Louis, Missouri. This loss is directly attributed to the Federal flood control and channelization projects on the Missouri River. However, recent attempts to restore this disappearing habitat are under way. Two of these authorized projects, discussed below, are an effort to return portions of this lost habitat to a healthy and productive Missouri River System within our lifetime.

The Public Law 99–662 Section 601(a) of the 1986 Water Resources Development Act—Missouri River Fish and Wildlife Mitigation Project.

This Federal restoration effort for the Missouri River Bank Stabilization and Mitigation Project is an ongoing, necessary, and to date, very successful undertaking. The Papio-Missouri River Natural Resources District has long been a proponent of restoring the fish and wildlife habitat within the channelized reach of the Missouri River. This Mitigation Project is beginning to show benefits to the entire Missouri River System that must continue with an aggressive and expanded effort.

The Papio-Missouri River Natural Resources District is fully aware and supportive of the four state (Iowa, Kansas, Missouri, Nebraska) fish and wildlife agency's request for increasing the Administration's fiscal year 1998 request of $3.895 million. The Corps of Engineers estimate of their capability for acquisition and restoration construction in fiscal year 1998 is $10.2 million, and therefore we strongly urge the Committee to increase the Corps of Engineers funding for this Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project to $10 million per year to complete this project in a timely manner.

The Public Law 99–662 Section 1135(b) of the 1986 Water Resources Development Act—Project Modifications for Improvement of the Environment.

This partnership between the Federal Government and a local sponsor has been utilized by the Papio-Missouri River Natural Resources District to restore and establish the Boyer Chute National Wildlife Refuge, and the Hidden Lake/Great Marsh complex in Washington and Sarpy Counties, respectively. The Papio-Missouri River NRD has contributed nearly 5 million local dollars to these critical restoration projects. We've also initiated projects at Lower Decatur Bend and California Bend (Burt and Washington Counties) and are planning others as funds are available throughout the rest of our Natural Resources District.

Using this Section 1135 program, the Papio-Missouri Natural Resources District has been able to leverage other assets to assist in stretching everyone's funds. This unique source of project money does much to promote the restoration of this National natural resource.

A tremendous, Federal/Local and multi-state partnership has developed over the last several years called the Back to the River initiative. A brochure is included that summarizes the goals, achievements and opportunities possible when these partnerships are realized. The Section 1135 funding for environmental enhancement along the Missouri River, has provided the impetus for this multi-state, multi-jurisdictional restoration effort.

We are therefore very supportive of the 21.175 million dollars that are currently in the Administration's budget for 1135 Programs in fiscal year 1998.

The Papio-Missouri River Natural Resources District appreciates the opportunity to testify on the appropriations for these two programs. We thank the Committee's past support for these crucial environment enhancement programs.

LIST OF WITNESSES, COMMUNICATIONS, AND PREPARED STATEMENTS

Page

Allard, Hon. Wayne, Senator from Colorado, questions submitted by 291
Allen, David, president, Board of Harbor Commissioners, prepared statement 559
Allen, E.D., chief harbor engineer, Port of Long Beach, CA, prepared statement 555
Alm, Alvin L., Assistant Secretary for Environmental Management, Environmental Restoration and Waste Management, Department of Energy 157
Prepared statement 163
American Chemical Society, prepared statement 610
American Public Power Association, prepared statement 607
American Society for Microbiology, prepared statement 611
Armstrong, Michael D., general manager, Monterey County Water Resources Agency, prepared statement 541
Armstrong, Ron, manager, Port of Gold Beach, OR, prepared statement 707
Arnold, Bob, commissioner, Frankfort, KY, letter from 745
Arveschoug, Steve, district general manager, Southeastern Colorado Water Conservancy District, prepared statement 817

Baber, Jack, president, Reclamation District No. 1004, Colusa, CA, prepared statement 522
Baker, Kenneth, Acting Director, Office of Nonproliferation and National Security, Atomic Energy Defense Activities, Department of Energy 1
Prepared statement 20
Ballard, Lt. Gen. Joe N., Chief, U.S. Army Corps of Engineers, Corps of Engineers—Civil, Department of the Army, Department of Defense—Civil .. 343
Prepared statement 358
Barsch, Raymond, general manager, the Reclamation Board, the Resources Agency, State of California, prepared statement 468
Beasley, David M., Governor, State of South Carolina, prepared statement 762
Beck, David P., Ph.D., president, Coriell Institute of Medical Research, prepared statement 605
Beier, Keith E., council member, San Diego Area Water Reclamation Program, prepared statement 522
Bein, Robert W., chairman, Water Resources Education Committee, Orange County Business Council, prepared statement 519
Beneke, Patricia J., Assistant Secretary of Interior for Water and Science, Bureau of Reclamation, Department of the Interior 295
Prepared statement 299
Bennett, Hon. Robert F., U.S. Senator from Utah, questions submitted by..... 281, 334
Bennich, Larry, chairman, Morgan County Commission, Decatur, AL, letter from 749
Bingham, Nathaniel, habitat director, Pacific Coast Federation of Fishermen's Associations, prepared statement 697
Bletsch, Iris Z., chairman, board of directors, Clark County Regional Flood Control District, Las Vegas, NV, prepared statement 789
Blum, Carl L., deputy director, Department of Public Works, Los Angeles County, CA, prepared statement 488
Borrone, Lillian C., director, Port Commerce Department, Port Authority of New York and New Jersey, prepared statement 671
Bransford, Donald, president, Glenn-Colusa Irrigation District, prepared statement 513

Page

Brescia, Christopher J., president, Midwest Area River Coaltion 2000, prepared statement 806
Bridley, John, waterfront director, city of Santa Barbara, CA, prepared statement 532
Brinson, J. Ron, president and CEO, Port of New Orleans, New Orleans, LA, prepared statement 639
Brown, Cathie, mayor, city of Livermore, CA, prepared statements 569, 812
Brown, Lynne P., associate vice president, Government and community relations, New York University, prepared statement 603
Bryant, Douglas E., commissioner, South Carolina Department of Health and Environmental Control, prepared statement 769
Burns, Hon. Conrad, U.S. Senator from Montana, questions submitted by 96, 334, 427
Bye, Dr. Raymond E., Jr., associate vice president for research, Florida State University, prepared statement 590
Byrd, Hon. Robert C., U.S. Senator from West Virginia, questions submitted by 286, 430
Byrnes, Robert J., mayor, city of Marshall, MN, prepared statement 795

Cahill, John P., New York Department of Environmental Conservation, prepared statement 668
Campbell, Joseph L., president, Contra Costa Water District, prepared statement 543
Carey, John P., chief administrative officer, Alabama State Docks Department, Mobile, AL, prepared statement 723
Carr, William, president and chief operating officer, Jim Walter Resources, Inc., letter from 730
Cities of Arcadia and Sierra Madre, CA, prepared statement 548
City of Houston, TX, prepared statement 830
City of Huntington Beach, CA, prepared statement 545
City of Inglewood, CA, prepared statement 530
City of Miami Beach, FL, prepared statement 761
City of Newport Beach, CA, prepared statement 545
City of Sacramento, CA, prepared statement 527
Clemens, Ralph O., Jr., president, Coosa-Alabama River Improvement Association, prepared statement 716
Collins, Father T. Byron, S.J., special assistant to the President, Georgetown University, prepared statement 611
Colorado River Basin Salinity Control Forum, prepared statement 570
Columbia River Inter-Tribal Fish Commission, prepared statement 689
Combs, Larry T., county administrative officer, county of Sutter, CA, prepared statement 534
Contra Costa County Board of Supervisors, Contra Costa County, CA, prepared statement 554
Corbin, Hon. Rosemary, mayor, city of Richmond, CA, prepared statement 561
County of San Joaquin, CA, prepared statement 477
Cox, Ralph, maritime director, Massachusetts Port Authority, prepared statement 666
Crabtree, Russ, port manager, Port of Brookings Harbor, OR, prepared statement 706
Craig, Hon. Larry, U.S. Senator from Idaho, questions submitted by 99
Creswell, Robert M., consultant, Camden, AL, prepared statement 723
Crow Creek Sioux Rural Water System, prepared statement 844
Crowe, John B., executive vice president/general manager, Alabama River Pulp Company, Inc., prepared statement 722
Curry, Darrel G., vice president, Missouri River Bank Stabilization Association, prepared statement 791

Dal Gallo, Frank, president, the Reclamation Board, the Resources Agency, State of California, prepared statement 468
Dansby, Ronald C., president, inland division, Kirby Corp., letter from 729
Darnley, James H., Jr., regional vice president, Port of Mobile, prepared statement 737
Day, Thomas E., secretary, Tennessee Tombigbee Waterway Development Council, prepared statement 754
DeCosmo, James M., manager of lands, research and procurement, Southeast Timberlands, prepared statement 721

Page

Delesdernier, Capt. Mark, Jr., president, Crescent River Port Pilots Association, prepared statement 638
Department of Water and Power, city of Los Angeles, CA, prepared statement 484
Detchon, B. Reid, executive director, Biomass Energy Advocates, prepared statement 627
Domenici, Hon. Pete V., U.S. Senator from New Mexico:
Prepared statement 297
Questions submitted by 58, 261, 318, 385
Donner, Al, director, public affairs, Contra Costa Water District, prepared statement 543
Doom, Gary K., director, marketing and transportation, RECO Transportation, Inc., prepared statement 753
Dorgan, Hon. Byron, U.S. Senator from North Dakota:
Prepared statement 308
Questions submitted by 100, 339, 447
Dorlon, H.P., Jr., regional manager, sales and operations, Vulcan Materials Co., prepared statement 757
Duffy, George E., chairman, Governor's Task Force on Maritime Industry, prepared statement 629
Dunlap, Jim, board member, New Mexico Rural Water Association, prepared statement 784
DuPont, Alvin P., mayor, city of Tuscaloosa, AL, prepared statement 738
Dyer, William H., president, Tennessee Valley Towing, Inc., prepared statement 754

East Bay Municipal Utility District, prepared statement 529
Eichblatt, Robert E., city engineer, city of Huntington Beach, CA, prepared statement 535
Etchart, John, chairman, Northwest Power Planning Council, prepared statement 684
Etheredge, Roy F., senior vice president, Alabama Gas Corp., letter from 728

Falgout, Ted M., executive director, Port Fourchon, LA, prepared statement ... 652
Fannon, Jimmy, mayor, city of Columbus, MS 758
Felty, Billy J., chief engineer, St. Francis Levee District, Arkansas, prepared statement 657
Fickewirth, Walter, chairman, Placer County Water Agency, prepared statement 483
Ford, Charleigh D., Jr., executive director, Columbia-Lowndes Economic Development Association, letter from 755
Foss, Brian E., port director, Santa Cruz Port, prepared statement 549
Foster, Gov. Murphy J. "Mike", on behalf of the Louisiana Department of Transportation and Development, Public Works and Flood Control Directorate, prepared statements 659, 662
Fraser, Gale Wm., II, P.E., general manager/chief engineer, Clark County Regional Flood Control District, Las Vegas, NV, prepared statement 789
Frasher, Stephen A., senior vice president, operations, Red Circle Transport Co., letter from 735
Fratt, John, executive director, Port of Kalama, WA, prepared statement 699
Fuhrman, Maj. Gen. Russell L., Director of Civil Works, U.S. Army Corps of Engineers, Corps of Engineers—Civil, Department of the Army, Department of Defense—Civil, prepared statement 343
Fulstone, Richard, chairman, Walker River Basin Water Users Association, prepared statement 534

Gammage, Grady, Jr., president, board of directors, Central Arizona Water Conservation District, prepared statement 780
Gargano, Hon. Charles A., chairman and CEO, State of New York, Empire State Development Corporation, prepared statement 671
Geiger, Dave, Pacific Salmon Program Manger, Corps of Engineers—Civil, Department of the Army, Department of Defense, prepared statement 105
George, Bruce, manager, Kaweah Delta Water Conservation District, prepared statement 486
George, Father William L., S.J., special assistant to the President, Georgetown University, prepared statement 611
George, Randall L., president, Montgomery Area Chamber of Commerce, letter from 719

Page

Geringer, Hon. Jim, Governor, State of Wyoming, prepared statement 574
Giari, Mike, executive director, port of Redwood City, CA, prepared statement 549
Gieringer, Wallace A., chairman, Arkansas River Basin Interstate Committee, prepared statement 816
Giordano, Clyde A., parish president, Plaquemines Parish Government, Belle Chasse, LA, prepared statement 640
Godfrey, Jim, vice president, Tennessee Farmers Cooperative, letter from 744
Gorton, Hon. Slade, U.S. Senator from Washington, questions submitted by..... 278, 426
Grebbien, Virginia, general manager, West Basin Municipal Water District and Central Basin Municipal Water District, prepared statement 514
Griffin, Brig. Gen. Robert, Commander, Northwest Division, Corps of Engineers—Civil, Department of the Army, Department of Defense 105
Prepared statement 117
Groseclose, Bernard S., Jr., president and CEO, South Carolina State Ports Authority, letter from 765
Guthans, R.A., president, Midstream Fuel Service, Inc., prepared statement ... 733

Haak, Norman, chairman, Garrison Diversion Conservancy District, prepared statement 843
Hague, Jane, council chair, Metropolitan King County Council, WA, prepared statement 712
Hall, Steve, executive director, Association of California Water Agencies on behalf of the California Bay-Delta Water Coalition, prepared statement 473
Hammer, Susan, mayor, city of San Jose, CA, prepared statement 518
Hammond, Chuck, city of Fairfield, CA, prepared statement 539
Hanke, Byron, executive director, Port of Vancouver, WA, prepared statement 705
Hardy, Randall, Administrator, Bonneville Power Administration, Department of Energy 105
Prepared statement 111
Harmon, Jerry C., council member, San Diego Area Water Reclamation Program, prepared statement 522
Harrington, Joseph W., mayor, city of Valley Park, Valley Park, MO, prepared statement 805
Haun, Charles A., executive vice president, Parker Towing Co., Inc., prepared statement 754
Hayden, Channing F., Jr., president, New Orleans Steamship Association, prepared statement 634
Henry, Robert F., Jr., president, Robert F. Henry Tile Co., Inc., prepared statement 722
Herbert, John B., president, and Thomas C. Herbert, Sr., vice president, Herbert SanGravl Co.:
Letter from 750
Prepared statement 758
Hess, William H., sales manager, Parker Towing Co., Inc., letter from 748
Hewgley, James M., Jr., chairman, Arkansas River Basin Interstate Committee, prepared statement 822
Hogan, Max, mayor, city of West Jordon, UT, prepared statements..... 566, 809
Holland, G. Edison "Ed", Jr., vice president, power generation/transmission and corporate counsel, Gulf Power Co., prepared statement 730
Hollings, Hon. Ernest F., U.S. Senator from South Carolina, questions submitted by 435
Holman, Gerald H., chairman, Arkansas River Basin Interstate Committee, prepared statement 819
Holman, Gerald, senior vice president, Wichita Area Chamber of Commerce, and chairman, Arkansas River Basin Interstate Committee, prepared statement 814
Holmes, Marc, director, Partnership for the San Pablo Baylands, prepared statement 533
Hommrich, J. Richard, president, Volunteer Barge & Transport, Inc., letter from 749
Horiuchi, Randy, commissioner, Salt Lake County, UT, prepared statement ... 563
Howson, David G., vice president-general manager, river district, Martin Marietta Aggregates, prepared statement 731
Hrabovsky, Leon, superintendent, Mike Hooks, Inc., prepared statement 733

Page

Hubbard, Peter E., senior vice president, sales and marketing, Midland Enterprises, Inc., prepared statement 732

Integrated Petroleum Environmental Consortium, prepared statement 597
Iowa Department of Natural Resources, prepared statement 800, 839
Irvine Co., Newport Beach, CA, prepared statement 544
Israel, Keith, general manager, Monterey Regional Water Pollution Control Agency, prepared statement 540

James, Fob, Jr., Governor, State of Alabama, prepared statement 751
James, Sharpe, mayor, city of Newark, NJ, prepared statement 670
Jenkins, David, president, Trinity River Authority of Texas, prepared statement 828
Jollivette, Cyrus M., vice president for Government relations, University of Miami, prepared statement 601
Jones, Jan, executive director, Tennessee River Valley Association, prepared statement 740
Jordan, D.R., president, Jordan Pile Driving, Inc., prepared statement 731
Jordan, James T., director, J.T. Jordan Cotton, Inc., letter from 720
Joseph, W.F., chairman, Montgomery County Commission, Montgomery, AL, prepared statement 722

Kaiser, Charles F., president, board of directors, Twentynine Palms Water District, prepared statements 521, 547
Kansas Department of Wildlife and Parks, prepared statement 800, 839
Kendall, Donald R., Ph.D., P.E., general manager, Calleguas Municipal Water District, prepared statement 493
Keyes, John, Regional Director, Bureau of Reclamation, Pacific Northwest Division Region, prepared statement 105
Kido, Wendell H., plant manager, Sacramento Regional Wastewater Treatment Plant, prepared statement 548
Kimble, Jay L., mayor, city of Stillwater, MN, prepared statement 792
King, T. Keith, P.E., president, CEO, David Volkert & Associates, Inc., prepared statement 738
Klass, Dr. Donald L., president, Biomass Energy Research Association, prepared statement 577
Knoy, Mark K., senior vice president, marketing and operations, Marine Equipment Management Corp. [MEMCO], prepared statement 731
Kornegay, H. Thomas, executive director, Port of Houston Authority, prepared statement 836
Kriege, Daniel F., chairman, California Water Commission, prepared statement 453
Krygsman, Alexander, port director, Port of Stockton, CA, prepared statement 559

Lake Superior Authority, prepared statement 681
Lancaster, H. Martin, Assistant Secretary of the Army for Civil Works, Corps of Engineers—Civil, Department of the Army, Department of Defense—Civil 343
Prepared statement 346
Lane, Leamon, general manager, R&W Marine, Inc., prepared statement 744
LaPlace, Aubrey J., president, board of commissioners, Pontchartrain Levee District, prepared statements 657, 659
Lautenberg, Hon. Frank R., U.S. Senator from New Jersey, questions submitted by 290
Lea, Dennis R., superintendent, Valley Park School District, Valley Park, MO, letter from 805
Leavitt, Keith, ports division manager, Oregon Economic Development Department, prepared statement 692
Lee, Dr. Bernard, president, Institute of Gas Technology, prepared statement 582
Levine, John, Jr., president, Associated Branch Pilots, prepared statement 638
Lewis, William P., general manager, U.S. Steel Group, prepared statement 738
Lopez, Gaye, manager, Colusa Basin Drainage District, prepared statement 522
Los Angeles County Drainage Area Alliance, prepared statement 547
Loveless, Ralph L., executive vice president and general manager, Meriwether Lewis Electric Cooperative, letter from 747
Lowe, A. Lynn, president, Red River Valley Association, prepared statement 641

Page

Ludwig, James C., president, domestic sales, Drummond Coal Sales, Inc., prepared statement 729
Lyon, Dick, mayor, city of Oceanside, CA, prepared statements 478, 536, 537

Mackey, Hon. Karan, member, county board of supervisors, Lake County, CA, prepared statements 532, 546
Mann, Donald G., general manager, Port of Newport, OR, prepared statement 708
Marker, Sandra Y., mayor, town of Corte Madera, CA, prepared statements 538, 544
Marlowe, Howard, president, American Coastal Coalition, prepared statement 760
Martinez, Eluid L., Commissioner, Bureau of Reclamation, Department of the Interior 295
Prepared statement 302
Mauderly, Joe L., senior scientist and director of external affairs, the Lovelace Respiratory Research Institute, prepared statement 594
McCrory, Robert L., professor and director, Laboratory for Laser Energetics, University of Rochester, prepared statement 584
McDonough, Frank M., director, maritime resources, State of New Jersey, Department of Commerce and Economic Development, prepared statement 671
McKee, Frank, letter from 746
McKinzey, W.R., Jr., mayor, city of Aliceville, AL, prepared statement 757
McTaggart, John, mayor, city of Rancho Palos Verdes, CA, prepared statement 531
Meissner, Katherine Gong, city clerk, city of Stockton, CA, prepared statement 487
Melton, Carlton J., vice president, SSA Mississippi River System, letter from 755
Merrihew, Lawrence L., vice president, Regions Bank, prepared statements 736, 756
Metropolitan Water District of Southern California, prepared statement 524
Meunier, Wayne, port director, Paducah-McCracken County Riverport Authority, prepared statement 753
Miller, George, mayor, city of Tucson, AZ, prepared statement 774
Miller, Louise, council vice chair, Metropolitan King County Council, WA, prepared statement 712
Minsky, Reynold S., president, board of commissioners, Fifth Louisiana Levee District, prepared statement 665
Missouri Department of Conservation, prepared statement 800, 839
Mni Wiconi Project, South Dakota, prepared statement 851
Moore, Ted, executive director, Humphreys County E.D.C., prepared statement 756
Morgan, Sheldon L., Warrior-Tombigbee Development Association, prepared statement 724
Morton, Donald L., M.D., president, John Wayne Cancer Institute, Saint John's Hospital and Health Center, Santa Monica, CA, prepared statement 592
Murray, Hon. Patty, U.S. Senator from Washington, questions submitted by 289, 338, 436

Navajo Nation, prepared statement 788
Nebraska Game and Parks, prepared statement 800, 839
Nelson, Ron, secretary-manager, Central Oregon Irrigation District, letter from 710
Noble, Vernon A., chairman, Green Brook Flood Control Commission, prepared statement 674
Novak, Cathy, mayor, city of Morro Bay, CA, prepared statement 531

O'Brien, Terrence J., Metropolitan Water Reclamation District of Greater Chicago, prepared statement 826
Ojard, Adolph N., president, Warrior & Gulf Navigation Co., and vice chairman, maritime affairs, Mobile Area Chamber of Commerce, prepared statements 733, 739
Oltmans, Steven G., general manager, Papio-Missouri River Natural Resources District, prepared statement 857

Page

Owsley, Charles E., P.E., city engineer, Public Works Department, Kansas City, MO, prepared statement 813
Owsley, Charles E., president, Missouri-Arkansas River Basins Association, prepared statement 809

Pace, W.O., chairman, Autauga County Commission, letter from 719
Palmer, R. Barry, executive director, Association for the Development of Inland Navigation in America's Ohio Valley, prepared statement 678
Parson, Richard W., dredging program manager, Ventura Port District, prepared statement 560
Peebles, Sara, director, Industrial Board of Pickens County, AL, letter from ... 752
Perkins, Mitch, director, South Carolina State Budget and Control Board, prepared statement 770
Peterson, J.M., president, Missouri River Bank Stabilization Association, prepared statement 791
Peterson, R. Max, executive vice president, International Association of Fish and Wildlife Agencies, prepared statement 572
Pfeifle, Kurt, general manager, Mid-Dakota Rural Water System, Inc., prepared statement 847
Pflueger, Frank, president, Ag Distributors, Inc., letter from 746
Poundstone, Emery, president, Reclamation District No. 108, prepared statement 500
Price, Julian, mayor, city of Decatur, AL, letter from 748
Price, Louis E., mayor, city of Scottsboro, AL, letter from 749
Pruitt, Gary K., executive director, Greater Baton Rouge Port Commission, prepared statement 640
Public Works Department, city of Tracy, CA, prepared statement 482

Rail, David, councilmember, city of Provo, UT, prepared statements 568, 811
Reid, Hon. Harry, U.S. Senator from Nevada, questions submitted by..... 97, 336, 430
Reis, Dr. Victor, Assistant Secretary for Defense Programs, Atomic Energy Defense Activities, Department of Energy 1
Prepared statement 6
Riley, Ronnie A., vice president, Lower Mississippi Valley Flood Control Association, prepared statement 653
Rippey, Mike, chairman, board of supervisors, Napa River Flood Control Project, prepared statement 511
Riverside County Flood Control and Water Conservation District, Board of Supervisors, prepared statement 490
Robinson, C. Paul, director, Sandia National Laboratories, prepared statement 614
Romer, Gov. Roy, State of Colorado, letter from 562
Royall, Robert V., Jr., secretary, South Carolina Department of Commerce, prepared statement 766
Ruiz, Irwin A., executive director, St. Bernard Port, harbor and terminal district, Chalmette, LA, prepared statement 640
Ryerson, Penny, port manager, Port of Toledo, OR, prepared statement 680

San Diego, CA, Water Reclamation Program, prepared statement 479
San Joaquin Area Flood Control Agency, prepared statement 544
Sanchez, Sig, chair, board of directors, Santa Clara Valley Water District, prepared statement 501
Sanders, Charles J., III, president, Ingram Materials Co., letter from 747
Sanguinetti, Phillip A., president, the Anniston Star, letter from 720
Santa Ana Watershed Project Authority [SAWPA], prepared statement 523
Saunders, Andrew A., Jr., chairman, CEO, Saunders Engine Co., Inc., prepared statement 736
Seiber, Dr. James, Nevada project director, Department of Energy Experimental Program to Stimulate Competititve Research, prepared statement ... 606
Serna, Joe, Jr., mayor, city of Sacramento, CA, prepared statement 475
Sherrill, Lynn, vice president of operations, Crounse Corp., prepared statement 728
Shields, Caleb, chairman, Assiniboine and Sioux Tribes of the Fort Peck Reservation, prepared statement 711
Sims, Ron, King County executive, Metropolitan King County Council, WA, prepared statement 712

Page

Skaggs, Gary, chairman, Trinity River Steering Committee, North Central Texas Council of Governments, prepared statement 833
Skidmore, David, prepared statement 575
Smith, Harold, Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Programs, Atomic Energy Defense Activities, Department of Energy 1
Prepared statement 28
Speck, Jack P., manager, U.S. South Export Fiber Supply and Marketing, Weyerhaeuser, prepared statement 740
Standing Rock Sioux Tribe, prepared statement 841
Stapleton, Maureen A., general manager, San Diego County Water Authority, prepared statement 517
Stefenhagen, Gordon, mayor, city of Norwalk, CA, letter from 520
Stewart, Jerry L., vice president, fuel services, Southern Company Services, Inc., prepared statement 737
Svendson, Douglass W., Jr., executive director, Gulf Intracoastal Canal Association, prepared statement 830
Symington, Gov. Fife, State of Arizona, prepared statement 777

Tarasevich, David J., president and CEO, Tuscaloosa Steel, prepared statement 753
Thorne, Mike, executive director, Port of Portland, OR, prepared statement 702
Timmerman, James A., Jr., Ph.D., director, South Carolina Department of Natural Resources, prepared statement 767

Upper Mississippi River Basin Association, prepared statement 801

Vanderpool, R. Todd, president, Columbus Deposit Guaranty National Bank, prepared statement 754
Vann, James A., Jr., president and chief executive officer, Alabama Electric Cooperative, Inc., prepared statement 727
Vanselow, Glenn, executive director, Pacific Northwest Waterways Association, prepared statement 693
Velehradsky, John, Director of Engineering and Technical Services, Corps of Engineers—Civil, Department of the Army, Department of Defense, prepared statement 105
Volante, Anthony C., president, board of directors, Port Hueneme Water Agency, prepared statement 497

Waldon, Donald G., administrator, Tennessee-Tombigbee Waterway Development Authority, prepared statement 750
Wallace, Jamie D., president, Salma and Dallas County Chamber of Commerce, letter from 720
Wanamaker, James E., chief engineer, Board of Mississippi Levee Commissioners, prepared statement 654
Wayne, Michael A., chairman, John Wayne Cancer Institute, Saint John's Hospital and Health Center, Santa Monica, CA, prepared statement 592
Wehe, David K., professor, University of Michigan, prepared statement 587
Wheeler, K., vice president, Orgulf Transport Co, letter from 745
Wheeler, Ken A., president, R&W Marine, Inc., letter from 734
White, Dean, port captain, Orsouth Transport Co., letter from 734
Wicke, W. Ben, president, Elsinore Valley Municipal Water District, prepared statement 492
Willcox, George A., general manager, Chambers-Liberty Counties Navigation District, prepared statement 833
Willey, Zach, senior economist, Environmental Defense Fund, prepared statement 714
Williams, M.V., president, West Tennessee Tributaries Association, prepared statement 655
Williams, Peter, general manager, Port of St. Helens, OR, prepared statement 701
Wilson, Thomas W., supervisor, fifth district, Orange County Hall of Administration, Sana Ana, CA, prepared statement 536
Wisniewski, Stan, director, County of Los Angeles Department of Beaches and Harbors, Marina del Rey, CA, prepared statement 551
Wong, Leland, president, Los Angeles Board of Harbor Commissioners for the Port of Los Angeles, prepared statement 552

Page

Woodell, Gregory, president, American Shore and Beach Preservation Association, prepared statement 758
World Wildlife Fund, prepared statement 675

Yuba County Water Agency, prepared statement 485

Zaun, William L., chief engineer, Orange County Flood Control District, prepared statement 507
Zieschang, Ernie, president, Port of Liberty Commission, prepared statement 829
Zimmerman, Gerald R., executive director, Colorado River Board of California, Glendale, CA, prepared statement 569

SUBJECT INDEX

DEPARTMENT OF DEFENSE—CIVIL

DEPARTMENT OF THE ARMY

CORPS OF ENGINEERS—CIVIL

Page

Available resources, reprogramming of 345
Civil Works Program, level of 375
Columbia River fish mitigation, OR and WA 345
Corps division structure 356
Endangered Species Act:
    On levee maintenance and repair, impact of 372
    Waiver 374
Fiscal year 1997 emergency flood supplemental 344
Fiscal year 1998:
    Budget request 344
    Civil works program 357
Fox River Locks, WI 369
Full funding:
    Impact of 383
    On helping communities, impact of 379
Greenbrier River flood warning system 382
Idaho flooding, recent 370
Lafarge Dam, WI 369
Levee maintenance requirements 372
Marmet Lock and Dam 380
Mitigation requirements 374
New Army Corps team 368
New construction, full funding of 376
New water projects, full funding of 343
Progress, informing Congress of 377
Projects, fate of large 379
Reprogramming procedures 384
Work force size 357
WRDA 96, full funding of 378

DEPARTMENT OF ENERGY

ATOMIC ENERGY DEFENSE ACTIVITIES

Accelerated strategic computing initiative [ASCI] 5
Advanced experimental capabilities 5
Aging stockpile 48
Annual:
    Certification process 41
    Nuclear weapons stockpile 27
        Certification 32
B–61 strategic bomb, modification of the 4
Chemical and Biological Nonproliferation Program 19
Chemical and biological weapons, detection of 26
Chemical, biological, and nuclear weapons, detection of 38
Commercial light water reactor 54
Core research and advance technology programs 47
Defense programs:
    Funding 48

Page

Defense programs—Continued
Mission 3
Defense asset acquisition account 49
Device assembly facility 39, 40
DOE and DOD, relationship between 43
DOE's budget request, adequacy of 42
Dual axis radiographic hydrodynamic test facility 48
Fiscal year 1998 budget program 1
Initiatives for proliferation prevention [IPP] 18, 24
Land mines, detection of 37
Los Alamos National Laboratory 44
New Director at 44
Major accomplishments 5
Manufacturing and production capability 43
Material protection, control, and accounting .....
Nuclear 40
National Environmental Policy Act 51
DOD views of 51
National ignition facility 49
NATO expansion 41
Nonproliferation:
Activities 32
Chemical and biological weapons 24, 45
Nuclear weapons:
Dismantlement of 27
Scientists 33
Stockpile annual certification 3
Other key programs 19
Our successes and planned activities 16
Spent Fuel Program in North Korea 46
Stockpile Life Extension Program [SLEP] 3
Stockpile reliability, maintaining 33
Stockpile Stewardship and Management Program 34, 41
Subcritical tests 36
Treaty monitoring and proliferation detection 45
Tritium:
Accelerator production of 54
Production 54
Requirements 57
Supply 5
Underground nuclear testing, capability to return to 35

BONNEVILLE POWER ADMINISTRATION

Bonneville Power outside the Northwest, marketing 145
Bonneville, privatization of 139
Bonneville-related legislation 143
Challenges:
Additional 110
Future 109
Competition, legislation on 150
Competitive pressure, BPA's response to 108
Concerns, public purpose 144
Corps Northwest division location 134
Cost recovery 135
Costs:
Fish and wildlife 132
Future fish 142
Stranded 133
Exchange rates, residential 137
Federal Treasury, debt to the 132
Fish and wildlife projects, amendment on 154
Grid operator, independent 134
Hydroelectric activities, direct funding of 140
Hydropower activities, direct funding of 115
INDEGO participation 129
John Day Dam drawdown 152
John Day Reservoir drawdown 116

Page

Lower Snake River drawdown studies 116
Memorandum of agreement extension 148
Power rates, reduction of 149
Power, alternative sources of 153
Programs, fish and wildlife 106
Regional:
    Power system review 106
    Rates versus national average 146
    Review, focus of 109
Retail competition 150
Separation problems and issues 130
Stranded cost definition 151
Transmission and marketing operations, separation of 128
Transmission operations and maintenance costs 136
Water, acquisition of 138
Watershed restoration projects 147
WPPS's debt refinancing 145

ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT

Advanced mixed waste treatment facility 191
DOE's compliance documents, EPA's review of 188
Fiscal year 1998 budget 161
Formerly Utilized Sites Remedial Action Program 181, 258
General Accounting Office report 256
Ground water issue, Beatty, NV 182
Idaho agreement 192
Milestones, compliance and rolling 194
Office of Environmental Management staff 183
Pit 9 cleanup problems 190
Privatization 162, 254
    Budget and cleanup progress 227
    Oversight 182
Program challenges 161
Risk concerns and the 10-year plan 185
Rocky Flats 10-year plan 184
Technology deployment and regulatory structure 192
Technology deployment initiative 183, 191
Ten-year plan 162
Verification 254
Waste isolation pilot plant 187, 258
Waste isolation pilot project, opening of 189

DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

Animas-La Plata project 306, 311, 313
    Impacts of deauthorizing 316
Bear River and Bear Lake drainage 312
California Bay-Delta 298
    Ecosystem restoration 317
Central Utah project 298
Davils Lake, water level at 308
Fiscal year 1998:
    New starts 314
    Resources 316
Flood damage reduction 315
1998 budget request, summary of 301
Programs, other priority 298
Water development 305
Western Water Policy Review Commission 312, 317

○