

**U.S. ARMY CORPS OF ENGINEERS' BUDGET FOR
FISCAL YEAR 2001**

HEARING

BEFORE THE
SUBCOMMITTEE ON
TRANSPORTATION AND INFRASTRUCTURE
OF THE
COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
ONE HUNDRED SIXTH CONGRESS
SECOND SESSION

—————
FEBRUARY 24, 2000
—————

Printed for the use of the Committee on Environment and Public Works



U.S. GOVERNMENT PRINTING OFFICE

66-379 cc

WASHINGTON : 2001

For sale by the U.S. Government Printing Office
Superintendent of Documents, Congressional Sales Office, Washington, DC 20402

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ONE HUNDRED SIXTH CONGRESS

BOB SMITH, New Hampshire, *Chairman*

| | |
|-------------------------------|-----------------------------------|
| JOHN W. WARNER, Virginia | MAX BAUCUS, Montana |
| JAMES M. INHOFE, Oklahoma | DANIEL PATRICK MOYNIHAN, New York |
| CRAIG THOMAS, Wyoming | FRANK R. LAUTENBERG, New Jersey |
| CHRISTOPHER S. BOND, Missouri | HARRY REID, Nevada |
| GEORGE V. VOINOVICH, Ohio | BOB GRAHAM, Florida |
| MICHAEL D. CRAPO, Idaho | JOSEPH I. LIEBERMAN, Connecticut |
| ROBERT F. BENNETT, Utah | BARBARA BOXER, California |
| KAY BAILEY HUTCHISON, Texas | RON WYDEN, Oregon |
| LINCOLN CHAFEE, Rhode Island | |

DAVE CONOVER, *Staff Director*

TOM SLITER, *Minority Staff Director*

SUBCOMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

GEORGE V. VOINOVICH, Ohio, *Chairman*

| | |
|-------------------------------|-----------------------------------|
| JOHN W. WARNER, Wyoming | MAX BAUCUS, Montana |
| CHRISTOPHER S. BOND, Missouri | DANIEL PATRICK MOYNIHAN, New York |
| JAMES M. INHOFE, Oklahoma | HARRY REID, Nevada |
| CRAIG THOMAS, Wyoming | BOB GRAHAM, Florida |
| LINCOLN CHAFEE, Rhode Island | JOSEPH I. LIEBERMAN, Connecticut |

C O N T E N T S

Page

FEBRUARY 24, 2000

OPENING STATEMENTS

| | |
|--|-------|
| Bond, Hon. Christopher S., U.S. Senator from the State of Missouri | 19 |
| Articles, Corps Projects..... | 23-30 |
| Chafee, Hon. Lincoln, U.S. Senator from the State of Rhode Island | 4 |
| Smith, Hon. Bob, U.S. Senator from the State of New Hampshire | 5 |
| Voinovich, Hon. George V., U.S. Senator from the State of Ohio | 1 |
| Warner, Hon. John W., U.S. Senator from the Commonwealth of Virginia | 4 |
| Wyden, Hon. Ron, U.S. Senator from the State of Oregon | 8 |

WITNESSES

| | |
|--|----|
| Ballard, Lt. Gen. Joe N., U.S. Army, Chief Engineer and Commanding Officer, U.S. Army Corps of Engineers | 8 |
| Prepared statement | 73 |
| Westphal, Hon. Joseph, Assistant Secretary of the Army (Civil Works), U.S. Army Corps of Engineers | 6 |
| Prepared statement | 34 |
| Responses to additional questions from: | |
| Senator Baucus | 59 |
| Senator Boxer | 70 |
| Senator Graham | 68 |
| Senator Moynihan | 66 |
| Senator Smith | 41 |
| Senator Thomas | 57 |
| Senator Voinovich | 36 |
| Senator Wyden | 72 |

ADDITIONAL MATERIAL

| | |
|------------------------------------|----|
| Affidavit, Donald C. Sweeney | 74 |
|------------------------------------|----|

U.S. ARMY CORPS OF ENGINEERS' BUDGET FOR FISCAL YEAR 2001

THURSDAY, FEBRUARY 24, 2000

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:12 a.m. in room 406, Senate Dirksen Building, Hon. George V. Voinovich (chairman of the subcommittee) presiding.

Present: Senators Voinovich, Chafee, Warner, Smith, Wyden and Bond.

OPENING STATEMENT OF HON. GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

Senator VOINOVICH. Good morning.

I'd like to welcome Lieutenant General Joseph N. Ballard, the Chief Engineer and Commanding Officer of the U.S. Army Corps of Engineers and the Honorable Joseph Westphal, Assistant Secretary of the Army who will comprise our panel this morning.

Gentlemen, before we begin the hearing, I'd like to say that I'm pleased to be here today as the subcommittee chairman of the Subcommittee on Transportation and Infrastructure for my first Army Corps of Engineers budget hearing.

As Governor of Ohio, I was impressed with the work of the Corps of Engineers. In my experience, it is an agency with a high degree of integrity that does its very best to meet the needs of local and State governments and the public that they serve.

I was very pleased to work with my colleagues on the committee to seek the swift passage of the 1999 Water Resource Development Act during the last session of Congress and I'm committed to continuing the committee's efforts in this session to pass a 2000 Water Resource Development Act on time.

Authorizations are a very important first part of the process of developing and maintaining our Nation's water resources infrastructure. The equally important second part is having an adequate appropriation of funding to not only construct but also operate and maintain the projects that we authorize.

I note that the Corps has a backlog of deferred maintenance of about \$450 million. This reflects an aging national water resources infrastructure and if we continue to ignore the deterioration of our locks, dams, flood control projects and parks and recreation areas, we risk destructions in waterborne commerce, lower levels of protection against floods, reduced service to the recreating

public and environmental damage. We must assure that the operation and funding levels are adequate and efficiently allocated to priority needs.

I applaud the inclusion in this year's budget of \$27 million to begin a modernization program for Corps of Engineers recreation areas. This is a good start in addressing serious problems.

I'm also deeply concerned that the level of construction appropriations for the Corps of Engineers Water Resources Program is not sufficient to provide for the efficient development of worthy and needed projects this committee authorizes. National investment in water resources has not kept pace with our level of economic expansion.

While some of the shortfall has been appropriately met by the States, there is also a role for the Federal Government. If the steep decline in Federal investment continues, our continued economic expansion and environmental improvement will be threatened. National public water resources infrastructure investments in 1960 amounted to 1.1 percent of our gross domestic product. Today, that figure is .2 of 1 percent of GNP.

One of the results of this declining investment is that there are about 400 projects in various stages of implementation which were authorized in past WRDA bills and which have received either design or construction funding. This represents a \$30 billion backlog in Federal funds needed to complete these projects. That figure doesn't include the Federal share of the \$5.6 billion projects that we authorized in WRDA 1999. They haven't received any construction funding or design money and now we're now going to authorize WRDA 2000.

I recognize that this backlog contains a few projects or increments of projects that are not needed at this time or which currently lack non-Federal sponsors. One of the things I have talked to Joe Westphal about is that we ought to go through and look at those projects and knock some of them off that list that don't belong there for one reason or another so we have a better handle on what is out there.

The recent disclosures about segments of the inland navigation systems that are not achieving their projected benefits and allegations about less than objective analysis of the costs and benefits of the upper Mississippi River improvements highlights the need for critical review of authorized projects before any funding decisions are made.

You're going to have a chance to comment on that but when the public reads about the Red River and the money that was put into that and the ostensible benefits from river casinos, it does a great deal of harm to the effort.

Having said that, the majority of projects in the backlog competing for the limited Corps construction budget have recently been authorized based on recommendations of this committee. In other words, these projects come out of this committee.

I'm not advocating increased levels of Federal spending as a general matter. The problem is spending our Federal resources on the right things. Among the right things that are not receiving adequate funding are many of the worthy projects authorized by this committee.

We were down in Florida and talking about the Everglades and pointing out that they were very anxious to get going with the Everglades restoration. I think people were shocked when I said to them that the \$30 billion for the project—\$3 billion of which was to go in WRDA's budget for the State of Florida—where is this money going to come from?

A second area that concerns me about the Corps' budget is the seeming lack of regional and State equity in the distribution of projects. I'd like you to comment on that too. I recognize that this is a complex issue involving considerations of population, severity of water resource problems and non-Federal sponsorship. However, the State disparities are striking.

For example, my State of Ohio has less than \$100 million in Federal funding needed to complete ongoing projects, while the comparable figure for the State of Florida, as I mentioned, is almost \$3 billion. That is before any consideration of proposals in WRDA 2000.

I see that the Administration has once again proposed a new harbor services user fee and Harbor Users Fund to fund construction, operation and maintenance of our Nation's harbors and channels. The Harbor Service user's fee is proposed to replace the existing harbor maintenance tax, a portion of which the Supreme Court, as you know, has struck down, and recognizes the current tax on imports and domestic traffic is not sustainable.

I applaud the Administration's effort to support the construction and operation maintenance of the Nation's ports and waterways but the development and maintenance of our ports is essential to our national economy, including the economy of the vitally important Great Lakes Region. However, in my view, the Administration's harbor services user fee proposal will destroy the very Great Lakes maritime commerce it seeks to promote and as you know, is strongly opposed by both Great Lakes port carriers and shipper interests. There is a similar national opposition to this proposal.

I share these concerns and urge the Administration to withdraw this ill-advised proposal and to develop an acceptable replacement. I'd like to work with you on that. What are the options.

I mentioned earlier the disclosures in the January 9 and 10 articles in the Washington Post which highlighted a number of segments of the inland waterway system where barge traffic and navigation benefits have fallen far short of projections. This has been followed by allegations in a February 13 article in the Washington Post that the economic analysis of the upper Mississippi River Navigation Expansion Project has been distorted to favor a positive recommendation on lock expansion. I am very concerned about these disclosures.

We have already spent about \$2 billion in Federal funds to construct the Red River waterway and navigation benefits are a fraction of those projected. At the same time, worthy projects lack funding and are being constructed on inefficient schedules due to inadequate funding. We cannot afford anymore Red Rivers.

In authorizing projects, it is absolutely essential that the Congress be able to rely on objective and high quality analysis of project costs and benefits by the Corps of Engineers. We just can't afford to have projects coming here after Corps analysis and not

have them accurate because we rely on the Corps for information on the viability of these projects.

One of the things I'm concerned about is the Everglades project. We mentioned in the hearings that the specificity that ordinarily accompanies reports from the Corps of Engineers is not there for almost every one of those projects. I think we need an explanation. Is that a premature presentation at this time?

I want to make it clear that I'm all for the Everglades but the point is, if we we're going to get started with a massive project like that, it seems to me we need the specificity on those projects so that we can determine whether they are worthy or not to go forward.

I have noticed that Senator Chafee is here this morning. Senator, would you like to make a statement?

**OPENING STATEMENT OF HON. LINCOLN CHAFEE,
U.S. SENATOR FROM THE STATE OF RHODE ISLAND**

Senator CHAFEE. Yes, thank you.

I'd like to extend my appreciation to Secretary Westphal and General Ballard for being here to discuss their budget.

I would agree with the chair, that in general, there are some concerns about the uncertainty within the Corps relating to future growth plans and the standards by which the Corps evaluates projects. I am concerned by these allegations and hope these uncertainties can be resolved expeditiously.

In general, however, I think there is more work to be done and I am encouraged by the Corps' increased emphasis on environmental concerns. At one time, the Army Corps was perceived as an organization with little interest in environmental protection or restoration. In fact, the Everglades Project 40 years ago is what we are now undoing with the massive project before us.

Along with Challenge 21 and the Everglades Project, that perception is changing. I believe this is an excellent step and I commend the Corps for its efforts to integrate environmental concerns into traditional flood control and navigation projects. I hope this work continues.

Thank you, Mr. Chairman.

Senator VOINOVICH. Senator Warner?

**OPENING STATEMENT OF HON. JOHN W. WARNER,
U.S. SENATOR FROM THE COMMONWEALTH OF VIRGINIA**

Senator WARNER. Thank you, Mr. Chairman.

I wonder if I might indulge in a little story that I think is appropriate to the occasion.

I've been privileged to be on this committee many years and have been present when the Corps appeared. It is always a very special day and indeed a very special oversight responsibility of this committee. Now we have a new distinguished chairman to undertake this task.

There were a few of us in the Library of Congress welcoming the King of Spain and James Billington, the head of the Library, was walking down showing the magnificence of this structure and he told us this little story.

He said that Yeltsin came up to see it on his official visit and Yeltsin was overwhelmed at the magnificence of this building. Mr. Billington was explaining to him that it was built in 1897 and that the Corps of Engineers built the building and that it came in under budget. Yeltsin was overwhelmed. He said, you mean you built this building in this country without the power of a czar?

That's why it's called the Library of Congress. We're not the tzar but we do work with the Corps and others to build these magnificent structures. I know of no traditional heritage in this country in the military that has greater pride than the Corps.

Do you realize, Mr. Chairman, in the history of our country, the number one graduate of West Point has always gone into the Corps. General McArthur, when he graduated, went into the Corps. As a matter of fact, if I'm correct, you're wearing McArthur's badge of the Corps which he has given to the Corps.

General BALLARD. That's correct, sir.

Senator WARNER. The very one that he wore, so you have proud and long tradition and this committee under our new chairman and the chairman of the subcommittee are here to support you but to do it in a constructive way.

I just want to bring up one subject if I may. Last year before this committee, several members, including myself, raised issues concerning the Corps mission to continue to participate in hurricane protection projects. This is very important to a number of us in the coastal areas.

As you know, the Congress has opposed the Administration's policy to terminate Federal participation in these kinds of projects. In testimony and responses before this committee, I think Mr. Westphal, you made a commitment to resume funding for these projects if the Congress made changes to increase the non-Federal costs. I believe you also followed up in writing on this commitment.

We made these changes in response to your direction in the WRDA Act of 1999. Yet, the President's fiscal year 2000 budget did not include funding for hurricane projects. I hope in the course of your statement, Mr. Westphal, you can give us clarification on that.

I thank the distinguished chairman and thank you for the opportunity to tell you a little story.

Senator VOINOVICH. Senator Smith, we are very pleased that you're here today, the chairman of our committee.

**OPENING STATEMENT OF HON. BOB SMITH,
U.S. SENATOR FROM THE STATE OF NEW HAMPSHIRE**

Senator SMITH. Thank you, very much, Mr. Chairman, and thank you for holding this hearing this morning.

I just want to say, gentlemen, I'm here to listen to your testimony but it is the kind of press that was in the paper this morning that is troubling. If there is this lack of communication between the civilian and the military leaders on the direction of the civil works program, then this obviously is unacceptable and we need to straighten it out. The trust of the Army Corps, as Senator Warner alluded to, and the accomplishments of the Army Corps are legendary. He mentioned General McArthur as one and I feel the same way.

We want to make sure that we don't lose that trust that you have built up over the years with the public. So whatever this is, let's get on top of it and get it straightened out and quickly. I think that is very, very important because I, for one, know of the good works that have been done by the Corps over the years. We don't want to see any of that diminished by these problems.

With that, Mr. Chairman, thank you again for holding the hearing and I'm here to listen to the witnesses.

Senator VOINOVICH. Thank you, Mr. Chairman.

Secretary Westphal?

STATEMENT OF HON. JOSEPH WESTPHAL, ASSISTANT SECRETARY OF THE ARMY, CIVIL WORKS, U.S. ARMY CORPS OF ENGINEERS

Secretary WESTPHAL. Thank you, Mr. Chairman, and distinguished members of the committee.

I'm delighted to be here to talk about the President's budget priorities for 2001.

The 2001 budget is very consistent with the funding levels that were enacted by Congress in recent years and it is also very consistent with the President's overall domestic priorities.

We have come a long way in the past 2 years to reconcile these differences between the President's budget and the congressional appropriations. I believe this is a very positive step in continuing to form a good partnership on the priorities in this budget and in this program.

The President is hopeful that the budget he presented earlier this month will provide Congress a well-balanced set of priorities that address a broad range of issues facing our Nation's infrastructure, our economy and the quality of life of our citizens.

The President's budget for the Civil Works Program includes nearly \$4.1 billion for discretionary programs which is comparable to the amount appropriated in the 2000 budget. It is about \$160 million above what the President proposed last year and with the non-Federal contributions and other funding, the total funding for the Civil Works Program in 2001 will be approximately \$4.5 billion.

Like last year, a significant portion of the budget for the construction and maintenance of commercial channels and harbors is based on enactment of the harbor services user fee proposal. Last year, Congress appropriated about \$750 million from the existing Harbor Maintenance Trust Fund just for the maintenance of channels and harbors. The new user fee proposal, if enacted, would make up to \$950 million available in fiscal year 2001 for commercial harbor and channel work to proceed on an optimal schedule.

I'm very pleased to also note that there are two very important initiatives in this budget. You mentioned one of those, Mr. Chairman. It's been about 20 years since the last major efforts were made to understand and assess the complex relationships among various and often competing water resource issues. On a river basinwide basis, the Federal Government and the States, I believe, the President believes, need a comprehensive and holistic approach that considers the multijurisdictional and transnational aspects of water resources to work effectively. In that vital partnership, requirements of today's complex issues—States, tribes, counties, river

basin authorities, and other regional organizations, along with the Federal Government—can take a broad look at water resources needs.

In short, we're proposing four studies, two of which will follow your guidelines under Section 729 of the Water Resources bill of 1986 asking us to study water resource needs and river basins. The President's fiscal year 2001 budget commits \$2 million to initiate these four broad river basin studies.

Two of them, the Rio Grande Basin and the White River Basin in Arkansas, would be completed under Section 729 and the Yellowstone River Basin in Montana and Missouri, the middle Mississippi River Basin, would proceed under specific authorizations already granted in previous bills.

The other initiative is the President is proposing that we make a long and serious effort to rehabilitate our recreation facilities around the country. What most people don't realize is that the Corps of Engineers is just about the largest provider of water-based recreation in the Nation. In fact, it is the largest provider.

There are 4,340 recreation areas at more than 456 lakes in 42 States. These recreation areas host 377 million visitors annually. So the combination of heavy use, lack of routine maintenance, and changes in visitor needs has caused significant deterioration of recreation facilities, most of which were constructed in the 1960's and 1970's and are, therefore, out of date today. Twenty-seven million dollars is included in our 2001 budget to initiate this recreation modernization program.

We will replace or rehabilitate facilities at more than 2,389 recreation areas that the Corps of Engineers manages directly. We hope to upgrade facilities and install more family oriented facilities, improve general access to water-related recreation opportunities over the next five to 10 years.

Also in the President's budget is included a \$20 million request to initiate Challenge 21, which is delivering ecosystem restoration and flood hazard mitigation programs authorized last year in WRDA 1999. This initiative expands the use of nonstructural flood hazard mitigation options and restoration of riverine ecosystems to allow a more natural recession of flood waters and provide other benefits to the communities and the environment. Challenge 21 will create partnerships with communities and establish a framework for more effective coordination with key Federal and State agencies.

In fiscal year 2001, the President's proposed budget includes \$82 million to initiate new investments for a total of \$1.6 billion. Of the total, \$410 million will be financed directly by non-Federal sponsors, including lands, easements, rights of way and relocations.

In addition to the four comprehensive studies and two new programs that I noted earlier, the fiscal year 2001 budget will include four new surveys, one new special study, one new preconstruction engineering and design project and 12 new construction starts.

The President is committed to the traditional missions of improving our navigation, our transportation system, protection of our local communities from floods and other disasters and maintaining and improving the hydropower facilities across the country.

Like the Congress that in recent years has expanded the Corps' responsibilities to include restoration of aquatic and wetland ecosystems, the President is very supportive of all our efforts to move toward more significant environmental restoration efforts.

In summary, Mr. Chairman, the President's budget for 2001 for the civil works program I think is a good one. It demonstrates a commitment to civil works, a strong program of new construction, a plan to solve the constitutional problem with the existing harbor maintenance tax, a firm commitment to maintain our existing infrastructure, increased use of civil works environmental restoration expertise and authorities, and support for our ongoing missions.

With that, Mr. Chairman, I will submit a more detailed statement for the record.

Thank you for the opportunity to testify today.

Senator VOINOVICH. Senator Wyden, would you like to make a statement before General Ballard testifies?

**OPENING STATEMENT OF HON. RON WYDEN,
U.S. SENATOR FROM THE STATE OF OREGON**

Senator WYDEN. Just very briefly, and I appreciate it, Mr. Chairman. I have to be in two places at once today.

It seems to me why your hearing is so important is that events of recent days suggest to me that Members of Congress now need to be willing to commit political heresy, and that is, there has to be opposition from each of us to projects in our area that aren't cost effective and don't meet tough environmental restoration standards.

We've got a couple of projects in our area that are extremely important, the deepening of the Columbia Channel, the project in Astoria as well. I'm prepared to say that those projects, just like any others, have got to meet these tough standards with respect to the use of taxpayer money and with respect to environmental standards.

I know that effort has been a priority of yours as well and I look forward to working with you on a bipartisan basis.

Senator VOINOVICH. Thank you, Senator.
General Ballard?

**STATEMENT OF LIEUTENANT GENERAL JOE N. BALLARD, U.S.
ARMY, CHIEF ENGINEER AND COMMANDING OFFICER, U.S.
ARMY CORPS OF ENGINEERS**

General BALLARD. Mr. Chairman, distinguished members of the subcommittee, as Mr. Westphal has fully addressed our budget issues, I will limit my comments to the recent media reports on the Corps.

First of all, I want to thank you for the opportunity to comment on the recent allegations surrounding the upper Mississippi and Illinois River navigational study. These allegations are very troubling to me as they are to you. They are troubling to me because they challenge the very nature of the value of the Corps of Engineers to the Nation. That value is trust, a trust in our absolute integrity to provide to the Administration and to this Congress, water resource investment recommendations that are unbiased and technically sound.

While the widely publicized allegations and media reports attempt to erode the foundation of that trust, I am certain beyond a doubt that your trust has not been misplaced. I therefore welcome and will fully support all independent, outside investigations of the allegations and any review of our process. I will take prompt corrective actions if wrongdoing is discovered and I stand ready to make improvements to our processes if it is warranted.

I will assure you, however, that when all of the facts are in, the integrity of the Corps will be intact and you will know the trust you have traditionally placed in the Corps is well founded. Let me explain the reasons for my confidence.

First of all, I believe in the professionalism and dedication of the Corps team and I have absolutely great trust in my leaders. Additionally, our process has a series of built-in checks and multiple levels of review to ensure objectivity. These include independent technical reviews, a minimum of two formal public reviews, Washington level policy review, State and agency coordination requirements and finally, review by the executive branch in accordance with Executive Order 12322.

It is important to note that all of these reviews are yet to be conducted in the case of the upper Mississippi River and Illinois River navigation study. It is also important to remember that there are no easy, clearcut answers to the complex issues we face in this particular study. Technical experts may, and they often do, honestly disagree on the specifics. The value that the Corps brings to the process is to ensure that both sides of any technical agreement are completely analyzed and receive proper peer review, proper public review and of course, policy review.

In the particular study in question, the draft report has not yet been completed—a fact that is lost on a lot of folks—much less than undergone these series of reviews. So any allegations in this regard may be, and probably are, a bit premature. Ultimately, after a full and open debate, balanced professional judgment must enter the process.

Dealing with technical agreement is the role of our field commanders. That is what we pay them to do. They must make tough decisions often in the face of strongly held opposing views. The Corps' process ensures that all interests are heard, all interests are heard and that the final recommendations are unbiased and based on the best science available, and most importantly, in the public interest.

In our business, there is almost always at least one interest group that is opposed to some specific findings, but when all of the facts are in, I'm confident, again, in the integrity of our process and the leaders who guide that process.

In a broader perspective, we are seeking to identify unmet national water resource needs. These are based on published and documented information. Water resource development is too important to let the media set national priorities. Our role is to apply a structured, reasonable approach to identifying and quantifying the national water resource needs and through an extensive communication process with our partners, the stakeholders and other agencies and the general public, we recommend responsible alternatives for

national investment that will meet economic development and environmental needs both today and in the future.

Let me address the question of the growth of the Corps' program. It is absolutely not our intention to grow this organization in terms of manpower. In fact, over my tenure, we have consciously reduced the size of our work force, the number of offices in the Corps. What we are doing is seeking to increase our value and service to the Nation. We are identifying unmet national water resource needs that fall within the Corps mission. These needs are based on a wide variety of published and well documented information and input from the stakeholders across the Nation.

In conclusion, Mr. Chairman, I am confident that our process, our execution and the judgment of our leaders is sound and yields balanced recommendations for wise water resource investment. Our screening process for potential projects is tough. Historically, only 16 percent of the studies we begin ultimately result in a construction start. In other words, 84 percent of proposed projects are discarded by the Corps, they never make the cut.

The projects that make it through the screening process are ultimately constructed and provide a positive return to the Nation's investment. Over the last 4 years, we have pursued our mission to address the Nation's current and emerging needs in an environment of deliberate downsizing of our organization. Again, I have reduced the size of the Corps of Engineers by nearly 10 percent, while streamlining and improving the efficiency of our business processes.

I am confident that the U.S. Army Corps of Engineers is pursuing its mission with the utmost professionalism and integrity and will continue to serve this Nation well.

Again, thank you, Mr. Chairman and members of the subcommittee. This concludes my statement and I will be happy to take your questions.

Senator VOINOVICH. Thank you.

As I mentioned in my statement, there is just a tremendous backlog of projects that need to be funded. When you think of the fact that each year our appropriations for energy and water are about \$1.4 billion, those dollars are few and far between and we need to make sure they are being spent on projects that are worthy.

I must say I was a little bit surprised when I read the Post this morning and Mr. Westphal indicated that he was not aware of the slide presentation about the growth of your organization. I'd like the two of you to comment on that.

Secretary WESTPHAL. Obviously, responding to the press over a telephone about alleged documents without seeing them was difficult. Let me just say this. The Corps has internal processes they go through to look at, and I'll let General Ballard address the specifics, which address the internal needs of the Corps. Those eventually come to my office and to the Secretary, and eventually the Congress.

We have a very grassroots level for making policy. Generally speaking, as I prepare a budget, as I prepare a water resources bill, the information, the needs are addressed through the regional office of the Corps and is brought to our office. Then we make the

policy decisions in our office as to what we think is appropriate and what we don't think is appropriate.

I am not in a position at my office in the Pentagon to know everything going on in the field and to know what the needs of the country are everywhere. That has to filter up through your constituents that bring those matters to the Corps and then they filter to the Chief and to me. That is an appropriate way for things to happen.

The people who work for the Corps, about 2 percent of the employees of the Corps of Engineers are at his headquarters. Most of them are your constituents, your citizens. They live in your communities and they have a sense of what is going on out there, what they needs are and those are filtered up through a process to me.

On these particular allegations, we have been in sync on a very important principle. This is a great asset for the Nation. The U.S. Army Corps of Engineers, as Senator Warner pointed out, has been a great asset for this Nation for almost 150 years or more. I believe that and I believe that the Nation also has great needs out there, many of which are not satisfied within the budget constraints that we are all working under and also within authorities that different agencies have for the needs of the States and various parts of the country.

I believe that you have this asset, this resource and you have needs out there. To the extent that we in the Administration and you in the Congress can come together and determine whether or not those needs can be fulfilled by this institution, by this organization based on its capabilities and its expertise, I think we do that and we should continue to do that.

So we are in that process. We prepare a water resources bill to you, as we are doing this year and as we did last year, that tells you what we think from a policy standpoint are the needs out there and where we think those needs can be fulfilled.

Senator VOINOVICH. Let me ask you this, in terms of management, you are Assistant Secretary of Defense and you have responsibility. Is there a mission statement of the Administration or a policy statement as to the role of the Army Corps of Engineers and what the priorities are that kind of sends a signal to the Corps in terms of what it is they are supposed to be doing?

Secretary WESTPHAL. There's two things. There is the general orders of the Secretary of the Army which spell out my responsibilities in terms of oversight and leadership in the budget and policy area, say over the Corps of Engineers. That is one area.

The other is that we do have developed over time jointly with the Corps, not necessarily in General Ballard's tenure but over the course of many years of work, a mission, an understanding of what the Corps' mission is for the Nation. That mission continues to develop as you have seen fit to develop it in water resources bills in recent years by expanding that mission say into the environmental restoration area.

So when the Corps does a study on a project, when it does an environmental impact statement, a cost benefit study, a feasibility report, that report requires not only a technical analysis, but also a policy analysis. Does it fit the policy, does it fit the mission.

Senator VOINOVICH. Do you review those as they come up? Do you have somebody in your staff that looks over these projects as they come in to kind of give them direction or react to them?

Secretary WESTPHAL. There is a review process. Before I came on board, my predecessors delegated some of that policy review to Headquarters, Corps of Engineers. That was a function of the tremendous size and number of these reviews, the expertise he has at headquarters, combined with our ability to participate in that process. That was delegated to Headquarters, Corps of Engineers.

We do what we consider to be an ad hoc review of many of these documents, the ones that tend to be bigger and perhaps more controversial or more difficult to look at, or we have a specific interest because either a Member of Congress or someone has pointed out there are issues there. We elevate those to our office.

I have a very small office and we do require more people. There was a delegation made before I came and I have been spending quite a bit of time reviewing whether that delegation needs to remain the way it is or whether it needs to be rescinded. I have been in discussions with the Chief of Engineers about that.

There is a policy review that currently is being done at headquarters for us and then we work jointly with their people. The next step after that is that report goes to OMB, to the President. OMB then has a function of reviewing it. OMB also, in terms of staff size and ability to look at all of this, needs to get something they can have confidence in. They need to have a report reviewed by us they can be assured has all the quality checks done on it.

We work very closely with OMB as they get it and before it comes to you for an authorization and approval.

Senator VOINOVICH. I'd be interested if you have anything in writing about the process and what the procedure is in terms of how the system works.

I have some other questions and other members of the committee. Senator Chafee?

General BALLARD. Mr. Chairman, I would like an opportunity, if I might, to talk about how I see the process, just to add to what the Secretary said.

The Corps of Engineers is more than just civil works, as you know. We have a large mission not only to execute the civil works program for the Nation, but we also support the military program for DOD and we provide technical support to other agencies. So I have oversight responsibilities given to me by the full range of the Army Secretariat, not just civil works.

When we develop any project, it is not done in the back of a room in secret. On any of the policies, this is done in a very open process so that everyone is aware of it.

The allegations that appeared in the newspaper make it seem as if there is a bunch of rogue officers plotting to take over this program. That is simply not true. Everything that we do, every project that is developed, every program eventually feeds itself into a budget submission. Once that budget is approved, whether it is a series of studies or what have you, that is the way it works. It is bottom fed but it flows up through the district office, the division office, my office, eventually if it is a program initiative, to the Office of the Secretariat. If it is a new initiative that we are propos-

ing to the Administration, it then goes from the Secretary's office through OMB, through this whole policy review and eventually makes it to the President's budget.

The statements that are being played out in the newspaper that you and I read this morning, shows a general lack of understanding of how this process works. There is no way that me or any of my officers can generate a project or even a policy and execute it without the full authority of the Administration and this Congress. It just doesn't happen. I wanted to be very clear on that to sort of complete the statement if you will.

Thank you for allowing me to interject.

Senator VOINOVICH. Senator Chafee?

Senator CHAFEE. As you said in your opening statement, there is a \$30 billion backlog of projects before the Corps that haven't been appropriated. What are you doing to try and increase your revenues specifically with the Supreme Court setback? How are you going about addressing that?

Secretary WESTPHAL. The backlog is a function of both the Administration and the Congress being unable to put these projects on full funding, full capability funding. In other words, as the chairman mentioned, you have water resources bills that come every 2 years and they add more projects to the pot. The pot gets bigger but the budget is limited.

For example, when I submit my budget to the Office of Management and Budget, my budget for civil works competes with EPA's budget, Ag's budget, Commerce's NOAA budget, a good part if not all of Interior. These are huge, huge areas in which it competes.

In the past few years with the budget constraints and the budget agreements, they were working with similar caps as you here in the Congress. So everything gets slowed down. So that backlog begins to grow and grow and grow.

I said it to the chairman at the previous hearing, I said it to the chairman of the Subcommittee on Transportation and Infrastructure in the House, this is the dreaded "D" word, the deauthorization word. I fully agree that I think we need to go back and look together with you at that backlog and examine which of those projects really are never going to get built. Many of those are getting a little bit of funding to carry them through. So I think they distort the picture a little bit.

It isn't \$30 billion worth of projects by any means but there is a lot we can do to clean up the book so to speak.

Senator CHAFEE. Before my time runs out, can I just followup on the Supreme Court case. Do you have, a plan that would address the Supreme Court case? That would provide revenues.

Secretary WESTPHAL. It would continue to provide revenues to the Harbor Services Trust Fund. Right now that trust fund is growing. I don't know the exact number but I'm going to say we probably have somewhere around \$1.5 billion in that fund. It may even be more than that. That fund can be tapped to do all of the navigation O&M work, plus in the proposal we've submitted, it would also be able to be used for some construction work, for the Federal portion of the construction work. So it does help to have that. It is almost \$1 billion a year we spend in that work. That is an additional revenue source.

I believe we have developed a proposal. There is opposition to it, there is no question about it. The issue you raised, Mr. Chairman, with respect to the impact of the Great Lakes, some of the development of this proposal is being left up to rulemaking. In rulemaking we will be able to make some adjustments I hope for some of the areas where this may actually cause an adverse effect.

That is our proposal. We've laid it at the hands of the Congress. I think it is appropriate for you all to debate it, discuss it, talk to us about it, work with us on it. I will be glad to work with you, Mr. Chairman, on any changes you see necessary. If ultimately you and your constituents don't think that is the appropriate vehicle, then we have to go back and look at something else.

Senator VOINOVICH. One of the things I'd be interested in following up on is what other alternatives were there other than what you're suggesting to us.

Secretary WESTPHAL. The only other alternative that has been mentioned is using just the general revenue fund, just putting it in to compete with everything else. Again, everything else competing, as we noted a minute ago, there's a backlog. Things are not getting the appropriate amount of funding because of the competition overall in the budget. We believe this is an important area.

Senator VOINOVICH. The current situation is that you've got a lot of money in the fund but with the elimination of a portion of it, that fund will start to be depleted and if the other aspect of it is attacked, it could all be gone and you'll be faced with nothing.

Secretary WESTPHAL. That's possibly true. The fund is continuing to receive revenues from the import side of this.

Senator VOINOVICH. I understand that.

Secretary WESTPHAL. So there will still be some money in the fund but not enough to fully fund all the navigation needs of the country. That is the other reason we propose this.

We've proposed this because General Ballard can tell you, we get so many requests for more port deepening, deeper channels, bigger ships, more maintenance, more work around the country, so we see this as growing and very important to our trade posture.

Senator VOINOVICH. You've got \$1.8 billion proposed for deepening the harbor in New York and New Jersey.

Secretary WESTPHAL. Yes, sir.

Senator VOINOVICH. I just want to make one comment. General Ballard, I'm aware of the fact that you have a defense side of this. I want to tell you that last week I was in Kosovo and I want you to know that Colonel McClure has done an outstanding job there of putting up that facility. The facility is just outstanding and is a reflection of the fact that the Army cares for their men and women. I don't know if you've seen it yet, but it's an outstanding piece of work. The Corps should be very, very proud of what they have done over there.

General BALLARD. Thank you very much, sir.

Senator VOINOVICH. Senator Smith?

Senator SMITH. You can go ahead.

Senator VOINOVICH. Senator Wyden?

Senator WYDEN. I just want to ask one question.

Listening to both of you this morning suggests to me that the real key here is to come up with a better screen for determining

what is a cost effective project. If you come up with a better screen for determining what is a cost effective project, then you respond to Senator Chafee's point about the backlog and also you respond to this public sense today that special interests are driving this process.

General there is no question that there is a public process. Nobody is debating that but I can tell you a lot of people feel that the special interests are driving this public process. They look at these news stories and they say, these powerful special interests hotwire the agenda and they are able to work their will.

It seems to me that if you all will go back to the drawing board and come up with a better screen for what constitutes a cost effective project, you really make a lot of headway in two areas—one, in terms of dealing with the backlog and two, in terms of dealing with this public sense that the special interests call the shots. There is no question in my mind that these stories of recent days have really taken a toll on your credibility. Why don't we get your responses to what I'm suggesting?

Secretary WESTPHAL. If you take the first story on the Red River, I think it's very unfair because this is a project that originated back in the 1960's, I believe, when the discount rates were considerably different, when the methodology was not as stringent and very different than what we're using today. So over the course of time from the initial studies done on the Red River project to today, the methodology is quite different, much stronger.

I've not come across any of these studies that haven't been fully open, fully out there for people to review and look at. It's amazing to me how open the process is.

Senator WYDEN. You're convinced that these stories are based on outdated counts with respect to how you determine whether a project is cost effective?

Secretary WESTPHAL. I believe that particular story, that the whole development of the Red River project is an interesting study in politics. Congress was deeply involved in that, as you saw in the article; there were negotiations between Congress and the Presidents in the past administrations about what should fly and not fly. You mentioned in your opening Senator that there's a lot more to these things than simply a study made by the Corps. In the studies we're doing today, I think the methodologies are much stricter, much stronger, much more timely.

The National Academy of Sciences did last year produce a report in which they made a series of suggestions for us to reexamine the principles and guidelines by which these studies are done. That is under review in my office. We're going to be looking at that, we're going to be working with the Corps to move that to the next level and try to address those recommendations which I think many were very valid.

We have new dimensions we are adding to the look at these projects. The Corps is much more environmentally sensitive as a requirement, let alone the fact that the people that work on these projects are themselves interested in making sure they are environmentally sound. So that is built into the equation.

Senator WYDEN. General, do you want to respond?

General BALLARD. I most certainly do, sir. I want to take just a minute and show you the chart on the process but while they are putting that up, let me state that I think your concerns are well founded. We should continually look at our process. We are in the process of doing that.

We had the National Academy of Science to come in and do a rather exhaustive look at our process. They came up with a couple of findings but overall, they said that our process was excellent. We also need to note that since we have put these changes into place, the majority of the projects we have constructed returned an annual return of about 26 percent on investment each year. So we're building better projects.

The process but we are right here on the study phase. What we are doing, in spite of what you read in the newspapers, we are in the study phase of looking at a very complex system. We're trying to project what the needs for the Nation on the waterways are going to be in 2050, not an easy job. It's the first time we've ever tried to do this but there are checks and balances that go along the way.

That red chart says that we are in the final study phase to come out with a draft report in December. We have yet to even address this report. The special interest groups that you speak of, I think have a role to play. I think it is very necessary for the five Governors of those States to interject their feelings and desires on what we produce. By the same token, the environmental folks will want to have something to say as will the public.

What generated this was during the public review when we put out preliminary data a lot of folks didn't like it and a lot of folks did like it. One of the things we bring to the table is consensus building and we'll do that and produce a draft report and go through the other series of public reviews.

Each one of those arrows means that someone, either at this headquarters, out in the field, public review, agency review, has a chance to validate and comment on what we're producing, so it is a very open process. I don't think we want to change that because whatever we produce, we're producing it for the public when it talks about civil works. We just need to speed up the process.

The thing that bothers me is that we still take too long. I want to move that and I need to do that by working on our internal processes. This was projected to be a 10-year study and we'll probably get it done, but we're talking 2050, a long time out. So I share your concern, sir. I think they are on the mark and we need to take a close look and continually refine what we do but I still would like to say I think it is very necessary as we bring these projects to the Congress that we give the public an everyone a chance to comment on it. I don't back away from controversy.

Senator WYDEN. My only concern about your statement is when you talk about speeding up the process, it's also a process of speeding up rebuilding credibility because I think when I talked earlier about a Member of Congress committing political heresy which is what you do if you oppose a project in your area, and I think we need to do that if it's not cost effective, if it doesn't deal with environmental standards.

You don't want it to reach that point. In effect, there's been a breakdown if all that work has been done and then a Member of Congress says that project doesn't meet those rigorous tests, I've got to oppose it. In order to have a more preventive oriented approach, I think you all are going to have to look at some new ways not just to speed up the process, which I support, but speed up the process of rebuilding credibility so that folks come away saying this really isn't something where a handful of special interests, the powerful, hotwire the projects but it's really something that serves all the public, the economic concerns, the environmental concerns, the taxpayer concerns.

Mr. Chairman, I appreciate your giving me the time.

Senator VOINOVICH. Thank you.

Senator SMITH?

Senator SMITH. Thank you, Mr. Chairman.

In terms of the article in the Post this morning and the backlog, let me see if I can make a connection here and try to understand this.

The current backlog is about \$30 billion as I understand it of authorized projects which are not yet completed. Maybe they received the design approval or construction funding or a combination of both or either or. This does not include, however, \$5.6 billion in new projects authorized in WRDA 1999, does not include in the WRDA 2000 bill about \$1.5 billion for Everglades restoration, another \$1.8 billion for deepening New York and New Jersey harbor. The President's budget this year proposes \$1.3 billion.

When you read the Post this morning and apparently the feeling within the agency that somehow we need to grow, it is amazing to me how anyone could propose growth—if the term growth means the growth of more projects or more work on our plate—or growth maybe to get these projects done but if this is growth to create more projects, that is a heck of a lot different than growth to get the backlog done. Which is it? General Ballard?

General BALLARD. I know it is exactly the first. The proposal there is to grow the budget, not necessarily the number of folks that I have. As I stated earlier, we have reduced 10 percent. If we're going to attack the backlog, we need the funding to address that.

We're talking about deferred maintenance. Our backlog of deferred maintenance on the stuff we've already built is growing at the rate of \$100 million a year. The value of our capital stock has declined by some \$25 billion over the past 20 years. What is also important is overall spending of the Corps' Civil Works Program has declined in real terms by one-third over the last 20 years.

So when we're talking about increasing spending and investing, we're not talking new projects here; we're talking about working what we have currently there to do, that has been authorized by the Congress and what we know we have to do in order to protect the investment. Even if we were to increase by the 50 percent that was in the Washington Post this morning, we still would leave our investment level below 1970.

Senator SMITH. Let me ask you two questions on the backlog. Does each of the backlogged projects have a non-Federal sponsor to participate in the local share?

General BALLARD. Yes.

Senator SMITH. All of them do?

General BALLARD. Yes.

Senator SMITH. Are there any of those projects that, in the view of the Corps, should be deauthorized?

General BALLARD. We are currently reviewing that. We think there are some, as the Secretary mentioned earlier. We are currently screening that entire list of projects.

Senator SMITH. This is where I have trouble with what the report is in the Post. If there is a feeling in the agency that some of the projects should be deauthorized, which it seems apparent to me that would be the case if they've been backlogged that long, although I don't have the detail on that, I don't understand the movement among the so-called "military officials" of the Corps as quoted in the paper who feel otherwise, that we need to undertake new construction projects to grow. That's what the allegation says.

Let me ask this specifically and then I'll yield to my colleagues. When the term military officials is used in there, I'm assuming you're not one of those military officials?

General BALLARD. Wrong. I am one of the military officials because we only have 500 military in all of the Corps of Engineers.

Senator SMITH. Are you one of the military officials they are referring to in the Post article?

General BALLARD. I have no idea what the writer of that article meant or who he talked to.

Senator SMITH. Are you aware of the slide show that is alleged here?

General BALLARD. I'm aware of the slide show. What the slide show talks about, and I'd be very happy to address that, is an internal working document. The thing that I'm hired to do as the civil engineer for the Nation, and that is what the Corps of Engineers really is, is to address and to bring to the attention of the Congress and the Administration needs out there that currently exists. That is what that document talks about.

Let me tick off a couple of them. Fifty-percent of our lock chambers are over 50 years old and they have exceeded their economic life. We need to bring that to the attention of the Administration and the Congress and we need to address it. That's what this slide show talks about.

Senator SMITH. I understand that. I'm not being critical on that point. I guess my concern is, Mr. Westphal, you have no knowledge of the slide show. If you're the man in charge and you don't have knowledge of the fact that there are certain needs being addressed in certain presentations by the military officials, how can you run the agency? Were you aware of the slide show?

Secretary WESTPHAL. No.

General BALLARD. Sir, if I may, Secretary Westphal and I this past August, several months ago, and he will verify this, met at a meeting and we talked about these issues of backlog of maintenance, locks, et cetera. We were in preparation of preparing this when this document that we talk about, the slide show. In meeting with my commanders, we have yet to produce it and bring it to Secretary Westphal. So his not being aware of it is understandable, I had yet to present it to him. We've been working this for the last

two, 3 months and had every intention of showing that to him and building the program.

He also directed me to do an exhaustive review of our total maintenance and repair program. We addressed this concern last year to the committee. We spent a year doing that. He has yet to see that, but the way it would work is once we complete the plan, I then present it to the Secretary for his policy and his guidance on where we take it, how we build it into the budgetary process, how we present it to the Administration.

He was absolutely right when he said he hadn't seen it because I hadn't presented it to him.

Senator VOINOVICH. Senator Bond, do you have an opening statement?

**OPENING STATEMENT OF HON. CHRISTOPHER S. BOND,
U.S. SENATOR FROM THE STATE OF MISSOURI**

Senator BOND. Mr. Chairman, thank you very much. I apologize for coming late. I chaired a hearing of our Small Business Committee this morning, I was called to testify before another committee and I have yet to testify in one more committee, one more subject before lunchtime today, so I apologize for having to make a cameo appearance.

I want to make one very important point before we begin. I have had the pleasure of working with Secretary Westphal and General Ballard and both of them have good Missouri ties, but I have worked with them and I know these men. I know their capability, their integrity, their honesty, their intelligence and their commitment to the national good.

To the extent that somebody wants to challenge any of those, you can talk about the Corps program or argue with the Corps program, but if you take on the integrity of these gentlemen, you're going to have to fight me and I will do whatever is necessary to point out that these gentlemen and the men and women they represent are some of the finest public servants we have.

Having said that, I do want to make a number of points that I think are extremely important. First, if I were asking questions, I'd ask the Corps if it could send out a search party to find the Northwest Division's preferred alternative for amending the Missouri River Master Manual since it arrived at the White House Council on Environmental Quality. We should have the CEQ and Fish and Wildlife quit hiding behind the Corps and do the public hearings themselves if they are going to be the ones choosing the alternatives. I just wish that CEQ was as interested and concerned about proposals at Devil's Lake and the Garrison diversion legislation as they are about maintaining what we already have on the Missouri and Mississippi Rivers.

I do want to focus my remarks today on the importance of the Mississippi River to our region and our country's competitive position. I've worked with coastal State senators who are very, very concerned about, and rightfully so, their position with respect to coastal shipping because that is vitally important to them. River habitat, river commerce, river neighbors are vitally important to us.

There have been suggestions about special interests. Yes, I've advocated a lot for the rivers. I've fought to get money for the environmental management program on the Mississippi River. I've fought to adopt, which this committee did last year, a water resources development bill which authorized the Mississippi and Mid-Mississippi River Habitat Restoration Program that Steven Ambrose complimented yesterday as one of the great steps forward. So there are a lot of interests we are representing. Those interests are the interests of the people of the heartland.

The Mississippi River sees shipping in the magnitude of over 300 million tons annually. The locks on the upper Mississippi currently being studied were built during the Depression era with a 50-year design length. They're in poor condition because the 50 years is up. People in my region believe that as we modernize and improve the capacity for highways, we should do the same for our waterways. For the good of this Nation, I hope and I trust the Corps has the same view.

The Washington Post February 13 story quote, "How Corps Turned Doubt Into a Lock," continues the newspaper's campaign against the Corps of Engineers and its mission which is critical to the safety, environmental and economic health of my region. While it may be news to the Washington Post, between Washington, DC and California, there is a quiet, flat, productive region of the country we refer to as the midwest, where people rely on inland waterways for efficient transportation of goods and for recreational and other multiple benefits.

There live the people who feed us, who provide this Nation over \$50 billion a year in exports with nearly \$20 billion in trade surplus. Last year, a relatively minor 30-day repair project on Locks 26 and 27 forced towers to use auxiliary chambers and pushed rates up 5 to 7 cents per bushel.

While the Washington Post can dismiss this critical relationship, those of us who are interested in the future of our rural economy cannot and will not. The prosperity of the rural economy depends upon having safe and efficient, reliable transportation alternatives to help expand export markets.

Two-thirds of the corn and bean exports travel down the Mississippi and the aging locks in question are creating bottlenecks because they are beyond their original design capacity. After \$54 million in 7 years, shippers and carriers in the Mississippi River Basin want to see at least some of their barge fees put to work on the Mississippi.

I want to provide just a hint of the context of this whole discussion about modeling and the economic analysis. I cannot and will not speak to matters internal to the Corps. I am willing to express some healthy skepticism that any economist can predict the next 50 years of benefits based on variables such as crop prices, crop uses, fuel prices, export demand and the availability and cost of shipping substitutes.

Here in the District of Columbia, we watch OMB disagree with CBO on current year forecasts. When you try to forecast what is happening the agriculture community, I've seen those projections be dead wrong in 2 and even 1 year. In short, I don't trust anyone, even a proud economist at the Corps, to tell me what they think

the price of a bushel of beans will be and who will want to buy them in the year 2050, but that is what apparently is being asked of the Corps when they are told to provide an estimate of the growth in demand for barge transportation through 2050.

It should come as no surprise that there may be internal debate, a variety of outside views and a desire to err on the side of caution from leaders who have a responsibility to the people. Without taking issue with the competence of the Corps' economists, on behalf of the midwest, I am more interested in the cost of being wrong.

If we neglect the system and fail to provide sufficient capacity, the cost of lost export markets will not be hundreds of millions of dollars but billions of dollars. Given historic growth, most anticipate further growth.

Furthermore, capacity is provided not just to facilitate expected export growth, but to encourage export growth. As the Post noted, "One of the many items that must be considered is transportation alternatives to barge transportation." As one medium-size barge can carry the grain of over 800 trucks, a model shift from barge to trucks is intuitively not safe, not efficient, and not good for the environment. Think of the pollution that 800 trucks going through St. Louis, Missouri would bring to the air quality of that region.

That leaves rail. The Environmental Defense Fund and the Post may trust the tender mercy of those in the rail industry not to raise rates and delay shipments, but try suggesting that to my farmers who have had the experience showing that these giants sometimes act to the contrary.

Mr. Chairman, our farmers cannot afford a railroad monopoly. We have seen it in areas of the midwest and west and it's reminiscent of the grain piled on the ground in the old Soviet Union.

The post attacks a critical agency, its mission and the fine uniformed people who are conscientiously looking ahead to provide our region modern and efficient transportation alternatives that serve the best interests of this Nation. I know that General Anderson and Colonel Mudd care about process and our Nation and have the record to prove it.

Meanwhile, our foreign competitors are not spending \$54 million on a 5-year study and debating about whether the value of n in an abstract formula equals 1.5 or 1.2. Our foreign competitors are pressing ahead with billions of dollars of exports to seize advantage by digging, building, plowing, planting and exporting. I am going to offer the clips for the information of this committee and others.

The Post story on the economists attacked the reputation of honorable people in the Corps not for taking a narrow view, which is typically a fault of government servants, but for taking a broad one. While I understand that a review of economist complaints must take place in response to the complaint, we need to press ahead with the study. We've had 7 years of study and \$54 million and we do not yet have anything to show for it. It is time for the Corps to release the report and put it in the public domain and if they will not provide a forward-looking recommendation, then Congress will have to do it for them.

Mr. Chairman, I appreciate the chance to share my views and I can assure you that there will be a strong letter to follow. I ask

unanimous consent to submit these articles for the record detailing foreign activities in transportation.

[The prepared statement of Senator Bond follows:]

STATEMENT OF HON. CHRISTOPHER S. BOND, U.S. SENATOR FROM THE STATE OF MISSOURI

Mr. Chairman, I am chairing a hearing myself this morning, and am to present formal testimony at another hearing so I regret that I cannot attend the entirety of this hearing.

The budget for the Corps is not adequate to meet the Nation's needs and some of the "interests" that I have sought funding for are environmental interests.

These environmental programs include the Environmental Management Program, the Missouri River Fish and Wildlife Mitigation Program and the new program included by the subcommittee in the last WRDA, the Missouri and Middle Mississippi Rivers Habitat Program.

There are a number of issues I would like to raise.

Among them include asking the Corps if they could send out a search party to find the Northwest Division's preferred alternative for amending the Missouri River Master Manual since it arrived at the White House Council on Environmental Quality. We should have CEQ and Fish and Wildlife quit hiding behind the Corps and do the public hearings themselves if they are the ones choosing the alternatives. I wish CEQ were as interested in Devil's Lake and Garrison Diversion projects.

However, I'll focus my brief remarks today on the importance of the Mississippi River to our region and our country's competitive position.

The Mississippi River sees shipping in the magnitude of over 300 million tons annually.

The locks on the Upper Mississippi that are currently being studied were built during the Depression-era with a 50 year design length and are in poor condition.

The people in my region believe that as we modernize and improve the capacity for highways, we should do the same for our waterways.

For the good of this nation, I hope the Corps has the same view.

The Washington Post 2/13/00 story "How Corps Turned Doubt Into a Lock" continues the newspaper's campaign against the Corps of Engineers and its mission which is critical to the safety and economic health of my region.

While it may be news to the Post, between, Washington, DC and California, there is the quiet and flat region of the country we refer to as the Midwest where people rely on the inland waterways for efficient transportation of goods.

There live the people who feed us and who provide this nation over \$50 billion in exports with nearly \$20 billion in trade surplus. Last year, a relatively minor 30-day repair project on Locks 26 and 27 forced tows to use auxiliary chambers and pushed rates up 5-7 cents per bushel.

While the Post can dismiss this critical relationship, those of us who are interested in the future of the rural economy cannot.

The prosperity of the rural economy depends on having safe, efficient and reliable transportation alternatives to help expand export markets.

Two-thirds of the corn and bean exports travel down the Mississippi and the aging locks in question are creating bottlenecks because they are beyond their original design capacity.

After \$54 million and 7 years, shippers and carriers in the Mississippi River basin want to see at least some of their barge fuels taxes put to work on the Mississippi.

Mr. Chairman, I want to provide just a hint of context to this whole discussion about the modeling and the economic analysis.

While I cannot speak to matters internal to the Corps, I am willing to express some healthy skepticism that any economist can predict the next 50 years of benefits based on variables such as crop prices, crop uses, fuel prices, export demand and the availability and cost of shipping substitutes.

Here in the District of Columbia, we watch OMB disagree with CBO on current year forecasts.

In short, I don't trust anyone, even a proud economist at the Corps, to tell me what they think the price of a bushel of beans will be and who will want to buy them in the year 2050 but that is what we ask the Corps to do when we ask them to "provide an estimate of the growth in the demand for barge transportation through 2050."

It should come as no surprise that there may be internal debate, a variety of outside views, and a desire to err on the side of caution from leaders who have a responsibility to the people.

Without taking issue with the competence of the Corps' economists, on behalf of the Midwest, I am more interested in the cost of being wrong.

If we neglect the system and fail to provide sufficient capacity, the cost of lost export markets will not be hundreds of millions of dollars but billions of dollars.

Given historic growth, most anticipate further growth.

Furthermore, capacity is provided not just to facilitate expected export growth but to encourage export growth.

As the Post noted, one of the many items that must be considered is the transportation alternatives to barge transportation.

As one medium-sized barge tow can carry the grain of over 800 trucks, a model shift from barge to truck is intuitively not efficient, safe, or good for the environment.

That leaves rail. The Environmental Defense Fund and the Post may trust the tender mercies of those in the rail industry not to raise rates and delay shipments, but try suggesting that to farmers who have experience with these giants that speaks to the contrary.

Mr. Chairman, our farmers cannot afford a railroad monopoly. We have seen it in areas of the Midwest and West and it is reminiscent of grain piled on the ground in the old Soviet Union.

The Post attacks a critical agency, its mission, and the fine uniformed people who are conscientiously looking ahead to provide our region modern and efficient transportation alternatives that serve the best interests of this nation.

I know General Anderson and Colonel Mudd and they care about process and they care about this nation and have a record to prove it.

Meanwhile, our foreign competitors are not spending \$54 million on a 5-year-study and debating about whether the value of "n" in an abstract formula equals 1.5 or 1.2.

Our foreign competitors are pressing ahead with billions of dollars in investments to seize advantage by digging, building, plowing, planting, and exporting.

The Post story and the economist attack the reputation of honorable people in the Corps not for taking a narrow view, which is typically the fault of government servants, but for taking a broad one.

While I understand that a review of the economist's complaints must take place in response to the complaint, we need to press ahead with the study.

We have had 7 years of study and \$54 million and we do not have anything to show for it.

Its time for the Corps to release it and put it in the public domain and if they will not provide a forward-looking recommendation, then Congress should do it for them.

[From the Washington Post, February 13, 2000]

HOW CORPS TURNED DOUBT INTO A LOCK IN AGENCY WHERE THE ANSWER IS
"GROW" A QUESTIONABLE PROJECT FINDS SUPPORT

(By Michael Grunwald)

Seven years ago, the generals running the Army Corps of Engineers tapped Donald C. Sweeney II for a vital mission. The barge industry was clamoring for huge lock construction projects on the Mississippi and Illinois rivers, and Congress had put up \$50 million for the most ambitious navigation study ever. Sweeney led the study's economics team, producing work the Corps' top economist hailed as "the greatest advance we have made in . . . quite a few years."

But Sweeney didn't reach the conclusion the generals expected. After 5 years of analysis, he calculated that the costs of any major project would far outweigh the benefits.

The Corps brass then took the study away from Sweeney, launching a determined campaign to justify a billion-dollar construction plan. An affidavit by Sweeney—backed up by several Corps witnesses, along with a revealing trail of internal e-mails and other documents—suggests that senior officials directly ordered the study team to figure out a way to make lock improvements seem cost-effective. Eventually, it did.

Last week Sweeney filed a detailed request for an investigation with a Federal whistleblower agency, alleging that Corps leaders illegally manipulated the study's data to manufacture a rationale for construction. The officials deny the allegations; they say they did end up with different conclusions, but insist they only reassigned Sweeney because he was working too slowly.

Still, at a time when pressure is building for the Corps to curtail its historic penchant for massive spending on environmentally insensitive projects, this dispute has cast new light on an apparent agencywide strategy to “grow” the Corps.

From its modest origins as a Revolutionary War regiment, the Army Corps has expanded into a \$12 billion Pentagon behemoth with 37,000 employees. While it still handles engineering projects for the military, it is best known for reshaping the American landscape with locks, dams and other public works that the Corps itself acknowledges have damaged thousands of miles of rivers, many of them for barges that never arrived.

These days the Corps is portraying itself as a reformed agency, “cleaner and greener,” devoting more than one-fifth of its civil works budget to environmental restoration. But the paper trail of the Upper Mississippi study suggests the resilience of some agency traditions. Top officials ordered the study team “to develop evidence or data to support a defensible set of . . . projects,” and eventually rearranged the numbers so that they supported a case for construction. One memo candidly declared that if the economics did not “capture the need for navigation improvements, then we have to find some other way to do it.”

The agency is now poised to recommend doubling the size of five barge locks on the Mississippi above St. Louis, and maybe two more on the Illinois. Environmentalists believe the project could ravage one of America’s most fragile ecosystems, including an Upper Mississippi wildlife refuge that attracts more visitors than Yellowstone Park. And the Corps, after conducting the analysis of the project, would get to build it as well.

“It’s very sad that this study is becoming another embarrassment,” says Corps research analyst Jeffrey Marmorstein, who worked on the study before and after it was taken away from Sweeney. “Unfortunately, the management of the Corps has lost all respect for unbiased analysis.”

In fact, according to a memo summarizing a December meeting in Vicksburg, the agency’s generals have announced a goal of “growing the civil works program” for the Mississippi Valley Division—the section in charge of the Upper Mississippi study—by \$100 million a year for 5 years. “If that goal is met we are all going to be very busy,” the memo said.

“To grow the civil works program, [headquarters] and the Division have agreed to get creative,” the memo continued. “They will be looking for ways to get [studies] to ‘yes’ as fast as possible. We have been encouraged to have our study managers not take ‘no’ for an answer. The push to grow the program is comma from the top down.”

“That is the problem in black and white,” said Tim Searchinger, an Environmental Defense Fund attorney who provided the memo, along with Sweeney’s affidavit and other documentation of his complaints. “Planners at the Corps are told that no is not an acceptable answer.”

Maj. Gen. Russell Fuhrman, the deputy commander of the Corps, said the agency’s military leaders do consider themselves “advocates” for navigation projects that help move America’s freight to market. In an era of budget surpluses, he said, the Nation should invest in water transportation just as it is investing in highways and airports. But he said the Vicksburg memo misinterpreted the leadership’s goals: It wants to finish studies more quickly, not manipulate them to rubber-stamp construction projects.

“The longer it takes to get a project approved, the more it costs,” Fuhrman said. “So we want to cut through bureaucracy. But we’re not talking about dummifying up numbers.”

But environmentalists say the Upper Mississippi study—which already has cost more than Kenneth W. Starr’s investigations of President Clinton—is the best evidence yet that the Corps is still, at heart, a military-run engineering agency addicted to large projects. They say the study’s fate recalls the famous 1889 advice by Mark Twain, the sage of the Mississippi, to the young Rudyard Kipling: “Get your facts first, and then you can distort them as much as you please.”

“We’ll Have to Work on a Story Line”

$Q=t*[(a-w)/(a-e)]n$ is a pretty complex equation. But the story of what happened to it is pretty simple.

The story begins on the Mississippi and the Illinois, two of the once-rambling rivers the Corps has dammed, diked and dredged into placid barge canals over the last century. Unlike most of the 27 other Corps-constructed waterways, the Mississippi and Illinois are truly vibrant freight channels, floating tens of millions of tons of coal, oil and grain. In fact, barge tows sometimes encounter hour-long waits at the busiest locks, partly because standard 1,200-foot chains of 15 barges must pass through the 600-foot locks in two shifts.

In the transportation world, of course, time is money. So barge interests—including Washington-wired conglomerates such as ConAgra Inc., Cargill Inc. and Archer Daniels Midland Co.—helped persuade Congress to order a study of navigation improvements, hoping for locks that would accommodate 1,200-foot tows. Congress has always loved navigation projects, and the Mississippi—flowing through 10 states—has a particularly mighty political base.

To lead the federally mandated cost-benefit analysis, the Corps fumed to Sweeney, 48, an intense economist who joined the agency while still in graduate school in 1977. The bespectacled number-cruncher—and former college linebacker—has always received excellent job evaluations; despite his falling-out with Corps managers, his latest review calls him an “exceptionally competent economist” who is “highly committed to producing quality products.”

That daunting equation is one of those products.

Sweeney realized that the Corps’ old economics models had glossed over the idea that when barge costs go up, shippers may not use barges as much. So Corps studies had consistently overestimated the barge traffic that lock-and-dam projects would attract, which had helped justify elaborate river-taming efforts that often seemed unnecessary in retrospect.

Sweeney’s more complex model avoided that problem, and it was heralded as a supermodel in reviews inside and outside the Corps. “I tried as hard as I could to tear down Don’s work, but it’s brilliant,” said Marshall University economist Mark Burton, who conducted one review.

Sweeney concluded that for the next 50 years, most congestion could be relieved simply by building a few modest mooring facilities to promote “industry self-help”—the already common practice of towboat operators helping each other pass through locks. He saw no need for major construction.

In April 1998, Sweeney presented his preliminary results to Corps leaders such as Maj. Gen. Fuhrman then director of the civil works program, Maj. Gen. Phillip Anderson, Mississippi Valley division commander, and Col. James Mudd, Rock Island district commander. They were not pleased. In June just 3 months before the study’s due date, Gen. Anderson transferred all economics questions to a new panel, demoting Sweeney to a mere “adviser” to the panel. Sweeney has not lost his job, but he has filed a whistleblower complaint with the Federal Office of Special Counsel, and recently was disciplined for insubordination.

In an interview, Mudd described Sweeney as too much thought, not enough action. (Anderson was unavailable for comment.) “He did good work, don’t get me wrong,” said Mudd, a firebrand of an officer who was a key planner for Gen. Norman Schwarzkopf during the Persian Gulf War. “But there’s a point where I’ll-get-to-it-when-I-get-to-it’ won’t cut it. . . . We’ve been very careful to make sure we don’t have a foregone conclusion, to make sure we’re not cooking the books.”

Pretty soon, though, the Corps’ brass made it clear that those economics questions had a correct answer, and it wasn’t the answer Sweeney had suggested. As Sweeney’s boss in the St. Louis office pointed out in an e-mail: “It’s pretty clear to me where this is headed.”

On Sept. 3, an official laid out the panel’s new mission in an e-mail: “The team should determine an alternative . . . that appears to be the most likely to justify large-scale alternatives in the near-term.” And in a briefing on Sept. 23, Gen. Fuhrman declared even more forcefully that the “well-being of the Midwest” depended on new improvements.

“There is a need to improve the system,” project manager Dudley Hanson wrote in a memo relaying Fuhrman’s instructions to the panel. “If the demand curves, traffic growth projects and associated variables . . . do not capture the need for navigation improvements, then we have to figure out some other way to do it. . . . We need to develop a rationale for taking this relatively more subjective approach to our analytical process.”

The memo’s “Guidance” section was even more explicit about Fuhrman’s call for preordained results: “He directs that we develop evidence or data to support a defensible set of capacity enhancement projects. . . .

“The rationale should err on the high side.”

Fuhrman said in an interview that while he did have a “gut instinct” that improvements were necessary, he never ordered anyone to devise a rationale to build them. He said Hanson, who recently retired and could not be reached for comment, must have misunderstood him. But in another e-mail, Hanson had no doubt what Fuhrman meant: “This overt advocacy role, to me, is a new departure. We’ll have to work on a story line. . . . We will need corporate solidarity when we go back to our publics with this more aggressive advocacy position.”

Mudd also insisted that the Corps has “bent over backward to take a balanced approach,” and noted that barge interests have complained furiously about the agency’s deliberations. Christopher Brescia, director of MARC 2000, the main navigation lobby in the Midwest, agreed, describing the Corps as too slow and too conservative, although he did say the agency had “come a long way since they got Sweeney off the economics team.”

But Mudd added that he was “very careful not to push anyone to do near-term improvements, large-scale improvements, whatever.” In an Oct. 2 memo clarifying Fuhrman’s commands to the economics panel—a memo Mudd now says he can’t remember writing—he seemed to do just that.

“MG Fuhrman has clearly stated that the Corps has the responsibility as the Federal Government’s advocate for the inland waterway system,” he wrote. “To help in the execution of this responsibility, you will develop the economic component of the case for a recommendation that includes near-term improvements, recognizing that the Nation is better served by improvements that err on the large-scale side than by actions that err on the underdeveloped side.”

In the “N.” a Way to Say “Yes”

Then it was just a matter of figuring out how to err. And it didn’t take an economist to see that

$Q=t* [(a-w)/(a-e)]n$ was a good place to start.

The key term in all that gobbledygook was “n,” the variable that Sweeney designed to account for alternatives to barge transportation. The higher the value of “n,” the lower the benefits of improvements. Sweeney computed the main n value at 2. Burton later concurred. Under pressure from above, Richard Manguno, the new economics team leader, reluctantly reduced n to 1.5. But that was still too high to justify lock expansions, and he refused to go lower without a command.

Ultimately, according to Sweeney’s affidavit and a source who was present, he got one.

On May 5, 1999, Maj. Gen. Anderson and other Corps officials held a closed-door “economics summit” with Brescia and other industry leaders, including representatives from ConAgra, Cargill and American Commercial Barge Lines. “I think we helped them understand the sensitivity of all this,” Brescia recalled. Immediately after the meeting, an aide to Anderson asked Manguno what n would have to be to justify lock expansions.

I’ve already figured that out, interjected Mudd. It’s 1.2.

Three weeks later, Mudd called Manguno. N. he declared, was now 1.2.

The new n was apparently grounded in a basic math error, but that wasn’t the only effort by the Corps to exaggerate benefits and understate costs, Sweeney charged. There were others, and all were needed for lock expansions to pass muster.

In fact, the day after the metamorphosis of n, a Corps “study update” announced a sudden new benefit: Lock expansions would preempt the need for renovations in 2015—even though an earlier Corps analysis had found there would be no need for renovations until at least 2033. The same update also included a sudden new cutback in costs: The estimate for overruns was chopped from 35 percent to 25 percent. Earlier, Corps officials had inflated the benefits of lock expansions by assuming that tows would no longer use much self-help, Sweeney argued.

Even these changes barely pushed the predicted benefits past the costs, according to Corps documents. And the Corps is still basing its entire case for improvements on an forecast of barge growth that has proven tremendously overoptimistic over the last several years.

So on June 29 Sweeney sent out a detailed memo noting all these discrepancies, suggesting there might be “an appearance of cooking the economic books.” Another economics panel member, Wesley Walker, submitted several of his own objections the same day.

On July 4, at Mudd’s recommendation, Anderson disbanded the panel. “Thank You to everyone for helping to get the study to where it is today,” his memo declared. “The team effort has had support from many individuals. Your contributions are appreciated.”

Competing Visions of “Green”

Flash back a moment to 1929, long before Don Sweeney was born.

Maj. Charles Hall, the chief Corps engineer in the Rock Island district, had conducted an exhaustive study of a plan to build new dams on the free-flowing Upper Mississippi, and had concluded it wouldn’t justify the economic costs. His superiors had overruled him. So Hall raised a new issue in a speech at the American School of Wildlife, arguing that locks and dams would “radically change” the river’s habi-

tats. "The public can properly demand that the biological effects of a proposed movement be stated before it was adopted," Hall said.

At the time, that was a radical notion. The barge-friendly Minneapolis Journal denounced these "gratuitous opinions," wondering "why Major Hall should worry about flora and fauna at all." A Minnesota senator fumed that "it would be unfortunate and against public policy if collateral matters are permitted to interfere." Hall was quickly relieved of his duties on the study.

Seventy years later, Sweeney suffered a similar fate. So has the Corps changed? Today no one dares to suggest publicly that nature should be a "collateral matter," and top Corps officials insist it is a high priority. The agency's spending on environmental projects has quadrupled since 1992, highlighted by a \$33-million-a-year program to revive the Upper Mississippi's health. The Corps is pursuing several huge restoration projects, most notably a bold replumbing of the Florida Everglades.

At the same time, though, critics say the agency continues to pursue huge, traditional projects that could endanger wetlands and wildlife, from a navigation canal in Louisiana to a pumping station in Mississippi to port-dredging efforts all along the Atlantic coast. A coalition of environmental groups along the Gulf of Mexico recently published a report titled "Destruction by Design: The U.S. Army Corps of Engineers' Continuing Assault on America's Environment." Taxpayer groups continue to blast the agency as a money sinkhole.

There is a battle raging for the soul of the Corps, in part pitting civilian leaders who want to nudge the Corps toward a more environmental outlook against military leaders who tend to respond to traditional constituencies in the barge, farm and construction industries. The agency is an odd hybrid in the Pentagon chain of command, staffed almost entirely by civilians, run predominantly by uniformed officers. A civilian assistant secretary of the Army is supposed to set civil works policy, but most of the actual engineering and analysis gets done in 49 division and district offices commanded by military personnel.

Now the war is playing out on the Upper Mississippi. A top Corps general did order a review of the lock construction study last week, around the time Sweeney filed his affidavit. A decision is expected next month, and outside observers think it will say a lot about the future of the Corps.

Environmental groups believe the extra barges lured by lock expansions would grind up more fish uproot more vegetation, silt in more side channels and further erode shorelines. They also warn that if the Corps builds these improvements, relieving congestion at some locks, it will create new bottlenecks at other locks, fueling demands for more improvements. But even though a 1996 Corps poll found that "environmental considerations are people's biggest concerns" for the river, the agency has released preliminary data justifying seven lock expansions.

"This is a real test for the Corps: Are they going to rubber-stamp more corporate welfare, or are they going to look out for the river for a change?" asked Dean Rebuffoni, a Sierra Club leader in Minneapolis. "I hear the green rhetoric, but I don't see the action."

Fuhrman insists the Corps is trying to strike a balance. He acknowledges that the Corps wants to support the navigation system, just like the Department of Transportation wants to support the transportation system. But he says the agency is committed to the environment as well, and recognizes its "awesome responsibility" to keep its analyses on the level.

"I would be the last person to advocate an increase in capacity for the sake of increasing capacity," he said. "I think we've been an honest broker."

Controlling the Flow

Since March 1993, the Army Corps of Engineers has been studying proposed navigation improvements in the Upper Mississippi basin. The Corps is expected to recommend major expansions of five locks on the Mississippi, and perhaps the Peoria and LaGrange locks on the Illinois River. The improvements would ease barge congestion, but environmentalists fear they would damage one of America's most fragile ecosystems, including a host of wildlife refuges.

[From Feedstuffs Newspaper, December 15, 1997]

SOUTH AMERICAN TO PUSH U.S.

(By Michael Howie)

Improvements being made in the river transportation system in South America are expected to allow Brazil, Argentina and other countries in the region to reduce costs for exporting grains and other goods that compete with the U.S. In a tele-conference Dec. 9, members from the transportation task force of the National Corn Growers Assn. (NCGA) said river transportation improvements being made on the Parana River in Argentina are going to allow the cost of corn exports from the country to be reduced significantly, and unless the U.S. improves its transportation system, particularly the Mississippi River, the competitive edge the U.S. has will be reduced or eliminated.

The trip to Argentina was "a real eyeopener," said Glen Moeller, chairman of the task force. Producers in Argentina are "on par with us in terms of new technology," he said, adding that they "are serious players in the world economy" when it comes to grain exports.

So far, Argentina has dredged more than 200 miles of the Parana in order to allow Panamax vessels, which can hold 50,000 metric tons of grain, to cruise up the Rio da la Plata (near Buenos Aires, Argentina) to the Parana River to reach Rosano and even further north to Santa Fe, Argentina. Improvements are also being made more than 1,500 miles upstream from there—through Paraguay and into Brazil—that will allow barge traffic to move downstream to the ports and soybean crushing plants near Santa Fe and Rosario.

Tim Tierney, director for international operations for Latin America with the U.S. Feed Grains Council, said Panamax vessels cannot currently be filled completely at these ports because the depth of the river has only been dredged to 32 ft. (The ships are topped off further downstream.) Dredging is continuing, however, with plans to go to 36–38 ft. which would allow the ships to be completely filled in Rosario or San Martin (near Santa Fe), saving \$4–5 per metric ton in freight costs, said Tierney.

[From World Grain, May 1997]

IMPROVING BRAZIL'S INFRASTRUCTURE

MARKET LIBERALIZATIONS, ECONOMIC STABILITY FOSTER PORT, TRANSPORTATION PROJECTS TO FACILITATE SOYBEAN MOVEMENT, EXPORTS

The Brazilian private-sector, in conjunction with Brazilian Federal and state governments, is pushing ahead to develop and complete a number of infrastructure projects that will generate major transportation cost efficiencies and make Brazilian soybeans and products more competitive in international markets.

The success of the Brazilian government's economic stabilization and liberalization plan, in place since 1994, has been a major factor behind the projects. In the past 2 years, sharply lower inflation increases in gross domestic product and privatization have encouraged large investments. If economic growth and stability continue, further investments, both national and foreign, are expected to result in additional improvements to railways, waterways and port facilities.

In the past year, World Grain has published several articles related to infrastructure developments in Brazil (see March 1996, page 26; October 1996, page 46; and March 1997, pages 45 and 56). Recently, the U.S. agricultural attaché's office in Sao Paulo released a report providing additional details on existing and planned infrastructure projects.

The Northwestern Corridor project is spearheaded by Maggi Seeds and Hermasa Amazonia Navigation, S.A. This development enables soybeans grown principally in northern Mato Grosso, especially in the Sapezal and Campos de Julho municipalities, to be exported via the Madeira and Amazon Rivers instead of through the Center-South ports of Paranagua and Santos.

The attaché report described the Northwest Corridor project, also known as Projeto Hermasa as "extremely impressive in many different respects." Maggi Seeds estimates that savings on freight should be about U.S. \$30 per tonne of soybeans via this new route (see adjacent article).

This project involves investment in a road in northern Mato Grosso and in soybean silos and loading platforms at Porto Velho. Porto Velho, the capital of the state of Rondonia, is located on the Madeira River, one of Brazil's principal rivers.

Soybeans grown in northern Mato Grosso will be trucked and loaded onto barges at the port.

From there, soybeans will be shipped down the Madeira River to the port of Itacoatiara on the Amazon River. At Itacoatiara a floating port has been installed to receive both barge traffic and ocean-going vessels of 35,000 to 60,000 dwt capacity.

Soybeans that are unloaded from barges will be stored in 90,000-tonne silos until they are ready to be discharged for export. All equipment used in this project is top quality, according to the attache report.

The building of barges and pushers that will be used along this waterway is almost completed. The barges and pushers have been adapted to the difficult navigational conditions of the Amazon and Madeira rivers.

The Northwestern Corridor project was scheduled to become operational in March, and 300,000 tonnes of soybeans are expected to be shipped out through this walkway in the 1997 marketing year. As the barge and pusher fleet is expanded, Hemasa Navigation predicts that the volume of soybean exports will increase rapidly, hitting 1 million tonnes by 1999.

Outside of northern Mato Grosso, the project also will have an impact on soybean production in the states of Rondonia and Amazonas. The government of Amazonas recently announced that it will invest more than U.S. \$15 million to bolster agricultural development in the municipality of Humaitas in the southern part of Amazonas state.

Agricultural officials already are carrying out field trials with soybean varieties that can adapt to tropical climates. According to press reports, the municipality of Humaita has 100,000 hectares of arable land, although some sources place the potential at higher levels.

The Northwestern Corridor project also could enable viable soybean production in outlying Roraima, which borders Venezuela and Guyana to the north of Amazonas. Some successful soybean growers from northern Mato Grosso have visited Roraima and assert that the area contains plentiful savannah-like land.

This land is within a reasonable distance from the port of Caracarai on Rio Branco, which feeds into the Amazon River. Soybeans then would be shipped to Itacoatiara for export. For production in Roraima to become viable, infrastructure investments at Caracarai will be required, the Rio Branco will need to be mapped, and the soils would need to be limed to enable soybean plantings. (According to news reports in late March, the Ministry of Agriculture received approval for a program that would encourage commercial banks to finance the liming of agricultural land in exchange for certain concessions from the Central Bank.)

Other future developments linked to the Northwestern Corridor project include the possible construction of soybean crushing facilities in Itacoatiara and a fertilizer mixing plant in Porto Velho, whose inputs would be transported to Porto Velho as part of return barge traffic.

Given the efforts made by Maggi Seeds and Hermasa Navigation coupled with the apparent support from the state governments of Amazonas and Rondonia, the Northwestern Corridor project should be successful and will have a significant impact on the agricultural economy of northern Brazil, the attache report said.

Center Corridors. The Center-North transport corridor begins in western Mato Grosso and uses river, road, and railway systems to ship soybeans to Sao Luis, Maranhao, in the Brazilian Northeast. Soybeans first go up the Manso (Rio das Mortes) and Araguaia rivers to Xambioa in the state of Tocantins.

From there, soybeans are transported by truck and rail to the ports of Ponta da Madeira and Itaquí in Sao Luis. Some soybeans have already been exported out of Mato Grosso via this transportation route, and this route should stimulate further soybean production in western Mato Grosso, Tocantins and Maranhao.

The Center East corridor links the savannah areas of the Center-West with the ports of Vitoria and Tubarao. Investment needs to be made in the railway system to make this corridor viable, although a functioning railway already exists in part of this corridor between Tubarao and Belo Horizonte.

According to some accounts, this corridor serves an area with a potential of 13 million hectares of arable land. Currently, only 1.5 million hectares of this area are in production.

Another project involves the Parana River. This waterway project would begin in Caceres, in southwestern Mato Grosso, and would go along the Parana River to the port of Nueva Palmira in Uruguay. The project reportedly has been on paper for 10 years, but recently, its first phase—the dredging of the river bottom in Santa Fe, Argentina—was initiated.

The Patina River waterway, when it is completed, will benefit agricultural interests, especially soybean growers, in countries of the Mercosul trade pact. Some ana-

lysts believe that soybeans from the Center-West that are shipped via this waterway will benefit from transportation costs up to 30 percent less than those associated with trucking product to Paranagua.

Improvements in railway systems also need be realized to make Brazilian soy beans more competitive in the international market. The privatization of the railways will lead to major cost efficiencies, some of which will be reaped this year.

Investment in port infrastructure, especially that of Paranagua, is also critical in order to reduce the shipping delays that were so common during the 1996 season: reportedly, 30-day delays for Panamax vessels were not uncommon during May-July 1996. As more "Out-post" ports become operational, however, Paranagua and other major soybean exporting ports of the Center-South will feel less pressure.

Senator VOINOVICH. Senator, you don't feel strongly about this issue?

[Laughter.]

Senator BOND. If I were to get worked up, Mr. Chairman, it would be more compelling.

Senator VOINOVICH. Without objection, we will bring in your statement and also the newspaper articles that support it.

We would also like to have your copies of your charts submitted also, General, if you will.

I think that what we're talking about here is an issue of integrity of the Corps. I think the allegations that were made ought to be met specifically so that the public has an explanation. The memorandum, for example, that said we've got to get on this thing because certain shipping interests want it to get done, can be either an innocent or it can be something that people should be concerned about.

I can tell you, for example, we want to go forward with the Sioux Locks in my neck of the woods. About 75 percent of all the goods that come into the Great Lakes ports comes through the Sioux. There might be a memorandum out there to the Corps saying the Great Lakes shippers want this thing going and they're hot on it and if you looked at that by itself, you'd say the reason they're doing this is because of the Great Lakes shippers. The fact is it is something that is very important to them.

I think that you have to take some of these things in the context that you find them. I think it is also important that you need to be careful about some of those things that are in writing about why we're doing things and so forth so if somebody gets hold of it, then perhaps can take it out of context and make it into something conspiratorial rather than something that is rather innocent.

I think it's also important that the issue of the methodology that you're using is cleared up. Secretary Westphal, you mentioned the Red River and so forth. The bottom line on the Red River is there was a Member of Congress who really wanted to get that thing through. I think the Army Corps of Engineers recommended that go through and in spite of the Corps of Engineers, it got through because of political clout, like a lot of things around here—pork barrel, or you want to say that. You guys get blamed for it or things change.

Let's take the Everglades. Fifty years ago, the idea was to drain the swamp for development. Today, we realize how important the Everglades are to the ecology of Florida and now we're trying to make up for Corps projects in the past. No one was looking down the road to see how important this was. I think Senator Bond made the point, how do you look down the road 45 or 50 years on some

of these things. It is hard to get real specific but you do the best that you can. What the public wants is to know that it is above board. You take the best information that you have and you try to do the best job you can and make sure nobody can say the system you're using is fixed.

The other thing is that I don't object to your talking about the needs and I'd rather have it come from the bottom up, not from the top down, this is what we need. The need should come from these are the needs that need to be met. The public should know that.

There are a lot of unmet needs in this country. We talk about this budget surplus and so forth. Through my auspices, I'm going to try to find a list of all the things we need to do in this country to meet the needs of our Nation. We're talking about surpluses, tax reductions and so forth. There's a tremendous backlog of things out there that we haven't touched and we ought to have them on the table when we're making these considerations in regard to whether we're going to use the surplus for this or that or reduce taxes, or what have you so that we can make an honest evaluation of what we ought to be doing for this great Nation of ours.

The other thing is, Mr. Chairman—and you're the chairman of the main committee—I think we should set down some criteria in terms of these WRDA bills so that it doesn't become a gigantic pork barrel. This last WRDA bill, I'll tell you, it was loaded. Part of it, and I probably shouldn't say this, came from the House. Everybody wanted a project in there. We ought to have some criteria that says if it doesn't meet this criteria, we're not going to authorize it in the Senate. I don't care whether the House wants to do it or not. We'll hold up the whole thing but we can't do everything. That's part of the problem. We've got to get down to priorities.

So I just want to say to you that you've got some serious allegations here. I expect you to get back to the subcommittee and main committee and explain what you're doing. I think you've done a fairly good job today to try and explain it but we need more information. We will be submitting questions in writing to you that we'd like to have responded to.

Mr. Secretary?

Secretary WESTPHAL. Mr. Chairman, the Secretary also is very concerned about this, so he has ordered that there be an outside and independent review of the economics of this particular study on the upper Mississippi. Even before these articles, I think the Chief had already ordered a review of the study at headquarters and that's underway. He should have something on that fairly soon.

The Secretary will announce probably in the next few days who will do that outside, independent review of this particular study, but the hope is that as we look at it, an outside, independent review will show the process that was used by the Corps and will determine that appropriate methods were used.

As Senator Bond mentioned, we're not sure that economists will agree on economic assumptions about any model, but we'll get to the bottom of that. The Secretary is very concerned about it and has ordered that. He will be announcing that in the next few days I believe.

Senator VOINOVICH. Senator Smith?

Senator SMITH. Mr. Chairman, first of all, let me associate myself with your remarks regarding any pork projects that may turn up in these WRDA or any other bills. We should look at each project carefully.

The statement was made how do we look down the road 50 years? My advice is very carefully and to have the opportunity to make adjustments. I think the proposal which you're aware of, General Ballard, on the Everglades is one that does take that precaution. It's a 35 or 36-year plan. We have the opportunity to look carefully at it. If something is not working, we can stop, we can adjust and I think that's the way we should do it.

I also want to say that in response to some very direct questions, you answered them. I understand what work product is and I understand how memoranda are prepared and to me, you gave an acceptable answer to that. I just want you to know that. No one, certainly not me, is challenging your integrity. I've known you for a long time—nor your's either. I associate myself with Senator Bond's remarks on that.

The only thing is as I see this, reading the article and hearing your testimony today, and looking at the backlog, let me make an observation and deal with it however you wish.

I think when we know there is a backlog of projects and you hear terms about growth, there is justification for growth in certain areas. Senator Bond is correct. Some of the waterways and the problems we have, including the Everglades, there are problems out there and they are not in the backlog. They're in the front log, if you will. They've got to be dealt with in the future.

I think the way to deal with them is to be realistic. Let's take a look at this backlog. My information—I'm not challenging you but you might want to take another look—is that we don't have non-Federal sponsors for every one of those backlogged projects. If you could provide me or the committee with a list of that, I'd appreciate it.

Let's take a look at those because any of that \$30 billion that we can get out of there that is not justified, gives us the opportunity to discuss openly and honestly new projects that are worthwhile, whether the Missouri or the Mississippi, the Mississippi Delta or the Everglades, whatever it is. We need that kind of information before we can proceed, Senator Voinovich, with WRDA and other new projects.

You might be able to turn this into a positive. It's one news article but the way I view it, I don't think we should be afraid to say that there are new initiatives and new needs that the Army Corps might have to do. I'm sure that's true, but let's look at the old stuff that maybe is not worthwhile anymore and maybe we can get a balance in there and work this through. We'll work with you to do that.

General BALLARD. Thank you very much, sir.

Senator VOINOVICH. I appreciate your being here today and look forward to the responses to our written questions.

Mr. Chairman, I think perhaps in the next month or so it might be good to revisit this with a hearing but beyond just the issue of the credibility of the process, to get into some of the questions that we're talking about today. What's the methodology of building on

what the chairman has said about determining the projects that are on the list that may not be real.

I'd also be interested in your recommendations, both the Corps and the civilian side, on a criteria that ought to be used in judging WRDA projects. When we were in Florida and the recommendation of the Everglades plan is \$800 million worth of sewage treatment facilities that were there. I said to the EPA Director, Carol Browner, "That sounds to me like not WRDA money; it sounds more like money that would come from the State Revolving Loan Fund for sewage treatment facilities." She said, yes, that's the case. We need to differentiate some of these projects and not load them all into the WRDA bill.

In addition, I think a candid presentation about what your unmet needs are so that we can identify what they are and you're not being asked to do the impossible, and to give us a better idea of what we're talking about—\$1.3 billion a year out of energy and water. Your O&M money, I'd also like to know your thoughts about the earmarking of some of the O&M money that you use so that you don't have the discretion to do some of the things. I'd like a real candid presentation. We'll get into the process and so forth and give you a chance to talk about the allegations in the newspaper and so forth, but just as important is to really get a handle on what we're talking about here so that this committee and other Members of Congress understand just what we're confronted with in this very important area to our country.

Secretary WESTPHAL. Mr. Chairman, I couldn't agree with you more. You've hit upon a very important point and I think it's the point of all these articles, it's the reason why we have to do this independent assessment.

I personally, and I think the Administration also, do not have much of a liking for projects that come to you that don't have a completed Chief's report, you don't have the study in front of you that you can determine whether or not that project meets the need for an authorization and appropriations.

So I think the study process is critical to giving you the guidance, to giving the White House the guidance when it proposes something to you and in turn, give you the guidance that you need to make a decision on whether this project is really ready to go forward, ready to receive your authorization to go forward, ready to receive your appropriations.

There is a growing interest out there. I know the appropriators get very upset about this. There is a growing interest in getting authorizations and appropriations before things have even been studied. I think what you're saying is exactly on the money.

Making sure the integrity of the process is there, the study process, and that we can rely on these reports, both us in the policy world and you in the congressional world, is critical.

Just a little technical correction. On the Everglades, the treatment, that's actually not a State Revolving Fund issue because that's the creation of wetlands to treat this water before it goes back into the Everglades. So it is really an environmental restoration of wetlands to use them as a filter for moving the water across. The State Revolving Fund wouldn't apply there.

Senator VOINOVICH. Thank you.

We're going to leave open the record for the next couple of days for other members of the committee to submit their statements and also their questions.

We look forward to seeing you again.

[Whereupon, at 11:40 a.m., the subcommittee was adjourned, to reconvene at the call of the chair.]

[Additional statements submitted for the record follow:]

STATEMENT OF HON. JOSEPH W. WESTPHAL, ASSISTANT SECRETARY OF THE ARMY
(CIVIL WORKS)

Introduction

Mr. Chairman and members of the subcommittee: Good morning. Thank you for the opportunity to speak to you today on the fiscal year 2001 Budget and priorities for the Army Civil Works program. I am pleased to come before you again and say that the President's fiscal year 2001 Budget funds a strong program for Civil Works. The request is consistent with the funding levels enacted by the Congress in recent years and is consistent with the President's overall domestic priorities, his commitment to a balanced budget, and his goal of protecting Social Security and meeting the challenges of the 21st century.

The President's Budget for the Army Civil Works for fiscal year 2001 includes nearly \$4.1 billion for the discretionary program, comparable to the amount appropriated for the Civil Works program in fiscal year 2000, and \$160 million above last year's budget proposal.

I must emphasize that the Administration appreciates the important commitments made by our non-Federal sponsors. The commitment to cost share Army Civil Works projects demonstrates the value of the Civil Works program to our local sponsors. With the non-Federal contributions & other funding, the total funding for the Army Civil Works program in the fiscal year 2001 Budget is nearly \$4.5 billion.

Harbor Services User Fee

Like last year, a significant portion of the Civil Works budget is based on enactment of the Harbor Services User Fee proposed legislation that was transmitted to Congress last year. This new user fee would replace the Harbor Maintenance Tax (HMT), a portion of which was found unconstitutional, and would collect about the same total amount of revenue as would have been collected under the HMT prior to the Supreme Court's decision.

The new user fees would make up \$950 million of the fiscal year 2001 Budget (\$700 million for maintenance and \$250 million for construction) and would enable commercial harbor and channel work to proceed on optimal schedules.

New Initiatives and Water Resources Investments

I am very pleased to announce two new Army Civil Works initiatives in the fiscal year 2001 Budget: watershed/river basin planning and recreation modernization.

Watershed/River Basin Planning

It has been nearly 20 years since the last major effort was initiated to understand and assess the complex relationships among various water resources problems and opportunities. On a river-basin wide basis, the Federal Government needs a comprehensive approach to water resources to work effectively with States, counties, Tribes, and river basin authorities in assessing today's competing water uses.

The Army's Civil Works fiscal year 2001 Budget commits \$2 million to initiate four broad river basin studies. These studies, which the Corps will coordinate with other Federal agencies and regional stakeholders, will adopt a holistic approach and include multi-jurisdictional and trans-national considerations in resolving water resources issues. Two of these, the Rio Grande River Basin and the White River Basin in Arkansas, would proceed under the authority of section 729 of the Water Resources Development Act (WRDA) of 1986. The other two, the Yellowstone River Basin, Montana, and the Missouri and Middle Mississippi River Basins, would proceed under specific authorizations.

Recreation Modernization

The Corps of Engineers is responsible for 4,340 recreation areas at 456 lakes in 42 States. These recreation areas host 377 million visitors annually.

I am very pleased that \$27 million is included in the Civil Works fiscal year 2001 Budget to initiate the Recreation Modernization Program, which will replace or rehabilitate facilities at some of the 2,389 recreation areas that the Corps of Engi-

neers manages directly. Most of the facilities at Corps managed recreation areas were constructed in the 1960's and 1970's. The combination of heavy use, lack of routine maintenance, and changes in visitor needs has caused significant deterioration of recreation facilities and the natural resource base at some of our lakes.

The \$27 million in the fiscal year 2001 Budget is to initiate implementation of this program. We hope to modernize about one half of the Corps managed recreation areas over the next 5 to 10 years. These improvements include upgrading facilities, installing more family oriented facilities, and improving general access to water-related recreation opportunities.

Challenge 21

The fiscal year 2001 Budget includes \$20 million to initiate the Challenge 21 Riverine Ecosystem Restoration and Flood Hazard Mitigation Program authorized in WRDA 1999. This initiative expands the use of nonstructural flood hazard mitigation options and restoration of riverine ecosystems to allow natural moderation of floods and provide other benefits to communities and the environment. Challenge 21 will create partnerships with communities and create a framework for more effective coordination with key agencies to develop comprehensive flood damage reduction solutions, while restoring natural values of flood plains and wetlands.

New Water Resources Investments

The fiscal year 2001 Budget for the Army Civil Works includes \$82 million for new investments with a total cost of \$1.6 billion. Of that, \$410 million will be financed directly by non-Federal sponsors (including lands, easements, rights-of-way, and relocations). The Federal share is \$1.2 billion.

In addition to the four comprehensive studies and two new programs that I noted earlier, the fiscal year 2001 Budget includes four new surveys, one special study, one new PED start, and 12 new construction starts. The new construction starts include:

- 2 environmental restoration projects;
- 2 commercial navigation projects;
- 4 flood damage reduction projects;
- 1 shore protection of critical environmental resources;
- 2 major rehabilitations, and
- 1 deficiency correction.

Construction Program

The fiscal year 2001 Budget for the Army Civil Works Construction General program is \$1.35 billion. Of that, \$250 million would be derived from the Harbor Services Fund, and would be used to construct port related projects. As I noted before, under the Administration's Harbor Services User Fee, these projects would proceed at optimal rates. This will enhance the competitiveness of our Nation's ports and harbors.

Operation and Maintenance

Our overall funding for the Operation and Maintenance, General, account is very strong \$1.85 billion. This demonstrates the Administration's commitment to maintaining our existing infrastructure, much of which is aging and requires greater upkeep. Of the \$1.85 billion, \$700 million would be derived from the Harbor Services Fund. In addition to these funds, operation and maintenance of hydropower facilities in the Pacific Northwest will be directly financed by a transfer of approximately \$108 million from Bonneville Power Administration revenues, pursuant to an agreement signed 3 years ago.

General Investigations Account

The Budget for the Civil Works study program is \$138 million. This is comparable to last year's request and is consistent with our plan to stabilize the Civil Works budget in the future. There is a large amount of construction work waiting for funding—more than the funds we can reasonably expect in the future. The study program feeds this pipeline of construction work. This budget keeps project study funding at a lower level, in order to reduce the backlog of potential construction projects that are beyond our capacity to budget within a reasonable timeframe. Once the backlog of costly projects is worked down somewhat, then we expect to resume funding for studies at a higher level.

We believe that keeping study funding at this level is the right thing to do for our local sponsors, who expect timely construction of projects, once studies are completed and the projects are authorized.

Economy and the Environment

The Administration is committed to the traditional program of missions of improving our navigation and transportation system, protection of our local communities from floods and other disasters, and maintaining and improving hydropower facilities across the country. In addition, in recent years, the Corps' responsibilities increasingly have expanded to include the restoration of aquatic and wetland ecosystems.

Environmental programs make up about 22 percent of the fiscal year 2001 Army Civil Works budget or more than \$890 million. The environmental programs of note are in the following areas. There is \$91 million for the Columbia River Fish Mitigation program in the Pacific Northwest; \$158 million for the ongoing effort in south Florida to restore, preserve and protect the Everglades; and \$468 million for other ongoing environmental protection and restoration activities and projects. This includes \$28 million to fund our ongoing environmental restoration continuing authorities programs (Section 204, the Beneficial Uses of Dredged Materials program, Section 206, the Aquatic Ecosystem Restoration program, and Section 1135 Project Modifications for Improvements of the Environment). This funding will allow us to implement projects to create and restore aquatic and wetland habitats and to modify Civil Works projects to reduce adverse impacts on the environment.

FUSRAP, the Formerly Utilized Sites Remedial Action Program, is an environmental cleanup program that was transferred by Congress from the Department of Energy to the Army Civil Works program in the fiscal year 98 Appropriations Act. We are continuing the implementation of needed clean-up of contaminated sites. This year's budget includes \$140 million for this program. This amount will be supplemented by the approximately \$10 million that is expected in fiscal year 2001 from a Principal Responsible Party settlement reached at one site.

Regulatory Program

The Army Civil Works Regulatory Program is funded at \$125 million to ensure that we continue to provide effective and equitable regulation of the Nation's wetlands. Through the Regulatory Program, the Army Civil Works is committed to serving the public in a fair and reasonable manner while ensuring the protection of the aquatic environment required by laws and regulations. In fiscal year 1999, the Regulatory program authorized over 90,000 activities in writing, the most in any year, and over 90 percent of all actions were authorized in less than 60 days. The President's budget will ensure that this level of service is maintained. We will also continue to pursue important initiatives as part of the regulatory program. Our regional and nationwide general permits help streamline the regulatory process. We have established a full administrative appeals process that will allow the public to challenge permit decisions and jurisdiction determinations without costly, time-consuming litigation.

Under the Regulatory program, we are also active in the preparation of Special Area Management Plans ("SAMPs") to address development in environmentally sensitive areas. In particular, the Corps has been asked to chair a task force to work with the Environmental Protection Agency and Riverside County, California in the development, funding, and implementation of a SAMP for the Santa Margarita and San Jacinto watersheds.

Again this year, we are proposing to undertake a revision to the Regulatory User Fee, which has not changed since 1977.

Conclusion

In summary, the President's fiscal year 2001 budget for the Army Civil Works program is a good one. It demonstrates a commitment to Civil Works, with a strong program of new construction, a plan to solve the constitutional problem with the existing Harbor Maintenance Tax, a firm commitment to maintain our existing infrastructure, increased use of Civil Works' environmental restoration expertise, and support for our ongoing missions.

Thank you.

RESPONSES BY DR. JOSEPH WESTPHAL TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. There is a current backlog of \$30 billion in Federal funds to complete authorized Corps projects which have received design or construction funding. This does not include the Federal share of the \$5.6 billion in new projects authorized in WRDA 99 or the new projects we will be considering in WRDA 2000 which include a proposed authorization for \$1.7 billion for Everglades restoration and \$1.8 billion

for deepening New and New Jersey Harbor. Compared to this large inventory of needed projects awaiting funding, the President's proposed construction budget for the Corps program is only \$1.346 billion. This disparity between the backlog of projects awaiting construction funding and the limited construction budget highlights the need for a Corps process that rigorously examines the costs and benefits of proposed projects and assures that an objective and complete analysis is undertaken before a project is recommended for authorization and funding. That is one key reason I am so concerned that complete feasibility studies on the projects in the Everglades Comprehensive Plan are completed before those projects are authorized. We cannot afford any more Red River navigation projects where billions are expended but project benefits don't materialize. On February 13, the Washington Post made some serious allegations regarding the way the Corps of Engineers has handled the Upper Mississippi Navigation Study. Most troubling to me is the suggestions that the Corps of Engineers may be investing money in unneeded projects. What assurances do we have that your study process leads to recommending only projects that are economically justified? Second, in light of the recent allegations, what actions do you intend to take? Finally, if investigations are planned, what does this do to the Upper Mississippi Navigation Study schedule?

Response. We continue to review and improve our processes wherever we can. In 1999, the National Research Council of the National Academy of Sciences produced a report entitled "New Directions in Water Resources Planning for the U.S. Army Corps of Engineers." We accept the findings in that report as an endorsement of where we are in terms of reviewing, updating, and improving our Corps planning processes. The NRC report recommends some steps to improve our process, and we are revising and clarifying our procedures to reflect many of those recommendations.

It is important to keep in mind that of all the projects that the Corps studies, only about 16 percent ever make it to construction. In other words, our process weeds out 84 percent. Historically, all the projects that survived the rigorous process and were constructed, taken collectively have provided the Nation an average annual Return-on-Investment of over 26 percent. That is impressive by any comparison, and should give the committee a strong assurance that the Corps is doing a good job of recommending projects that are of great benefit to the Nation.

Not all of the Corps projects are justified on monetary considerations alone. Beginning with Section 1135 of the Water Resources Development Act of 1986, the Congress has given the Corps four generic authorities to plan, design, and construct ecosystem restoration projects. Those projects are justified not on economic benefits but on habitat outputs.

Additionally, our policies permit us to undertake additional work on justified projects at the request of local interests who might want a different solution than the one we recommend—such "locally preferred plans" can be built only if we determine that the solution is sound, is justified, and, if applicable, the local interests agree to pay all incremental costs above the cost of the National Economic Development plan.

The Corps study process is structured to encourage all stakeholders to provide input to our studies. I believe that the Corps does an excellent job of weighing the various—and often conflicting—inputs and arriving at appropriate recommendations. To paraphrase a Caterpillar ad from the 60's: There are no easy solutions—just intelligent choices.

Concerning the allegations of wrong-doing, it is important to reserve judgment until all of the facts are in. The Corps has completed its own preliminary review and has conducted a 15–6 investigation of the most serious charge involving alleged threats to continued employment. In addition, we will cooperate fully with your committee and other committee. The Department of the Army inquiries into the matter are ongoing, and the Secretary of the Army has contracted with the National Academy of Sciences for an independent review of the Upper Mississippi Navigation study. As stated during testimony, if corrective action is warranted, it will be taken.

The Corps' recommendation on this study is still almost a year away, and there is much outside input to be gathered, analyzed and incorporated into the decision-making process.

We don't believe the investigations will have a significant impact on the study schedule. We still have a lot of work to do, and I expect the Division and District to continue toward completion. Of course, if personnel are pulled away from their duties for any appreciable time as a result of the investigations, the study could be affected. But for now I hope that we can get through all this relatively quickly, with minimal delays.

Question 2. I note that the Administration has once again proposed a new Harbor Services User Fee to fund construction and operation and maintenance of the Na-

tion's harbors and channels. I applaud the Administration's efforts to support the construction and operation and maintenance of the Nation's ports and waterways and am pleased with the levels of funding proposed for improvement of navigation channels and the operation and maintenance of ports and waterways proposed in the Administration's Fiscal Year 2001 budget. However, I am very concerned that the Administration's Harbor Services User Fee proposal will destroy the very Great Lakes Maritime commerce it seeks to promote. The Fee proposal will result in higher transportation costs for key Great Lakes commodities such as iron ore, coal, limestone and gypsum. This Harbor Services User Fee proposal is opposed by Great Lakes and national port and carrier interests. Does the Administration have any plans to withdraw this very flawed proposal and replace it with something more workable?

Response. An interagency working group convened by the Office of Management and Budget reviewed a wide range of financing options aimed at funding harbor operations and management and development. The proposed "Harbor Services User Fee" (HSUF), based on ship size (using the net or gross tonnage), the frequency of use, and the operational characteristics of various types of vessels, emerged from this interagency examination of financing alternatives. No other option based on the "beneficiary pays" principle could be identified that would:

- ensure an appropriate link between the fee paid by users and the services provided by the Government in accord with the Supreme Court Decision March 30, 1998 (U.S. Shoe);
- not significantly alter the competitive balance between U.S. ports;
- not significantly impact the competitiveness of U.S. products;
- generate the revenue needed for harbor services; and,
- be practical to administer.

A summary of the alternatives considered and reasons for rejecting or incorporating them into the Harbor Services User Fee proposal follows below:

A Fee Based on Ship Size. The concept of ship size was identified as a measure that reasonably approximates the use of Government services and, in conjunction with frequency of use and other vessel operational and service factors, would satisfy the constitutionality test in the U.S. Shoe decision. In concept, such a fee could be based on a variety of ship measurement factors, including vessel draft (design draft or sailing draft), weight tonnage measures (i.e., displacement tonnage, lightweight tonnage, deadweight tonnage) and volumetric tonnage measures (gross tonnage, net tonnage).

Volumetric measures of ship tonnage (net and gross tonnages) were ultimately selected for incorporation into the HSUF proposal because these volumetric measures of vessel size have long been accepted at ports worldwide as a basis for fees and charges. Net and gross tonnages are known, fixed ship characteristics, which are assigned to each vessel via a Tonnage Certificate in accord with the International Convention of Tonnage Measurement of Ships. A vessel's net or gross tonnage does not change once the ship is built unless a structural modification is made, in which case the vessel is resurveyed and an amended Tonnage Certificate issued. The use of a published, fixed ship characteristic was considered important in establishing a user fee program that could be administered efficiently.

A vessel's design draft does not share the features of uniformity, consistency and acceptance provided by net or gross tonnages. The use of actual draft would be far more difficult to measure and administer, since sailing draft is an operational factor affected by ship speed, place of measurement on the ship, season of the year, salinity of the water, etc. In addition, the use of any operational characteristic would require a large data collection effort that would be subject to human error upon measurement and/or verification.

The various measures of a vessel's weight were rejected because they were either complicated by operational aspects of use (i.e., displacement tonnage, which consists of the sum of a ship's weight (lightweight) and its contents (deadweight), would also require the collection of operational data), and/or were not considered suitable for purposes of approximating the constitutional link required between benefits and use.

A Single Fee based on Cargo Tonnage. Such a fee would be based on the commodity tonnage carried on a ship regardless of what type of commodity is involved. This fee would affect the competitiveness of various commodities differently, with lower value cargoes subjected to the most significantly adverse impacts. In particular, any fee level that would generate the amount of revenue needed to pay for harbor services (harbor operation and maintenance; or harbor operation and maintenance and harbor development) nationwide would severely impact key U.S. exports such as bulk grains and coal shipments. In addition, since the fee is independent of the size

of the vessel carrying the cargo, there would not be a direct link between the primary user of the harbor services and the level of services provided.

A Fee based on Cargo Tonnage by Commodity Type. Such a fee would be based on the commodity tonnage, with the fee rate varied by commodity type. Since the type of cargo carried on a vessel does not correlate with harbor service use, there is no way to formulate a fee schedule that provides a reasonable link between the fee and the level of service provided. In addition, the development of any commodity-based tonnage fee schedule that would raise sufficient revenue while minimizing adverse impacts to U.S. competitiveness would merely yield a tonnage-based version of the current ad valorem tax. Such an alternative is not consistent with the constitutionality test outlined in U.S. Shoe.

A Combination Fee based on Vessel Size and Cargo Tonnage. The commodity-based portion of such a fee would not provide the link needed between the level of use and the services provided. However, vessel size proved to be a useful concept and was considered further in the formulation of the Harbor Services Fee Proposal.

A Combination Fee based on Vessel Size and Cargo Tonnage by Commodity Type. Again, the commodity-based portion of such a fee would not provide the link needed between the level of use and the services provided. In addition, varying the fee's cargo tonnage portion by commodity type would merely result in a tonnage-based version of the HMT.

Port Specific Fees. A fee schedule that varies by port or other geographic criteria would clearly upset the existing competitive balance between U.S. ports, and would also likely adversely impact the competitiveness of key U.S. exports. Such an approach was considered to violate the "Port Preference" clause of the U.S. Constitution (Article 1, Section 9, Clause 6).

A Fee based on Vessel Type. It was recognized that different classes of vessels might have very different operating practices and service demands, and that such considerations were important in approximating the link between a user fee and the services provided by the Government. Therefore, this factor was incorporated into the formulation of the HSUF concept.

A Tax on Transportation Fuels. A variety of fuel tax alternatives were considered under the rationale that the transportation system in part or as a whole benefits from the Government's harbor services. Fuel taxes are applied to transportation modes throughout the U.S., and the collection and administration of a fuel tax was considered feasible. The alternatives considered ranged from a fuel tax on marine vessels only to a fuel tax on intermodal freight transportation (including marine vessels, freight trains and trucks), and, ultimately a fuel tax on all transportation modes (including non-freight, i.e., passenger transport, including automobiles).

The marine vessel only alternative was considered to provide the most direct link between the benefits and services harbor users receive, but the resulting tax level was considered significant enough to disrupt the U.S. bunker fuel industry. The tax levels of all of the other alternatives, except the "across-the-board" fuel tax, also proved to be significant in terms of the impact to U.S. competitiveness. Although an "across-the-board" fuel tax would result in the most modest tax level (less than 0.5 cents per gallon), the inclusive nature of a tax which would also be applied to fuels for passenger vehicles was not a viable alternative.

Port Financing of Harbor Services. Alternatives whereby the Federal Government either reduces or eliminates its financing role for harbor services were also considered. Options ranged from complete divestment of harbor service financing to the various ports, to the cost-sharing of harbor operation and maintenance services between the Federal Government and the ports. The latter alternative could be based on cost-sharing formulas consistent with those enacted for harbor development projects.

Inherent in such alternatives was the expectation that the individual ports who do not currently have the ability to pay for harbor services would have to enact their own set of port fees or harbor charges to finance harbor services. Ultimately, this would likely result in a vast range of different non-Federal port specific fees at ports across the nation. For that reason, this option was considered to be fraught with the many problems attributed to the "Port Specific Fees" alternative discussed above: it would upset the existing competitive balance between U.S. ports, while also adversely impacting the flow of U.S. exports and imports.

The Administration does not plan to withdraw the Harbor Services User Fee legislative proposal since it represents the best of all of the wide range of alternatives considered.

With respect to your comments of the effects of the HSUF on Great Lakes navigation interests, our analysis of the Administration's proposal on the HSUF is as follows:

With respect to domestic trade, Great Lakes voyages were examined for possible shifts of commodity flows to alternate modes of transportation such as rail because of increases in waterborne transportation costs from the HSUF. Overall, enactment of the proposed HSUF would increase the operating expenses of Great Lakes carriers with vessels larger than 3,000 gross tons (GT), or cause a small increase in costs to the shippers if passed on by the vessel operators. Vessels smaller than 3,000 GT and passenger ferries would benefit from the HSUF since their cargoes would no longer be subject to the Harbor Maintenance Tax (HMT).

Any cost increases for the larger vessels (ranging from \$0.01 to \$0.04 per ton for dry bulk commodities) are very small compared to present Great Lakes shipping rates. Overall, such increases do not appear large enough to cause significant modal shifts from the current environment.

Some movements of iron ore on the Great Lakes appears to be currently moving at negative transportation cost savings compared to rail. Although the replacement of the HMT with the HSUF would only increase the waterborne transportation cost of iron ore about a penny per ton, the portion of this trade already costing more than rail could be affected.

Question 3. The National Association of Counties charges that the national wetlands permitting change proposed by the Army Corps of Engineers will undermine county government's ability to provide basic services and cost taxpayers an additional \$300 million a year. They further add if implemented it would add layers of regulatory bureaucracy at significant costs to counties. Their analysis concludes that proposed changes to Nationwide Permit 26 (NWP 26) will increase the average time needed to obtain permits and cost the Corps about \$100,000 per acre to protect wetlands. Would you please respond to this charge?

Response. As required by the Energy and Water Development Appropriations Act, 2000, the Corps conducted a study of the workload and compliance costs of the NWPs proposed in the July 21, 1999, Federal Register notice. The report for this study was finalized in January 2000. The Corps report indicates that the direct costs to the regulated public would be \$46 million per year. This report also examined the workload and compliance costs of a ½ acre alternate replacement NWP package that is similar to the new NWPs published in the March 9, 2000, Federal Register notice. The ½ acre alternative replacement NWP package would result in direct compliance costs that are 30 percent less than the \$46 million in direct compliance costs that would be incurred by permit applicants due to the July 21, 1999, proposal. Therefore, the alternate replacement NWP package would result in \$34 million in direct compliance costs incurred by permit applicants.

The Corps has not done a detailed analysis of the differences between the Corps study and the study conducted by the National Association of Counties (NAC). However, one clear difference does stand out. The NAC report interviewed applicants for their study, while the Corps looked at actual data from fiscal year 98 and analyzed all the data, as well as interviews with the Corps field offices. One difference between these two approaches is that the Corps analysis includes consideration of "mom and pop" standard individual permit applicants, which typically take less time and cost less money for the applicant and the Corps to process. Thus, we would assert that the private sector report errors on the high side because of these different approaches.

The Corps disagrees that the new and modified NWPs will add layers of regulatory bureaucracy that will impose significant costs to counties. The new and modified NWPs do not require additional reviews or approvals from other agencies. Only the Corps determines whether or not a particular activity qualifies for authorization by NWP. Although some activities that were previously authorized by NWPs may not qualify for authorization under the new and modified NWPs (and therefore require standard individual permits), there are likely to be additional costs imposed by counties to obtain standard individual permits. As indicated above, the Corps estimates that the additional costs incurred by permit applicants would be \$34 million per year annually.

Question 4. The fiscal year 2001 Corps budget contains construction funding for \$135 million worth of Everglades restoration projects. On top of this ongoing program, we are going to be asked to consider approval of a Comprehensive Plan for Everglades restoration of almost \$8 billion along with authorization of a first phase of projects to implement this plan of about \$1.7 billion. How does the Administration intend to fund this massive undertaking without seriously impacting the implementation of other worthy Corps projects nationwide?

Response. We believe that, with the authorization of this critical and necessary work to correct the problems found today in the Everglades, the Administration and Congress will provide the necessary funding level associated with this effort, so that

we can move forward with the solution without seriously impacting on the implementation of the rest of the program.

Question 5. Articles in the Washington Post and other newspapers imply that there is an apparent effort by the Corps of Engineers' leadership to "grow" your organization and it is this desire that leads to finding an economic justifiable rationale for projects at any cost. Will you comment on that?

Response. Neither the Army nor its Corps of Engineers is entertaining any plans to increase the size of the Corps work force. However, there is much to be done and, because of its ability to vary the proportions of planning and design done in-house and by contract, respectively, and because all construction work is accomplished by contract, the Corps has the capability to expand its program somewhat without expanding its work force.

Based on our assessment of the Nation's current water and related land resources needs, we feel strongly that the Nation faces significant and demanding challenges in dealing with those needs, particularly navigation, flood damage prevention and environmental restoration. We also know that the Corps has many unique assets from which to draft in tackling those challenges. Moreover, as mentioned elsewhere, we have a substantial backlog of construction, both ongoing and not yet started, a growing maintenance backlog.

Question 6. Why is Assateague Island the only new Corps proposed shore protection project to be included in the Corps fiscal year 2001 budget? Last year Dr. Westphal, when you appeared before this committee, you had indicated that if the WRDA 1999 bill changed the cost share for shore protection, then the budget would include additional projects. The cost sharing was changed in WRDA 1999 and yet new projects have not been included in the budget.

Response. Assateague Island, Maryland is a construction new start in fiscal year 2001, bringing the total budgeted shore protection projects to 18 and \$54.6 million. This project will protect the Assateague Island National Seashore, which is at risk of being breached due to the interruption of natural sand transport by the jetties at Ocean City Inlet. Construction of the navigation channel destabilized the natural transport of sand at Assateague Island, resulting in the degradation of 265 acres of benthic habitat. Subsequent construction of jetties to alleviate this problem resulted in starving the sand transport at the northern end of the island. The island is now at severe risk of breaching, which would result in adverse physical, biological and economic impacts in the area and threaten the habitat of several endangered species such as the piping plover. The Administration's policy on shore protection projects remains unchanged from prior years because WRDA 1999 did not go far enough in changing the cost sharing for periodic nourishment of shore protection projects.

Question 7a. What is the total amount of contracts entered into by the U.S. Army Corps of Engineers on behalf of District of Columbia Public Schools?

Response. The total amount of contracts entered into on behalf of the DC Public Schools is \$48 million. In addition, the Corps has provided management assistance for \$42 million in construction contracts awarded by the District of Columbia.

Question 7b. How much has the Corps of Engineers been paid for the services associated with this contract amount?

Response. The Corps of Engineers has received a total of \$8.8 million to date for the contract management services associated with the Capital Improvements Program. In addition, the Corps received \$400,000 to assist the DC Public Schools Facilities Management Office in organizational development.

Question 7c. Do you anticipate increasing involvement in public school construction management?

Response. The Corps will evaluate future requests for assistance and will adhere to OMB Circular A-97 requirements in its recommendations to the Army on future requests for assistance of this kind.

RESPONSES BY DR. JOSEPH WESTPHAL TO ADDITIONAL QUESTIONS FROM SENATOR SMITH

GENERAL POLICY

Question 1. What are the Corps' "Principles and Guidelines" for feasibility study analysis?

Response. The Principles and Guidelines provides the conceptual and procedural structure within which water resources projects (including environmental projects) are planned, evaluated, and recommended. They provide: a framework which over-

arches all planning-evaluation; formal planning steps (including those setting up objectives and those requiring alternative solutions); economic and environmental evaluation criteria; and, guidance for making decisions and recommendations. Principles and Guidelines also contains some evaluation procedures that could be called detailed, but most practitioner level detail (“how to”) is supplied in other documents, and by institutional experience.

The Principles and Guidelines represents a half century’s planning experience and development. It continues and refines that which was best and permanent in the “Green Book” (1940’s and 1950’s), Senate Document No. 97 (1960’s), and the Principles and Standards (1970’s). The Principles and Guidelines and the prior documents differ mainly in their evaluation procedures detail and in their planning process detail, and only secondarily in their philosophy or in their planning-evaluation framework.

Question 2. How could these principles and guidelines be amended to reflect the modernization of the Army Corps’ mission?

Response. The fundamentals of the Principles and Guidelines remain valid; perceived methodological advances, perceived societal changes, or other perceived changes do not necessarily all require Principles and Guidelines changes. Mission modernization can and does take place outside formal Principles and Guidelines changes. Since that guidance was published in 1983, missions have been changed both by legislation (e.g., cost sharing legislation, environmental activities legislation; and by the Administration directing, and working in concert with, the Agency (e.g., priority for environmental projects, tradeoffs of development for environmental benefits). Historically, most “modernizations” and changes in Corps missions come through means other than guidance changes at the level of the Principles and Guidelines.

It is likely, also, that some, and possibly most, “modernizations” amount really to revisiting, relearning, or elaborating upon procedures already in the Principles and Guidelines, or to adopting procedures which are includable in it upon a valid inference. The main thing strictly prescribed in the Principles and Guidelines is that analyses are to be documented, objective and conceptually valid. One frequently cited change would be to return to the dual planning objectives of national economic development and environmental quality that were in effect prior to 1983.

Question 3. How does the Corps intend to manage the Challenge 21 application process? Will the priority sites listed in WRDA 99 be given the highest consideration? How many different projects do you envision funding with the \$20 million requested?

Response. We are still in the process of developing the procedural guidelines for implementing the Flood Mitigation and Riverine Restoration Program or Challenge 21. However, we would expect Districts to work with local sponsors to develop proposals. Proposals received from the priority areas listed in WRDA 99 will be ranked using the required rating criteria. Since all of the studies and projects must be fully funded within the authorized appropriation limit, the final selections for funding will be made at the Washington level. The number of studies which we may fund in fiscal year 2001 will depend on the potential Federal share of the proposed projects due to the requirement to fully fund the studies and projects within the authorized program funding levels. Interest in the program is high and we would expect to use the requested funds fully.

Question 4. Why did you decrease the request for Section 1135 funding from the authorized \$25 million to \$14 million?

Response. The Administration’s budget included \$8,500,000 for Section 1135 for fiscal year 2000. During the fiscal year 2000 Conference, this was increased to \$10,000,000. The Administration’s request of \$14,000,000 for this effort in fiscal year 2001 represents a modest increase over the fiscal year 2000 funding.

Question 5. Can you provide the committee with a list of the facilities expected to be priorities under the Recreation Modernization Program?

Response. Seventeen recreation sites have been identified to date for modernization in Fiscal Year 2001, as shown on the following table:

| Project | Recreation Area | Estimate (\$) |
|-----------------------------|---------------------------------|---------------|
| Greers Ferry Lake, AR | Dam Site Park | 3,800,000 |
| Lake Ouachita, AR | Joplin Recreation Area | 1,380,000 |
| Lake Mendocino, CA | Bushay Recreation Area | 1,940,000 |
| Lake Okeechobee, FL | St. Lucie Recreation Area | 1,597,000 |

| Project | Recreation Area | Estimate (\$) |
|-------------------------------------|-----------------------------------|---------------|
| Mississippi River Project, IL | Thomson Causeway Area | 2,310,000 |
| Perry Lake, KS | Rock Creek Park* | 1,555,000 |
| Carr Creek Lake, KY | Littcarr Recreation Area | 676,000 |
| Abiquiu Dam, NM | Cerrito Recreation Area | 1,094,700 |
| Berlin Lake, OH | Mill Creek Recreation Area | 1,855,000 |
| Lake Texoma, OK | Burns Run Park | 2,015,000 |
| John Day Project, OR | Giles French Park* | 1,200,000 |
| Cowanesque Lake, PA | Tompkins Recreation Area | 500,000 |
| J. Percy Priest Lake, TN | Poole Knobs Recreation Area | 656,995 |
| Philpott Lake, VA | Goose Point Park | 1,386,000 |
| Ball Mountain Dam, VT | Winhall Brook Camping Area | 833,000 |
| McNary L&D, WA | Hood Park Recreation Area * | 3,300,000 |
| Summersville Lake, WV | Battle Run Recreation Area | 745,000 |

* Sites along the Lewis and Clark expedition route.

Question 6. In his oral testimony, Dr. Westphal said, “we make the policy decisions in our office as to what we think is appropriate and what we don’t think is appropriate.” How can it be then that the Assistant Secretary was not informed of this “Program Growth Initiative” which proposes a vast expansion of the Corps’ budget?

It is incredulous that Dr. Westphal would not be aware of such a sweeping policy initiative when the agency is in the midst of preparing WRDA 2000. Why wouldn’t a major policy initiative, as the “Program Growth Initiative” is portrayed to be, first be shared with the Assistant Secretary to see that it was in alignment with agency policy and position?

Response. The slides referred to by the Washington Post as a “Program Growth Initiative” were a work in progress developed for the purpose of conducting a discussion between the Chief of Engineers and his subordinate commanders over what more the Corps could do to satisfy the Nation’s needs for solutions to water resource problems.

I challenged the Corps to assess the Nation’s water resources needs in my speech to the Corps leadership at its national meeting in San Francisco last August. I also challenged the Corps’ collective leadership to work harder at solving the Nation’s water resource problems.

Following this challenge, the Corps embarked on developing a new draft Strategic Plan for the Civil Works program that would set forth the water resource needs of the Nation, as best they could be identified, and a plan for addressing the needs in an orderly manner. Dr. Westphal had not been specifically briefed on the discussion between the Chief of Engineers and his commanders.

Question 7. I understand that the National Academy of Sciences will conduct a review of the Upper Miss and Illinois Navigation Study. When do you expect their review will be complete? Does the Department of Defense have any intentions of asking the IG to investigate alleged wrongdoings?

Response. The Secretary of the Army has asked the National Academy of Sciences to review the economic assumptions and approach that the Corps is using, and he has asked the Army Investigator General to investigate allegations of wrongdoing by Corps officials. I have no information at this time about how long the investigations will take.

BACKLOG

Question 8. Regarding the \$30 billion backlog, General Ballard testified that you still have non-Federal partners for ALL the projects calculated into this figure. If that is the case, and the committee believes it is not, can you provide the committee with a list of: each project in the backlog; when the project was authorized; which member(s) originally requested it; whether a willing non-Federal sponsor still exists; whether the project meets the Corps mission; when the first and last appropriation was made; and how much remains to be funded before the project is complete? Also, the Corps recommendation on which of these projects in the backlog warrant deauthorization.

Response. In order to adequately respond to your question, the Corps of Engineers is undertaking an extensive data search and review. The Army will provide a response when that effort is complete.

Question 9. Is the mission of the Corps Civil Works being adequately met with the appropriation levels enacted over the past five fiscal years? If not, what needs are not being met?

Response. Ultimately, the President and the Congress must decide what is adequate, given the wide array of programs competing for limited resources. There are, however, additional investments that could be made in water resources. For example, the backlog of maintenance and repair on the existing water resources infrastructure for which the Corps is responsible continues to grow. Also, the implementation schedules allowed by appropriation levels cause some inefficiencies in construction, and benefits that could be realized earlier are foregone.

Question 10. How would authorization of the Comprehensive Everglades Restoration Plan impact this backlog?

Response. We believe that, with the authorization of this critical and necessary work to correct the problems found today in the Everglades, the Office of Management and Budget, together with Congress, would provide the necessary funding level associated with this effort, so that we can proceed forward with the solution, and do so without seriously impacting on the implementation of the rest of the program.

Question 11. What does the Corps recommend as a means of dealing with this extensive backlog while still meeting the needs of the nation?

Response. The Army will continue to advocate within the Administration for the allocation of additional resources to the Civil Works program to the extent consistent with the President's overall program. In addition, we will review the construction backlog to identify work that could and should be deauthorized.

EVERGLADES

Question 12. What percentage of the fiscal year 2001 construction account is devoted to the Everglades? Can you compare this to other ecosystem-wide projects being undertaken by the Corps.

Response. The Administration's proposed fiscal year 2001 funding for the Everglades includes \$90,087,000 for Central and Southern Florida, FL; \$20,000,000 for Kissimmee River, FL; \$4,562,000 for Hillsboro and Okeechobee aquifer, FL; and \$20,525,000 for the Everglades and South Florida Ecosystem Restoration, FL, for a total of \$135,174,000, or 8.9 percent of the total Construction, General budget. It is the only ecosystem-wide project currently being undertaken by the Corps.

Question 13. Please give a detailed justification for why each of the 10 CERP construction projects slated for initial authorization must be authorized in WRDA 2000 and not WRDA 2002. In this explanation, please include what specific stage in the process each project stands, level of detail known about each component, what more needs to be done before feasibility-level analysis is complete.

Response. The features of the Comprehensive Everglades Restoration Plan (CERP) which are recommended for initial authorization in WRDA 2000 include projects that are necessary to expedite ecological restoration of the Everglades and other south Florida ecosystems. Authorization of these features in WRDA 2000 will ensure maximum integration with ongoing Federal, State, and local ecological restoration efforts and water quality improvement programs.

The immediacy for authorization of these select features involves four factors: (1) providing immediate system-wide water quality and flow distribution benefits to the ecosystem; (2) utilizing lands already purchased; (3) efficiency with ongoing projects; and (4) realizing the benefits of Federal investments already undertaken. This authorization will allow for detailed development of future projects under the CERP while maximizing the opportunity to integrate those features with other ongoing Federal and State programs, including the Modified Water Deliveries to Everglades National Park Project, the C-111 Project and the State of Florida's Everglades Construction Project. This integration will allow development of comprehensive solutions to ongoing Federal projects, such as the Modified Water Deliveries Project, that could otherwise not be pursued under existing authorities. It is anticipated that this would ultimately result in substantial cost savings to the Federal Government. Furthermore, the South Florida Water Management District and the U.S. Department of the Interior have purchased almost $\frac{2}{3}$ of the lands required for construction of these initial components in the CERP, including nearly 51,000 acres of land as a result of the purchase and exchange of the Talisman property in the Everglades Agricultural Area (EAA) for water storage. Immediate authorization of the components that use these lands will ensure that these lands will be utilized and the benefits accrued as soon as possible.

While the Comprehensive Plan report was written at a level of detail that is less specific in nature than recent projects recommended for congressional authorization, the feasibility report has been completed in accordance with legislation and Army policy and guidance. Further, the Programmatic Environmental Impact Statement (EIS) addresses the potential environmental effects of the actions proposed in the CERP. The Programmatic EIS addresses, at a general level, the alternatives and environmental effects of the overall project. The Comprehensive Plan presented in the feasibility report is similar in scope to the 1948 Comprehensive Report for the Central and Southern Florida Project. The original plan provided a framework from which all subsequent planning and design could follow. Due to the reduced level of detail, prior to initiation of detailed design and construction, Project Implementation Reports (PIRs) will be completed for each project(s) proposed for authorization in WRDA 2000 to address the projects(s) cost effectiveness, engineering feasibility, and environmental acceptability, including National Environmental Policy Act compliance. During development, these reports will be coordinated with appropriate Federal, tribal, State and local governments. These reports, which will be completed within 18 to 36 months, will be approved by the Secretary of the Army and will document advanced planning, engineering and design, real estate analysis, and supplemental requirements under the National Environmental Policy Act.

From a overall system-wide prospective, these initial authorization projects, shown in the table below, will produce major environmental benefits to critical areas of the ecosystem. The C-44, Everglades Agricultural Area (EAA)—Phase 1, and Taylor Creek / Nubbin Slough water storage projects provide significant environmental benefits to Lake Okeechobee, the Water Conservation Areas (WCAs), and the St. Lucie and Caloosahatchee estuaries. The Taylor Creek / Nubbin Slough, C-44, C-11, WCA 3A/3B Levee Seepage Management, and the C-9 projects provide significant water quality improvements to Lake Okeechobee, St. Lucie Estuary, and the Water Conservation Areas. The Tamiami Trail Modifications and Fill Miami Canal and North New River Improvements projects reduce fragmentation and restore connectivity between the Water Conservation Areas and Everglades National Park. The Everglades Agricultural Area—Phase 1, C-11, WCA 3A/3B Levee Seepage Management, C-9, Tamiami Trail Modifications, Fill Miami Canal, and the C-11N Spreader Canal projects are linked to the ongoing Modified Water Deliveries and C-111 projects and the State Everglades Forever Act projects.

Additional information on the initial 10 projects is provided in the following table.

CONSTRUCTION FEATURES FOR WRDA 2000 AUTHORIZATION

| Item | Project Component | Project Cost | Construction Dates |
|-------|--|-----------------|--------------------|
| 1 | C-44 Basin Storage Reservoir | \$112,562,000 | 6/04—6/07 |
| 2 | Everglades Agricultural Area Storage Reservoirs—Phase 1 | \$233,408,000 | 9/05—9/09 |
| 3 | ite 1 Impoundment2 (Phase 1) | \$38,535,000 | 9/04—9/07 |
| 4 | WCA 3A/3B Levee Seepage Management ¹ | \$100,335,000 | 9/04—9/08 |
| 5 | C-11 Impoundment & Stormwater Treatment Area ¹ | \$124,837,000 | 9/04—9/08 |
| 6 | C-9 Impoundment/Stormwater Treatment Area | \$89,146,000 | 9/04—9/07 |
| 7 | Taylor Creek/Nubbin Slough Storage and Treatment Area | \$104,027,000 | 1/05—1/09 |
| 8 | Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within WCA 3 ^{1 2} (Phase 1). | \$26,946,000 | 1/05—1/10 |
| 9 | North New River Improvements ¹ | \$77,087,000 | 1/05—1/09 |
| 10 | C-111 N Spreader Canal | \$94,035,000 | 7/05—7/08 |
| 11 | Adaptive Assessment and Monitoring | \$100,000,000 | |
| TOTAL | | \$1,100,918,000 | |

¹ Project components are dependent upon each other and would be implemented as a single project.

² Although the initial phase of this project component is within the cost limits of the proposed Programmatic Authority, the total cost for the component exceeds that authority and therefore is included with these recommended construction projects.

Provided below is a more detailed description of the components, the criticality to the CERP, the benefits produced, and design information on each project component recommended for initial authorization is provided below:

C-44 Basin Storage Reservoir

This project is located in the Upper East Coast region of south Florida in southern Martin County. The proposed storage reservoir will be constructed in close proximity to the C-44 Canal with the C-44 Basin. The exact location of the reservoir has not been identified at this time. Alternative locations for the reservoir are currently being evaluated as part of the ongoing Indian River Lagoon Feasibility Study. The

purpose of this project is to capture and store local runoff from the C-44 Basin, then return the stored water to the C-44 Canal when there is a water supply demand. The reservoir is designed for flood flow attenuation to the estuary, water supply benefits including environmental water supply deliveries to the estuary, and water quality benefits to reduce salinity and nutrient impacts of runoff to the estuary.

This project is included in the initial authorization for a number of reasons. Preliminary analyses has shown that the majority of the benefits to the natural areas will not be realized until most of the major storage features, such as reservoirs like this, are in place. Early authorization of this component is expected to provide significant regional water quality benefits, specifically to the St. Lucie River and Estuary and the Indian River Lagoon, in the form of nutrient reduction. In addition, early authorization will provide the opportunity to moderate damaging ecological releases to St. Lucie Estuary from Lake Okeechobee and the surrounding basin as soon as possible. The Indian River Lagoon and the St. Lucie Estuary experienced significant impact as a result of releases made from the Lake during the spring of 1998. In addition, residents of Martin County strongly support the CERF and in late 1998, a 1-percent sales surtax referendum was passed to generate a funding source for land acquisition for environmental restoration in the county.

This project includes an above ground reservoir with a total storage capacity of approximately 40,000 acre-feet located in the C-44 Basin in Martin County. The initial design of the reservoir assumes 10,000 acres with water levels fluctuating up to 4 feet above grade. The initial design includes inflow pump capacity of 1,000 cubic feet per second (CFS) and an outflow structure capacity of 800 cfs. Inflows to the storage facility include local basin runoff and releases from Lake Okeechobee when the lake stage is greater than 14.5 feet NGVD.

During the wet season, this large storage component will aid in the prevention of damaging regulatory releases to the estuary while reducing basin flooding by capturing and storing excess storm water runoff. Subsequently, during the dry season, water, including water supply to the estuary, will be enhanced, as stored water is metered out of the system as needed.

Regulatory releases were made from Lake Okeechobee through the C-44 Canal from December 1997 until late 1998. These regulatory releases ranged from 2,500 cubic feet per second (CFS) to 7,000 cfs for most of the duration. The St. Lucie River and Estuary and the Indian River Lagoon experienced reduced salinity concentrations outside the range of the established minimums for a healthy ecosystem. During this release event, approximately 33 species of lesioned fish were discovered by local fisherman, 450 individual lesioned fish were sent to the Florida Marine Research Institute for analysis, local citizens became concerned for human health related to water quality in surrounding waters, and in addition, silting of the offshore reef system was discovered. The actual cause of the epidemic of lesioned fish is still unknown, but scientists are working from the theory that the heavy freshwater discharges from Lake Okeechobee and the associated water quality are connected. By capturing excess storm water runoff and storing it, harmful wet season regulatory releases will be reduced, protecting oysters, seagrasses and other estuarine organisms. Water quality benefits include protecting the estuary from excessive freshwater pulses that drastically reduce salinity, and protecting the estuary from the nutrients inherent in storm water runoff. Controlled releases of the stored water during the dry season will protect and restore more natural estuarine conditions. The stored water will also be returned to the C-44 Canal when needed to meet agricultural water supply demands.

The final location, size, depth and configuration of this facility will be determined through more detailed analysis to be completed as part of the ongoing Indian River Lagoon feasibility study scheduled for completion in September 2001. This project is currently scheduled for construction initiation in June 2004 with completion in June 2007. Of the 10,000 acres needed for this project, no land has been acquired to date.

Everglades Agricultural Area Storage Reservoirs Phase-1

This project is located in the Everglades Agricultural Area in western Palm Beach County on lands purchased with Department of Interior Farm Bill funds, with South Florida Water Management District funds, and through a series of exchanges for lands being purchased with these funds. The area presently consists of land that is mostly under sugar cane cultivation. This project will be implemented consistent with the Farm Bill land acquisition agreements. This project will improve timing of environmental deliveries to the Water Conservation Areas including reducing damaging flood releases from the Everglades Agricultural Area to the Water Conservation Areas, reduce Lake Okeechobee regulatory releases to estuaries, meet sup-

plemental agricultural irrigation demands, and increase flood protection within the Everglades Agricultural Area.

This project is included in the initial authorization for three reasons: (1) lands needed for the project have been acquired by the U.S. Department of Interior and the South Florida Water Management District; (2) it provides the opportunity to construct the facility in a manner that is mutually beneficial for the CERP and the Everglades Construction Project, including over 40,000 acres of stormwater treatment areas (STAs) being implemented by the SFWMD under the Everglades Forever Act of 1994; and (3) expedites construction of this facility which provides multiple environmental, water supply, and flood protection benefits.

This project includes above ground reservoir(s) with a total storage capacity of approximately 240,000 acre-feet located on land associated with the Talisman Land purchase in the Everglades Agricultural Area. Conveyance capacity increases for the Miami, North New River, Bolles and Cross Canals are also included in the design of this project. The initial design for the reservoir(s) assumed 40,000 acres, divided into two, equally sized compartments with the water level fluctuating up to 6 feet above grade in each compartment. However, actual design and construction of this first phase will maximize the use of the land acquired through the Farm Bill land acquisition agreements which may be as much as 50,000 acres.

Compartment 1 would be approximately 20,000-acre reservoir at 6 feet maximum depth with inflow pumps with a capacity of 2,700 cfs from the Miami Canal Basin and 2,300 cfs from the North New River Canal Basin for diversion of Everglades Agricultural Area runoff. Outflow to the Everglades Agricultural Area would be through a 3,000 cfs structure to Miami Canal Basin and a 4,400 cfs structure to North New River and Hillsboro Basins. Compartment 2 would be approximately 20,000-acre reservoir at 6 feet maximum depth with inflow pumps with a capacity of 4,500 cfs from the Miami Canal Basin and 3,000 cfs from the North New River Canal Basin for diversion of Lake Okeechobee regulatory releases. Outflow to the Everglades Construction Project's Stormwater Treatment Areas 3 and 4 would be through a 3,600 cubic foot per second structure.

Canal conveyance capacities would be increased by 200 percent for the Miami, North New River and Bolles and Cross Canal in order to direct Lake Okeechobee regulatory releases to the reservoir. The Project Implementation Report for the project will address the specific location and sizing of the facility as well as more site-specific design of levees and pump stations. In addition, the extent of conveyance improvements for the North New River Canal, the Miami Canal, and the Bolles and Cross Canal will be identified.

The benefits from this project include improved storage and conveyance that will enhance the water supply to the natural areas and support better timing of water deliveries to the Water Conservation Areas by capturing and managing flood releases from the Everglades Agricultural Area to the Water Conservation Areas. This component will reduce the need to make damaging regulatory releases from Lake Okeechobee to the St. Lucie and Caloosahatchee estuaries and will help meet Everglades Agricultural Area irrigation needs while increasing flood protection in the area.

Compartment 1 of the reservoir would be used to meet Everglades Agricultural Area irrigation demands. The source of water is excess Everglades Agricultural Area runoff. Overflows to Compartment 2 could occur when Compartment 1 reaches capacity and Lake Okeechobee regulatory discharges are not occurring or impending. Compartment 2 would be used to meet environmental demands as a priority, but could supply a portion of Everglades Agricultural Area irrigation demands if environmental demands equal zero. Flows will be delivered to the Water Conservation Areas through Stormwater Treatment Areas 3 and 4. The sources of water are overflow from Compartment 1 and Lake Okeechobee regulatory releases. Compartment 2 will be operated as a dry storage reservoir and discharges made down to 18 inches below ground level.

This project is currently scheduled for construction initiation in September 2005 with completion in September 2009. The scheduled construction start is based on the existing lease agreements that were part of the Farm Bill land acquisition agreement. Further, based on these lease agreements the use of Talisman site requires 30 months advance notification to lease holders before construction can begin.

Site 1 Impoundment

This water storage project has been sited and is located in southern Palm Beach County adjacent to the Hillsboro Canal and Loxahatchee National Wildlife Refuge and Water Conservation Area 2A. The purpose of this project is to supplement water deliveries to the Hillsboro Canal during dry periods thereby reducing demands on Lake Okeechobee and Loxahatchee National Wildlife Refuge.

This project is included in the initial authorization for several reasons: 1) a large portion of the lands required for the project have already been acquired by the sponsor, 2) benefits to the ecosystem will be gained from this project by capturing water that is normally sent to tide and returning it to the system early in the process, and 3) uncertainty in constructing this project is minimized by phasing the project and postponing the aquifer storage and recovery portion of the component until the ASR pilot project is completed.

This project includes an above ground reservoir with a total storage capacity of approximately 15,000 acre-feet. The initial design of the reservoir assumed 2,460 acres with water levels fluctuating up to 6 feet above grade. An inflow pump station with a capacity of 700 cfs, an outflow structure with a capacity of 200 cfs and an emergency outflow structure with a capacity of 700 cfs are proposed. The final depth and configuration of these facilities will be determined through more detailed planning and design to be completed as a part of the ongoing Water Preserve Areas Feasibility Study.

The reservoir will be filled during the wet-season from excess water pumped from the Hillsboro Canal. Water will be released back to the Hillsboro Canal to help maintain canal stages during the dry-season. If water is not available in the reservoir, existing rules for water delivery to this region will be applied.

The benefits to the project will be a reduction in demands on the Loxahatchee National Wildlife Refuge and Lake Okeechobee during the early dry season as well as a reduction in the amount of water discharged to tide. By reducing the demands on Lake Okeechobee the littoral zone of the Lake and the marshes in the Refuge will suffer fewer damaging low levels.

The project is currently scheduled for construction initiation in September 2004 with completion in September 2007. Of the 2,458 acres needed for this project, 1,658 acres have been acquired by SFWMD to date.

Western C-11 Impoundment and Diversion Canal

This project has been sited in western Broward County east of Water Conservation Area 3A and 3B. The diversion canal is located west of US-27 between C-11 and C-9 Canals. The C-11 stormwater treatment area/impoundment is located northeast of the intersection of U.S. Highway 27 and C-11 Canal. The purpose of these projects is to divert runoff from the western C-11 Canal Basin that is presently backpumped into Water Conservation Area 3A through the S-9 pump station and divert it into the C-11 Stormwater Treatment Area/Impoundment and then into the C-9 Stormwater Treatment Area/Impoundment or Water Conservation Area 3A after treatment depending on conditions. Ultimately, the C-11 flows will be diverted to North Lake Belt Storage Area (once it is operational). Due to dependencies, this project would be implemented in combination with the Water Conservation Area 3A and 3B Levee Seepage Management and the C-9 Impoundment projects.

Initial authorization is necessary due to the existing operation of the S-9 pump station. The original C&SF Project design provides for Western C-11 Basin drainage to be pumped into Water Conservation Area 3. This project will provide the necessary facilities to maintain flood protection within the basin, while reducing flows through the S-9 pump station to Water Conservation Area 3. Other factors supporting initial authorization include: 1) lands were identified as suitable by both the East Coast Buffer Feasibility Analysis and the Water Preserve Areas Land Suitability Analysis; 2) lands are being actively acquired by sponsor; 3) this project is consistent with ongoing programs such as the Water Preserve Areas Feasibility Study and the Everglades Stormwater Program; and 4) acquisition and utilization of land which is suitable for storage and water quality treatment are rapidly being lost to urbanization.

This project includes canals, levees, water control structures, and a stormwater treatment area/impoundment with a total storage capacity of 6,400 acre-feet. The initial design of the stormwater treatment area/impoundment assumed 1,600 acres with the water level fluctuating up to 4 feet above grade. The initial design of the diversion canal west of U.S. Highway 27 is for a conveyance capacity of 2,500 cfs. A 2,500 cfs conveyance capacity improvement is envisioned to the C-9 canal between S-30 and the C-9 Impoundment. An intermediate 2,500 cfs pump station in the C-11 canal will be used to direct runoff to the C-11 stormwater treatment area/impoundment. A seepage collection canal and inflow pump station will also be used on the C-11 stormwater treatment area/impoundment. A 2,200 cfs outflow structure is envisioned to discharge from the impoundment to C-11 west of U.S. 27 to the diversion canal. The final size, depth and configuration of these facilities will be determined through the ongoing Water Preserve Areas Feasibility Study.

The benefit from this project is that Water Conservation Area 3A water quality will improve when the poor quality runoff from the western C-11 Canal basin is

no longer being backpumped into it through the S-9 pump station. This component diverts that water into the C-11 Stormwater Treatment Area/Impoundment where it then becomes available for either the C-9 Stormwater Treatment Area/Impoundment, the North Lake Belt Storage Area after it is operational or Water Conservation Area 3A after treatment.

The C-11 Impoundment and Canal features are currently scheduled for construction initiation in September 2004 with completion in September 2008. Of the 2,535 acres needed for this project, the SFMD has acquired 531 acres to date.

Water Conservation Areas 3A and 3B Levee Seepage Management

This project has been sited in western Broward County east of Water Conservation Area 3A and 3B. This project will reduce seepage loss from these WCAs to improve hydroperiods within the Conservation Areas by allowing higher water levels in the borrow canals and longer inundation within the marsh areas that are located east of the WCAs and west of US Highway 27. Seepage from the WCAs and marshes will be collected and returned to the Water Conservation Areas via the C-11 Impoundment features or stored in either the C-9 or C-11 Impoundment. Due to dependencies, this project would be implemented in combination with the C-11 and C-9 Impoundment projects.

Millions of gallons of groundwater are lost each year as it seeps away from the Everglades toward the East Coast. This project is the first increment to control these losses and improve hydroperiods within the Water Conservation Areas. Other factors supporting initial authorization include: (1) lands were identified as suitable by both the East Coast Buffer Feasibility Analysis and the Water Preserve Areas Land Suitability Analysis; (2) lands are being actively acquired by sponsor; (3) this project is consistent with ongoing programs such as the Water Preserve Areas Feasibility Study and the Everglades Stormwater Program; and (4) acquisition and utilization of land are rapidly being lost to urbanization.

New levees will be constructed west of US Highway 27 from the North New River Canal to the Miami (C-6) Canal to separate seepage water from the urban runoff in the C-11 diversion canal (Component Q). The L-37 and L-33 borrow canals will be controlled at higher stages as will the marshes located east of the WCAs. A divide structure will be added to the C-11 Canal west of US Highway 27 to maintain the separation of seepage water from urban runoff. Water from C-11 west will be stored in the C-11 Impoundment or diverted to the C-9 Impoundment. Ultimately, the water will be diverted to the North Lake Belt Storage Area once it is on line. The final size, depth and configuration of these facilities will be determined through the ongoing Water Preserve Areas Feasibility Study.

The ability to control seepage from the natural system is the most cost-effective increment of restoring water levels in the Everglades. This project will make significant improvement toward restoring the natural conditions in the Everglades. This project will control seepage from Water Conservation Areas 3A and 3B by increasing groundwater elevations adjacent to the WCAs. Water levels in the adjacent marsh areas will provide a hydrologic buffer between the Everglades and the developed areas of Broward County.

The Water Conservation Areas 3A and 3B Levee Seepage Management project is currently scheduled for construction initiation in September 2004 with completion in September 2008. Of the 6,542 acres needed for these projects, the SFWMD has acquired 5,796 acres to date. This project would be implemented with the C-11 Impoundment and Canal features.

C-9 Stormwater Treatment Area/Impoundment

This project has been sited in the western C-9 Basin in Broward County. The purpose of this project is to capture excess stormwater runoff from the C-11 Basin and Western C-9 Basin in a 2,500 acre Stormwater Treatment Area/Impoundment adjacent to C-9 for storage and water quality treatment. This project is needed to realize the benefits of C-11 Stormwater Treatment Area and Impoundment.

There are a number of factors supporting initial authorization of this project including: 1) lands were identified as suitable by both the East Coast Buffer Feasibility Analysis and the Water Preserve Areas Land Suitability Analysis; 2) lands are being actively acquired by sponsor; 3) this project is consistent with ongoing programs such as the Water Preserve Areas Feasibility Study and the Everglades Stormwater Program; and 4) acquisition and utilization of land which is suitable for storage and water quality treatment are rapidly being lost to urbanization; 5) this area is necessary for diversion of C-11 Basin flows prior to the completion of the North Lake Belt Storage Area which is scheduled later in the implementation plan; 6) improved flood protection in the Western C-9 Basin.

This project includes canals, levees, water control structures and a stormwater treatment area/impoundment with a total capacity of approximately 10,000 acre-feet. The initial design of the stormwater treatment area/impoundment assumed 2,500 acres with the water level fluctuating up to 4 feet above grade. An inflow pump station with a capacity of 1,000 cfs and an outflow gravity structure with a capacity of 1,000 cfs are also envisioned for the impoundment. A seepage collection canal and pump station with a capacity of 200 cfs are needed to prevent impact to private adjacent land. The final size, depth and configuration of these facilities will be determined through the ongoing Water Preserve Areas Feasibility Study.

Operationally, excess stormwater runoff from the C-11 Basin and Western C-9 Basin will be pumped into the C-9 Stormwater Treatment Area/Impoundment for storage and water quality treatment prior to making water supply deliveries to the C-9, or C-6/C-7 Canals. Seepage from C-9 Stormwater Treatment Area/Impoundment will be collected and returned to the impoundment.

The benefits from this project will include enhancing groundwater recharge within the basin, provide seepage control for Water Conservation Area 3 and buffer areas to the west thereby keeping more of the natural system's water in the natural system. In addition flood protection for the western C-9 Basin will be enhanced.

This project is currently scheduled for construction initiation in September 2004 with completion in September 2007. Of the 2,500 acres needed for this project, the SFWMD has acquired 531 acres to date.

Taylor Creek/Nubbin Slough Storage and Treatment Area

This project is located northeast of Lake Okeechobee in the Taylor Creek/Nubbin Slough (S-191) Basin. This basin is located in Okeechobee, St. Lucie and Martin Counties. This project has not yet been sited but an initial site for a portion of the facilities which is being pursued under the Critical Project authority is located near the northeastern shores of Lake Okeechobee and at the base of Nubbin Slough. The site consists of large areas of improved pasture and hayfields of an existing dairy operation.

This project is included in the initial authorization for three reasons: 1) a portion of the lands needed for the project have been identified by the sponsor under the Critical Projects authority; 2) flows to Lake Okeechobee will be attenuated when lake levels are high or rising and 3) water quality treatment will be provided for flows from the Taylor Creek/Nubbin Slough basin which currently contribute the highest phosphorus inflow concentrations to Lake Okeechobee.

This project includes an above-ground reservoir with a total storage capacity of approximately 50,000 acre-feet and a stormwater treatment area with a capacity of approximately 20,000 acre-feet in the Taylor Creek/Nubbin Slough Basin. The initial design of this project assumed a reservoir of 5,000 acres with water levels fluctuating up to 10 feet above grade and a stormwater treatment facility of approximately 5,000 acres. It is anticipated that there will be a series of reservoir and stormwater treatment facilities located throughout the basin. The Project Implementation Report will address the location and sizing of the facilities as well as the design of levees and pump stations for the reservoirs and stormwater treatment areas.

Local runoff from the Taylor Creek/Nubbin Slough Basin will be pumped into the reservoir then into an adjacent stormwater treatment area. The stormwater treatment area will reduce phosphorus concentrations in the runoff from approximately 0.58 mg/l to 0.117 mg/l. Treated water will be pumped into Lake Okeechobee when the lake stage is falling and is at least 0.5 feet below the bottom pulse release zone.

This project will benefit the project by protecting Lake Okeechobee from excessive high levels that impact the littoral zone as well help reduce regulatory releases from the lake to the St. Lucie and Caloosahatchee estuaries. Lake Okeechobee will also benefit from receiving the water when lake levels decline, providing protection from damaging low levels. Water quality treatment will reduce the nutrient load on the lake to the benefit of all of the Lake's native organisms including the substantial fishery.

This project is currently scheduled for construction initiation in January 2005 with completion in January 2009. Of the 10,000 acres needed for this project, 8, 710 acres must still be sited and acquired.

Water Conservation Area 3 Decompartmentalization (Phase 1)

The purpose of this project feature is to restore sheet flow and reduce unnatural discontinuities in the Everglades landscape. The project includes raising and bridging portions of Tamiami Trail and filling in portions of the Miami Canal within Water Conservation Area 3. Due to the dependencies of components, this project would be implemented with the North New River Improvement project which would create a bypass for water supply deliveries using the North New River Canal.

This project is included in the initial authorization for two reasons; 1) to provide immediate opportunities for enhanced sheetflow within Water Conservation Area 3 and between Water Conservation Area 3 and Everglades National Park and 2) to integrate with ongoing modifications that are being made in the detailed design and construction of the Modified Water Deliveries to Everglades National Park project.

This project includes backfilling the Miami Canal in Water Conservation Area 3 from one to two miles south of the S-8 pump station down to east coast protective levee. To make up for the loss of water supply conveyance to the Lower East Coast urban areas from the Miami Canal, the capacity of the North New River Canal south of the proposed Everglades Agricultural Area Storage Reservoir will be doubled under a separate component to convey additional water supply deliveries to Miami-Dade County as necessary. Modifications will also be made to the eastern section of Tamiami Trail which includes elevating the roadway through the installation of a series of bridges between L-31N Levee and the L-67 Levees. The eastern portion of L-29 Levee and Canal will also be degraded in the same area as Tamiami Trail modifications.

The Project Implementation Report will address the scope and method to be used for Miami Canal backfilling, conveyance improvements to the North New River Canal and, the bridging of Tamiami Trail, and L-29 modifications that are necessary to enable unrestricted flow from Water Conservation Area 3 into Everglades National Park. The sequencing of these modifications will also be addressed in the Project Implementation Report. These project modifications will be coordinated with the existing Modified Water Deliveries to Everglades National Park Project as well as the development of rainfall driven operational schedules for Water Conservation Area 3 and Everglades National Park.

The benefits of this project include restoring sheet flow and reducing the unnatural discontinuities in the landscape. The water depth patterns will be more gradual allowing aquatic organisms will be able to move more freely, exotic species will not have the advantage of deep water canals that provide thermal refuge or dry levees on which to grow. Normal proportions of predators/prey species in fish populations will be undisturbed. Natural interspersions of different marsh habitats will replace the current system of upstream pools and downstream dry area on either side of barriers. The result will be better quality and more easily accessible habitat for wading birds and other Everglades species.

This project will provide the initial increment of more integrated passive management of Water Conservation Area 3 and Everglades National Park. It is anticipated that these modifications will be made in association with the implementation of a rainfall driven operational schedules for both Water Conservation Area 3 and Everglades National Park.

The Miami Canal and the Tamiami Trail modifications are currently scheduled for construction initiation in January 2005 with completion in January 2010. Of the 255 acres needed for this project, none have been acquired.

North New River Improvements

This project is limited to modifications to existing C&SF Project features. The purpose of this project is to create a bypass for water supply deliveries using the North New River Canal to mitigate for filling in portions of the Miami Canal within Water Conservation Area 3. Due to the dependencies of these components, this project would be implemented with the component Water Conservation Area 3—Phase 1 (Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within WCA3).

This project is included in the initial authorization for two reasons; 1) to provide immediate opportunities for enhanced sheetflow within Water Conservation Area 3 and between Water Conservation Area 3 and Everglades National Park and 2) to integrate with ongoing modifications that are being made in the detailed design and construction of the Modified Water Deliveries to Everglades National Park project.

This project includes mitigating lost water supply conveyance caused by backfilling the Miami Canal in Water Conservation Area 3. To make up for the loss of water supply conveyance to the Lower East Coast urban areas from the Miami Canal, the capacity of the North New River Canal south of the proposed Everglades Agricultural Area Storage Reservoir will be doubled to convey additional water supply deliveries to Miami-Dade County as necessary. The capacities of S-351 and S-150 to pass additional water supply deliveries down the North New River Canal to Miami-Dade County will be doubled. In addition, the conveyance of the L-33 and L-37 borrow canals on the west side of US 27 between L-38W and the Miami Canal will be increased as necessary to pass the additional flows.

The Project Implementation Report will address the scope and method to be used for Miami Canal backfilling, conveyance improvements to the North New River

Canal and, the bridging of Tamiami Trail, and L-29 modifications that are necessary to enable unrestricted flow from Water Conservation Area 3 into Everglades National Park. The sequencing of these modifications will also be addressed in the Project Implementation Report. These project modifications will be coordinated with the existing Modified Water Deliveries to Everglades National Park Project as well as the development of rainfall driven operational schedules for Water Conservation Area 3 and Everglades National Park.

The benefits of this project include maintaining a water delivery mechanism to the lower east coast while restoring sheet flow and reducing the unnatural discontinuities in the landscape. This project will allow for water depth patterns in the Water Conservation Area 3 to be more gradual allowing aquatic organisms to move more freely, exotic species will not have the advantage of deep water canals that provide thermal refuge or dry levees on which to grow. Normal proportions of predators/prey species in fish populations will be undisturbed. Natural interspersions of different marsh habitats will replace the current system of upstream pools and downstream dry area on either side of barriers. The result will be better quality and more easily accessible habitat for wading birds and other Everglades species.

This project will allow for the initial increment of a more integrated passive management of Water Conservation Area 3 and Everglades National Park. It is anticipated that these modifications will be made in association with the implementation of a rainfall driven operational schedules for both Water Conservation Area 3 and Everglades National Park.

These project modifications will be coordinated with the existing Modified Water Deliveries to Everglades National Park Project as well as the development of rainfall driven operational schedules for Water Conservation Area 3 and Everglades National Park.

The North New River Canal improvements are scheduled for construction initiation in January 2005 with completion in January 2009. Of the 200 acres needed for this project, none have been acquired.

C-111N Spreader Canal

This project has been sited in south Miami-Dade County in the Southern Glades and Model Lands areas. The project includes modifications to the ongoing C-111 Project to improve water deliveries and enhance the connectivity and sheetflow in the Model Lands and Southern Glades area, and reduce damaging wet season flows in C-111 to Card Sound and Florida Bay. These modifications include expanding the proposed C-111N spreader canal and filling the lower end of the C-111 canal.

This project is included in the initial authorization for several reasons: 1) early authorization will allow for inclusion into the ongoing detailed design and construction of the C-111 project, and 2) inclusion of a stormwater treatment area to provide water quality treatment of agricultural runoff prior to distributing water through the C-111N spreader canal. This project will improve deliveries and enhance the connectivity and sheetflow in the Model Lands and Southern Glades areas, reduce wet season flows in C-111, and decrease potential flood risk in the lower south Miami-Dade County area.

This project includes construction, modification or removal of levees, canals, pumps, water control structures, culverts and a stormwater treatment area. This project enhances the C-111 Project design for the C-111N Spreader Canal with: the construction of a 3,200 acre stormwater treatment area; the enlarging of pump station S-332E from 50 cfs to 500 cfs; increasing the capacity of C-111N for the higher capacity of flow and the extension of the canal approximately two miles under U.S. Highway 1 and Card Sound Road into the Model Lands; and culverts under U.S. Highway 1 and Card Sound Road. The initial design of this project pumps water from the C-111 and the C-111E Canals through two 250 cfs pump stations into a stormwater treatment area prior to discharging through S-332E to the Southern Glades and the Model Lands through the C-111N Canal. This project also fills in the southern reach of the C-111 Canal below C-111N to S-197; removal of structures S-18C and S-197; completely backfilling C-110; and removal of adjacent levees and roads. The final size, depth, location and configuration of this project will be determined through more detailed planning and design.

This project improves deliveries and enhances the connectivity and sheetflow in the Model Lands and Southern Glades areas, reduces wet season flows in C-111, and decreases potential flood risk in the lower south Miami-Dade County area while improving the quality of water discharged into the Model Lands and Southern Glades areas.

This project is currently scheduled for construction initiation in July 2005 with completion in July 2007. Of the 12,415 acres needed for this project, the SFMWD, Miami-Dade County and the State have acquired 6,231 acres to date.

Shown in the table below are the real estate requirements and status for each of the initial components recommended for authorization:

| Initial Authorization Projects Real Estate Requirements and Status | | | |
|---|-----------------|-------------------------------|---|
| Project Component | Project Cost | Estimated Acreage Requirement | Acquisition Status |
| C-44 Basin Storage Reservoir. | \$112,562,000 | 10,000 | Not sited or acquired. Martin County tax enacted in 1998 for land acquisition needed for Comprehensive Plan implementation. |
| Everglades Agricultural Area Storage Reservoirs—Phase I. | \$233,408,000 | — 50,000 (Talisman purchase) | All lands for project already acquired by DOI and SFWMD. |
| Site 1 Impoundment. | \$38,535,000 | 2,458 | SFWMD East Coast Buffer Project. 1,658 acres acquired by SFWMD. 800 acres remaining to be acquired. |
| WCA 3A/3B Levee Seepage Management. | \$100,335,000 | 6,542 | SFWMD East Coast Buffer Project. 5,796 acres acquired by SFWMD (includes 3,190 previously certified for C&SF Project). . 746 acres remaining to be acquired. |
| C-11 Impoundment & Stormwater Treatment Area. | \$124,837,000 | 2,535 | SFWMD East Coast Buffer Project. 531 acres acquired by SFWMD. 2004 acres remaining to be acquired. |
| C-9 Impoundment/ Stormwater Treatment Area. | \$89,146,000 | 2,500 | SFWMD East Coast Buffer Project. 1,515 acres acquired by SFWMD. 985 acres remaining to be acquired. |
| Taylor Creek/Nubbin Slough Storage and Treatment Area. | \$104,027,000 | 10,000 | 1,290 acres sited under Critical Project. Remaining acres not sited. 8,710 acres remaining to be acquired. |
| Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within WCA 3. | \$26,946,000 | 55 | Not acquired. |
| North New River Improvements. | \$77,087,000 | 200 | Not acquired. |
| C-111 N Spreader Canal. | \$94,035,000 | 12,415 | Ongoing program by State and local agencies. 2,451 acquired by SFWMD, 3,780 acquired by Miami-Dade County, 495 acres acquired by the State, for a total of 6,231. 6,184 acres remaining to be acquired. |
| Adaptive Assessment and Monitoring Program (10 years). | \$100,000,000 | NA | NA |
| TOTAL | \$1,100,918,000 | 85,905 | Remaining Acreage Requirement 29,684 |

Adaptive Assessment and Monitoring

An extensive Adaptive Assessment Program, which includes a system-wide monitoring program will be conducted to support the system-wide ecosystem restoration objectives of the CERP. This program will provide an opportunity to continue investigating concepts and issues relative to the overall CERP while implementation of the initial project features are underway. The Adaptive Assessment Program will include continued system-wide evaluation and analysis among other planning activities. The construction and regional monitoring program will have a dual focus on the biological and hydrological restoration objectives in the natural system and the water supply and flood protection objectives in the urban and agricultural regions. The total annual cost of the program is \$10,000,000 and the Corps has recommended a 10-year period for this program.

Question 14a. What is the process that occurs between the time when a feasibility-level report (PIR, in the case of CERP) is issued and construction is initiated?

Response. The CERP presents the conceptual overview of project implementation. Project Implementation Reports (PIRs) are documents that provide the additional plan formulation, engineering and design, economic analysis, environmental analysis (including supplemental NEPA analyze), and real estate analysis for specific

components or a series of components. All PIRs will be submitted to the Corps headquarters and the Office of the Assistant Secretary of the Army for Civil Works for review and approval. As proposed in the Administration's draft WRDA 2000 bill, the PIRs for the 10 projects proposed for initial authorization will not require further authorization, whereas PIRs for subsequent project components will be presented to Congress in future WRDA bills for authorization.

Question 14b. What is the average length of time that passes between these two steps (feasibility finalization and construction initiation)?

Response. PIRs will require 18 to 36 months to complete. Detailed design and plans and specifications are expected to require an additional 3 years to complete, although some of the simpler project components may be completed in less time. Upon completion of plans and specifications and execution of a Project Cooperation Agreement with the local project sponsor, construction contracts may be advertised and construction initiated.

HARBOR SERVICES USERS FEE/FUND

Question 15. How do you respond to allegations that the Harbor Services Users Fee would divert traffic away from U.S. ports?

Response. The following is the Administration's analysis of the diversions question:

Increases in waterborne transportation costs represented by the user fee are expected to cause vessel operators to react in various ways. One concern is that some vessel operators could seek to avoid paying the fee by changing ports-of-call. Under the HMT, it is the shippers who pay the tax and are motivated to transship higher value cargoes through Canada to avoid the HMT. Under the HSUF the incentive for vessel operators paying the fee would be to have as much cargo delivered to the U.S. per voyage in order to be able to pass along the HSUF onto the maximum number of shipments possible. In cases where the HSUF is less than the HMT, some U.S. cargo that was previously shipped through Canada could be expected to flow back to U.S. ports.

The only way to avoid paying the HSUF would be for a vessel operator to completely stop calling on U.S. ports during voyages to North America (i.e., not use any part of the U.S. harbor system). The complete avoidance of U.S. ports on a significant number of existing North American voyages is considered highly unlikely due to the massive size of the U.S. market and the great demand for access to U.S. consumers.

Vessels and voyages that could be expected to be impacted by the HSUF would be those that would pay a relatively high user fee in comparison to total ocean voyage costs and have the greatest degree of flexibility in selecting ports-of-call. Based on 1996 data, voyages to the Pacific Northwest that could be impacted if carriers cannot pass on the fee in the form of higher rates involved approximately \$1 billion of container cargo carried in 43,000 TEUs and about 1.4 million metric tons of dry bulk cargo valued at \$110 million. This would be equivalent to about 1 percent of the value, 2 percent of the cargo tonnage and 3 percent of the TEUs moving through the ports in Washington and Oregon (which in 1996 had approximately 68 million metric tons of foreign trade valued at \$89 billion, some of which was carried in the 1.7 million TEUs imported and exported in these States). On a national perspective, it represents 0.1 percent of the 1.1 billion metric tons of the waterborne foreign trade in the U.S. and 0.2 percent of the total value of \$627 billion in 1996. It's also 0.3 percent of the national total of the cargo carried in 13 million loaded TEUs. A similar analysis was done on the Atlantic Northeast with respect to the Ports of NY/NJ and the Port of Halifax, Canada. The amount of cargo potentially impacted was very small and not significant at the port or national levels.

Question 16. How can you justify \$950 million in offsetting collections based on a program that, frankly, lacks support in the Congress and has little chance of being enacted? Is the Corps looking to alternative means other than the HSF proposal?

Response. The Administration's proposal of the HSUF represents the best of all alternatives considered. Therefore, the Administration stands behind the HSUF and the \$950 million in offsetting collections. The Administration's analysis of alternatives considered before recommending the HSUF to the Congress is given below:

An interagency working group convened by the Office of Management and Budget reviewed a wide range of financing options aimed at funding harbor operations and management and development. The proposed "Harbor Services User Fee" (HSUF), based on ship size (using the net or gross tonnage), the frequency of use, and the operational characteristics of various types of vessels, emerged from this interagency examination of financing alternatives. No other option based on the "beneficiary pays" principle could be identified that would:

- ensure an appropriate link between the fee paid by users and the services provided by the Government in accord with the Supreme Court Decision March 30, 1998 (U.S. Shoe);
- not significantly alter the competitive balance between U.S. ports;
- not significantly impact the competitiveness of U.S. products;
- generate the revenue needed for harbor services; and,
- be practical to administer.

A summary of the alternatives considered and reasons for rejecting or incorporating them into the Harbor Services User Fee proposal follows below:

A Fee Based on Ship Size. The concept of ship size was identified as a measure that reasonably approximates the use of Government services and, in conjunction with frequency of use and other vessel operational and service factors, would satisfy the constitutionality test in the U.S. Shoe decision. In concept, such a fee could be based on a variety of ship measurement factors, including vessel draft (design draft or sailing draft), weight tonnage measures (i.e., displacement tonnage, lightweight tonnage, deadweight tonnage) and volumetric tonnage measures (gross tonnage, net tonnage).

Volumetric measures of ship tonnage (net and gross tonnages) were ultimately selected for incorporation into the HSUF proposal because these volumetric measures of vessel size have long been accepted at ports worldwide as a basis for fees and charges. Net and gross tonnages are known, fixed ship characteristics, which are assigned to each vessel via a Tonnage Certificate in accord with the International Convention of Tonnage Measurement of Ships. A vessel's net or gross tonnage does not change once the ship is built unless a structural modification is made, in which case the vessel is resurveyed and an amended Tonnage Certificate issued. The use of a published, fixed ship characteristic was considered important in establishing a user fee program that could be administered efficiently.

A vessel's design draft does not share the features of uniformity, consistency and acceptance provided by net or gross tonnages. The use of actual draft would be far more difficult to measure and administer, since sailing draft is an operational factor affected by ship speed, place of measurement on the ship, season of the year, salinity of the water, etc. In addition, the use of any operational characteristic would require a large data collection effort that would be subject to human error upon measurement and/or verification.

The various measures of a vessel's weight were rejected because they were either complicated by operational aspects of use (i.e., displacement tonnage, which consists of the sum of a ship's weight (lightweight) and its contents (deadweight), would also require the collection of operational data), and/or were not considered suitable for purposes of approximating the constitutional link required between benefits and use.

A Single Fee based on Cargo Tonnage. Such a fee would be based on the commodity tonnage carried on a ship regardless of what type of commodity is involved. This fee would affect the competitiveness of various commodities differently, with lower value cargoes subjected to the most significantly adverse impacts. In particular, any fee level that would generate the amount of revenue needed to pay for harbor services (harbor operation and maintenance; or harbor operation and maintenance and harbor development) nationwide would severely impact key U.S. exports such as bulk grains and coal shipments. In addition, since the fee is independent of the size of the vessel carrying the cargo, there would not be a direct link between the primary user of the harbor services and the level of services provided.

A Fee based on Cargo Tonnage by Commodity Type. Such a fee would be based on the commodity tonnage, with the fee rate varied by commodity type. Since the type of cargo carried on a vessel does not correlate with harbor service use, there is no way to formulate a fee schedule that provides a reasonable link between the fee and the level of service provided. In addition, the development of any commodity-based tonnage fee schedule that would raise sufficient revenue while minimizing adverse impacts to U.S. competitiveness would merely yield a tonnage-based version of the current ad valorem tax. Such an alternative is not consistent with the constitutionality test outlined in U.S. Shoe.

A Combination Fee based on Vessel Size and Cargo Tonnage. The commodity-based portion of such a fee would not provide the link needed between the level of use and the services provided. However, vessel size proved to be a useful concept and was considered further in the formulation of the Harbor Services Fee Proposal.

A Combination Fee based on Vessel Size and Cargo Tonnage by Commodity Type. Again, the commodity-based portion of such a fee would not provide the link needed between the level of use and the services provided. In addition, varying the fee's cargo tonnage portion by commodity type would merely result in a tonnage-based version of the HMT.

Port Specific Fees. A fee schedule that varies by port or other geographic criteria would clearly upset the existing competitive balance between U.S. ports, and would also likely adversely impact the competitiveness of key U.S. exports. Such an approach was considered to violate the "Port Preference" clause of the U.S. Constitution (Article 1, Section 9, Clause 6).

A Fee based on Vessel Type. It was recognized that different classes of vessels might have very different operating practices and service demands, and that such considerations were important in approximating the link between a user fee and the services provided by the Government. Therefore, this factor was incorporated into the formulation of the HSUF concept.

A Tax on Transportation Fuels. A variety of fuel tax alternatives were considered under the rationale that the transportation system in part or as a whole benefits from the Government's harbor services. Fuel taxes are applied to transportation modes throughout the U.S., and the collection and administration of a fuel tax was considered feasible. The alternatives considered ranged from a fuel tax on marine vessels only to a fuel tax on intermodal freight transportation (including marine vessels, freight trains and trucks), and, ultimately a fuel tax on all transportation modes (including non-freight, i.e., passenger transport, including automobiles).

The marine vessel only alternative was considered to provide the most direct link between the benefits and services harbor users receive, but the resulting tax level was considered significant enough to disrupt the U.S. bunker fuel industry. The tax levels of all of the other alternatives, except the "across-the-board" fuel tax, also proved to be significant in terms of the impact to U.S. competitiveness. Although an "across-the-board" fuel tax would result in the most modest tax level (less than 0.5 cents per gallon), the inclusive nature of a tax which would also be applied to fuels for passenger vehicles was not a viable alternative.

Port Financing of Harbor Services. Alternatives whereby the Federal Government either reduces or eliminates its financing role for harbor services were also considered. Options ranged from complete divestment of harbor service financing to the various ports, to the cost-sharing of harbor operation and maintenance services between the Federal Government and the ports. The latter alternative could be based on cost-sharing formulas consistent with those enacted for harbor development projects.

Inherent in such alternatives was the expectation that the individual ports who do not currently have the ability to pay for harbor services would have to enact their own set of port fees or harbor charges to finance harbor services. Ultimately, this would likely result in a vast range of different non-Federal port specific fees at ports across the nation. For that reason, this option was considered to be fraught with the many problems attributed to the "Port Specific Fees" alternative discussed above: it would upset the existing competitive balance between U.S. ports, while also adversely impacting the flow of U.S. exports and imports.

DEVIL'S LAKE

Question 17. Do you have a completed feasibility study and favorable report from the Chief of Engineers on the Devil's Lake Emergency Outlet?

Response. No, we have not completed the feasibility study. The problem at Devils Lake has worsened, and we have an on-going flood-fight and an impending Natural Disaster that is requiring the expenditure of hundreds of millions of Federal dollars. Our efforts have been to focus on an emergency response and to proceed immediately to the environmental studies and design activities that we believe can best resolve the situation. To this end, we developed an Emergency Response Plan to concentrate on developing an emergency outlet from the west end of Devils Lake. We believe that the approach proposed in that plan is the most reasonable approach which bears the most potential to provide relief from the increasing lake levels.

Question 18. Have all the NEPA requirements been met?

Response. Not yet. We are proposing the NEPA investigations as part of the Emergency Response Plan. Funding to allow us to proceed with the Emergency Response Plan has been requested as part of the Fiscal Year 2000 Supplemental request that was included with the President's budget.

Question 19. If NEPA and the feasibility reports are complete, could you see that the committee gets a copy?

Response. The reports are not complete, but when they are we will forward copies to the committee.

Question 20. Has the "emergency" designation required and defined by the fiscal year 99 Energy and Water Appropriations Act been met?

Response. Yes, Senator. One of my predecessors sent a letter to the Speaker of the House and President of the Senate on October 15, 1997, that provided a determination that an emergency, as defined by Stafford Act, exists at Devils Lake.

Question 21. Why does the proposal suggest removing the standard "economically justified" as it applies to the Devil's Lake outlet? Is this standard Corps procedure?

Response. Arriving at the economics for this emergency project would be practically impossible using standard a Corps approach. Expected damages are based on probabilities, which are, in turn, based on extrapolations from observed data. The potential B/C ratio for this project could be anywhere from as low as about 0.2 up to as high as nearly 4.0. If the lake stops rising and never spills over into the Sheyenne River, the expected damages are considerably lower and the project would not be economically justified. On the other hand, if the lake continues to rise and is allowed to spill naturally into the Sheyenne River, Senator the damages would be much greater, and a B/C ratio greater than one would result. The experts differ on how to interpret the probabilities involved, but some climatologists tell us that the current "wet cycle" will continue for another 10 years or so, which could result in an overflowing scenario.

We do know that the lake has risen much faster in recent years than the probabilities would have predicted. We also know that the Federal Government has spent more than \$300 million in emergency responses to this situation, which could have been largely avoided by construction of a \$110 million—\$130 million outlet.

Question 22. What is the cost-benefit ratio for construction of this outlet?

Response. The potential cost-benefit ratio of an outlet could be anywhere from as low as 0.2 up to nearly 4.0. However, we have not calculated it exactly. Because the range of probabilities is so great, we cannot reliably predict what will happen. That is one of the reasons why our Emergency Response Plan is built around the need to forge ahead with design and environmental investigations. If the lake then reverses its trends, then we have only lost a relatively minor amount of effort. If, on the other hand, the lake continues to rise, as some predict, and we have not done the necessary design efforts and environmental studies, we will be faced with a disaster of major proportions and it will probably be too late to prevent that from happening. Some predictions indicate that we could be in "trouble" in just a few years from now.

Question 23. Do you recall at what point it was that the call in North Dakota shifted from that of an "inlet" to that of an "outlet?"

Response. Not specifically. We do know that back in the 1940's, the lake had shrunk down to a very small area, and that at times in the geological record, the lake has dried up completely. It would seem that the local people were very concerned with the possibility of the lake drying up. Through the 70's the lake rebounded slightly and regained it's "normal" size. In fact, we constructed some small levees to protect the City of Devils Lake in 1986. It is only in the mid-to-late 1990's that we witnessed the huge rises in the lake, making an outlet seem reasonable. There has been a range of voices on the issues, some calling for stabilization of the lake's level by means of both inlet and outlet controls. In the Energy and Water Development Appropriations Act of 1998, Congress specifically enjoined the Corps from studying inlet controls and directed that our efforts be applied to an outlet only.

RESPONSES BY DR. JOSEPH WESTPHAL TO ADDITIONAL QUESTIONS FROM SENATOR THOMAS

Question 1. The Corps lumped virtually all their Federal Activities Inventory Reform (FAIR) Act inventory items into two categories. Please provide more detailed information as to what those activities are, where they are located and how many FTEs are involved, e.g., engineering, mapping, campground management, dredging, etc?

Response. The Corps' Fair Inventory was submitted to higher headquarters in the format, including the categories, required by the Defense Reform Initiative Directive (DRID) 20. The DRID 20 categories were primarily designed to classify activities in support of military missions and, as a result, do not differentiate activities in support of the Corps Civil Works mission. It is our understanding is that the Corps DRID 20 inventory was aggregated and reconfigured by higher headquarters to meet FAIR Act guidance. The Office of Management and Budget further redefined the data by applying OMB's FAIR coding before returning it to the Department of Defense (DoD) for release to the public. Given the revisions made to the DRID 20 inventory that the Corps submitted, it is no longer possible to identify the Corps data within the published DoD FAIR inventory in order to provide the specific infor-

mation requested. However, I have asked the Corps to provide you an extract of the data that went into the initial Civil Works submission for this inventory. This extract will include the information you requested.

Question 2. Other Federal agencies, as well as government at other levels and private owners consider "program management" and "construction management" to be commercial activities. Numerous private firms provide these services. Does the Corps consider these activities "commercial" or "inherently governmental"? Please explain the Corps' classification of these activities.

Response. The Corps considers both its "program management" and "construction management" functions as inherently governmental. This is consistent with definitions in the Office of Federal Procurement Policy (OFPP) Policy Letter 92-1. Office of Management and Budget (OMB) Circular A-76 relies on OFPP Policy Letter 92-1 to provide a definition of "inherently governmental." Appendix A of Policy Letter 92-1 cites both "the determination of Federal program priorities or budget requests" and "administering contracts (including ordering changes in contract performance or contract quantities, taking action based on the evaluations of contractor performance, and accepting or rejecting contractor products or services)" as inherently governmental-the former defines "program management," the latter defines "construction management" within the Corps.

Question 3. The Intergovernmental Cooperation Act permits Federal agencies to provide certain services to State and local government, provided such services cannot be reasonably and expeditiously be acquired from the private sector. OMB Circular A-97 requires a certification that such services cannot be obtained from the private sector before a Federal agency can provide such services. With regard to the Corps' work for the Los Angeles School District, was such a certification made and what type of private sector market study did the Corps or LA Schools conduct prior to making that determination? Please provide a copy of any such certification for the record.

Response. The Los Angeles School District made a certification that the requested services "are services which cannot be procured reasonably and expeditiously by the LAUSD through ordinary business channels." The OMB Circular A-97 does not have a requirement for a private sector market study and no such study was conducted.

Question 4. Has the Corps ever subjected its program management and construction management activities to an OMB Circular A-76 commercial activities cost comparison to justify in-house performance and to determine that Corps performance is more cost effective than contracting out?

Response. Since the Corps regards both its program management and construction management activities as inherently governmental, it has done no OMB Circular A-76 commercial activities cost comparisons with regard to these functions.

Question 5. How is USACE provision of program management and construction management services for the LA School District considered a part of the statutory mission (civil works or military) of the Corps?

Response. There are two laws that provide authority for the Corps to support State and local governments. 10 USC 3036(d) authorizes the U.S. Army Corps of Engineers to provide reimbursable services to a State or political subdivision of a State if there is Federal assistance involved and the agency providing Federal assistance does not object. 31 USC 6505, the Intergovernmental Cooperation Act, authorizes executive agencies to provide certain reimbursable services to a State or local government when requested.

Question 6. The Corps has a policy of not even giving the appearance of competing with the private sector. How has the Corps justified its work for the LA School District in view of this policy?

Response. The Intergovernmental Cooperation Act provides authority for Federal agencies to support State and local governments when they make a request for assistance. The Corps role in such an endeavor does not preclude participation of private industry. The vast majority of the work for the Los Angeles School District will be contracted to the private sector.

Question 7. For the past 3 years, please provide a description of requests for "support for others" the Corps has declined due to the fact that such activities would be in competition with the private sector, including the identity of the requesting entity and a description of the requested services.

Response. We do not collect or keep records of requests that have been declined. Our regulations require that requests from State and local governments be accompanied by a certification from the requesting government that it cannot obtain the services reasonably and expeditiously through ordinary business channels. This pre-

cludes competition with the private sector. Our district commanders are required to concur with that certification. Support to Federal agencies falls under the provisions of the Economy in Government Act. In all of our Support for Others work, we stress augmenting the in-house resources of the requesting government or agency providing those services the requestor believes should be done by a government agency.

Question 8. For each of the past 3 years, how much did the Corps receive in reimbursable income for "support for others"?

Response. For the previous 3 years the Corps has accomplished the following amounts of reimbursable work under the Support for Others program (all non-DOD reimbursable work):

Fiscal year 1999—\$717M (Total Support for Others Program)

Fiscal year 1998—\$695M (Total Support for Others Program)

Fiscal year 1997—\$756M (Total Support for Others Program)

Question 9. If the Corps did not receive reimbursable income from other entities, and relied solely on its appropriated funds, would the Corps have to implement a reduction in force? If so, how many FTEs would be eliminated?

Response. We have about 1,100 FTEs doing Support for Others (SFO) work or about 5 percent of the civil work force. The actual impact would be based on how quickly the reimbursable funding is eliminated, and whether the reduction is total or partial. If the Corps civil program were required to stop all reimbursable work at the end of the current Fiscal Year, the problem of placing its employees then working on SFO projects would be exacerbated. Under such a scenario, there is some potential for utilizing RIF procedures. We probably would not be able to absorb all of them into our appropriated work in all locations and, even if we could, this would lower the amount of engineering work contracted to private firms. We would probably incur RIFs in districts that have a high SFO workload and those with specialized skills such as required in Superfund work. On the other hand, if the Corps were to complete the current reimbursable projects over the next three to 5 years, the personnel associated with those projects might be redirected to other Corps programs.

Question 10. With regard to "support for others" activities, what functions does the Corps perform in-house because it considers these functions inherently governmental and what functions does the Corps consider "commercial" and contract to the private sector from reimbursable income?

Response. The Corps functions related to "support for others" activities includes scoping, negotiating, awarding, administering, terminating contracts. There is a limited amount of in-house design work when such assistance is not readily available in the private sector or to keep our expertise current. Over seventy-five percent of the "support for others" program is contracted to the private sector.

RESPONSES BY DR. JOSEPH WESTPHAL TO ADDITIONAL QUESTIONS FROM SENATOR BAUCUS

Question 1. Did the Corps Missouri River Region, Northwestern Division consult with the U.S. Fish and Wildlife Service prior to releasing its draft Preferred Alternative for the Missouri River Master Manual? If so, please provide details (date[s] and substance) of any such consultations. If not, please explain why the U.S. Fish and Wildlife Service was not consulted prior to releasing the District's draft Preferred Alternative.

Response. Yes, the Corps' Missouri River Region consulted with the U. S. Fish and Wildlife Service on this subject on many occasions. A chronology of events is provided below.

- April 8, 1986. Corps initiated consultation with the USFWS on the effects of Missouri River Reservoir Operations
- Oct. 19, 1987. Corps transmitted a Biological Assessment outlining how Missouri reservoir operations may affect the federally listed interior least tern, piping plover, bald eagle, and peregrine falcon.
- May 18, 1990. Service letter initiated informal consultation on the Master Manual Review and Update study.
- Nov 14, 1990. USFWS provided the Corps a Biological Opinion concluding the operations may jeopardize the interior least tern and piping plover. The opinion outlined reasonable and prudent alternatives and reasonable and prudent measures, which if implemented would preclude jeopardy to both species. The opinion also outlined measures to help conserve the bald eagle.

- April 3, 1991. USFWS letter to the Corps asking the Corps to re-initiate consultation on water operations and indicating a biological assessment would not be needed.
- June 10, 1991. Letter to the Service from the Corps indicating an assessment would be prepared using the tools and data generated from the Master Manual Review process.
- September to December 1992. The Corps, Service, and basin States coordinated endangered species inputs and analysis of environmental alternatives for the Master Manual Review.
- Nov. 19, 1993. Service and Corps meet to discuss alternative strategies for Endangered species act consultation.
- Nov. 24, 1993. Missouri River Division Engineer and USFWS Region 6 Regional Director meet and agree on a strategy to initiate formal Sec. 7 consultation prior to identification of a preferred alternative.
- Dec. 8, 1993. Corps requested initiation of formal consultation on Master Manual and requested the biological significance of the alternatives under study to prevent jeopardy.
- Dec. 28, 1993. Service acknowledged Corps request by letter.
- Jan. 24, 1994. Service letter to the Corps requesting additional information.
- Feb. 9, 1994. Meeting between the Corps and Service to address additional information needs.
- Feb. 16, 1994. Service letter to the Corps concurring with the Dec 8, 1994 Corps letter requesting consultation and requesting an extension of time to complete the draft biological opinion.
- April 12, 1994. Per Corps Dec 8 letter, Service provides views on biological significance to threatened and endangered species of the alternatives under study.
- May 9, 1994. Corps advised Service and publicly announced the selection of a preferred alternative.
- May 20, 1994. Service letter requests an extension to August 9, 1994 to produce a draft biological opinion.
- June 13, 1994. Corps letter to the Service concurred with Service request for an extension.
- July 1994. Corps releases Draft Environmental Impact Statement on the Master Water Control Manual
- August 1994. Service completes draft biological opinion. Draft biological opinion states the Service will produce a final biological opinion when the Corps completes a final EIS.
- 1994–1998. Corps takes comment on draft EIS and reformulates alternatives.
- August 1998. Corps releases preliminary revised draft EIS describing a range of possible alternatives.
- Dec 4, 1998. Corps submit BA on current Missouri River water control plan to USFWS
- January 12–13, 1999. Consultation on the current water control plan.
- February 18–19, 1999. Consultation on the current water control plan.
- March 24–25, 1999. Consultation on the current water control plan.
- April 19, 1999. Submit Biological Assessment on the Missouri River Bank Stabilization and Navigation Project (BSNP)
- April 19, 1999. Amended proposed action to include all Kansas River projects
- April 29–30, 1999. Consultation on the current water control plan, BSNP, and Kansas River projects.
- May 20–21, 1999. Consultation on the current water control plan, BSNP, and Kansas River projects.
- July 7–8, 1999. Consultation on the current water control plan, BSNP, and Kansas River projects.
- September 28–29, 1999. Consultation on the current water control plan, BSNP, and Kansas River projects.
- November 16–17, 1999. Consultation on the current water control plan, BSNP, and Kansas River projects.
- December 15–16, 1999. Consultation on the current water control plan, BSNP, and Kansas River projects.
- January 25–26, 2000. Consultation on the current water control plan, BSNP, and Kansas River projects.
- Feb 4, 2000. USFWS Region 6 and 3 Regional Directors and staff meet with NWD Commander and staff for briefing on the status of consultation on current operations and the NWD preferred alternative.
- Since February 4, there has been a mixture of calls/meetings, which have been partly Section 7 consultation on existing operations and partly master manual related. They are:

- February 18, 2000—conference call with Wash DC, regional and field staff of USFWS and Corps on NWD PA for Master Manual.
- February 25, 2000. Conference call with USFWS regional and field staff on NWD PA for Master Manual. Service staff informs NWD staff the NWD preferred alternative does not have flow releases from Gavins Point dam needed to preclude jeopardy to threatened and endangered species.
- March 2 & 3, 2000. Consultation meeting on both existing operations and NWD PA. Service staff provides Corps staff draft magnitude, duration and frequency of flow volumes needed from Gavins Point Dam to prevent jeopardy in river reaches below Gavins Point Dam to federally listed species.

Question 2. Does the Corps believe that the Northwestern Division's draft Preferred Alternative for the Missouri River Master Manual will avoid a jeopardy opinion by the U.S. Fish and Wildlife Service related to the least tern, piping plover, and pallid sturgeon? If so, please describe what measures are proposed in the District's draft Preferred Alternative that the Corps believes will avoid a jeopardy opinion. If not, what are the Corps plans for avoiding such an opinion?

Response. The Corps is currently in informal consultation with the U.S. Fish and Wildlife Service discussing the elements of the NWD preferred alternative for the RDEIS, the effects on the listed species, and other potential actions the Service may request to avoid jeopardy. The Corps and Service are also in consultation on the existing operation of the main stem Missouri River Project under the current water control manual, the operation of the Bank Stabilization and Navigation Project, and existing operation of the Kansas River projects. Until the consultation process is completed and a Biological Opinion issued, it is not known whether the NWD preferred alternative in combination with other actions will avoid jeopardizing the listed tern, piping plover, and pallid sturgeon.

Question 3a. Please describe how the recreational benefits have been assessed and quantified for the purpose of comparing different alternatives.

Response. Several different sources of information were used to identify existing recreation visitation and uses for the six mainstem lakes and the intervening and Lower River reaches. The Corps has existing data on the lakes, and two States have data on their Lower River reaches. Several different methodologies were examined before the travel-cost methodology was selected for use in the model. Discussions of the sources of information and the methodology were discussed with the Economic Subcommittee that was formed by the Governors' Oversight Committee that was established at the onset of the Master Manual study. The existing visitation participated in a variety of activities, and each activity had a value associated with it, some with relative high values (e.g., boating, water skiing) and others had relatively low values (e.g., picnicking, sight seeing). Estimates were then made as to how visitation would be affected by changing levels in the lakes and river flows such that an annual value for the visitation and associated activities could be computed. For example, as the lakes decline during droughts, the visitation and economic value will drop. As the lake recovers after the drought, the visitation will eventually return to pre-drought levels, only at a slower rate than it declined (people may participate in other forms of recreation in other areas and not go back to the lakes immediately on recover of the lake levels).

Question 3b. How have recreational benefits not associated with Corps recreational areas be accounted for?

Response. The Lower River reach of the Missouri River was covered by two recreation surveys. The Nebraska reach was surveyed in 1992 by the Nebraska Game and Parks Commission. A preliminary report of the survey findings was provided to the Corps in October 1992 (finalized in March 1993) for use in the Master Manual study. Similarly, the Missouri Department of Conservation had a survey conducted and a report completed in September 1989 entitled "Recreational Use Survey of the Missouri River". Additionally, oxbow lakes in close proximity to the Missouri River were also surveyed in January 1993 by The Gallup Organization, and these recreation activities were added to the recreation value in the Sioux City to Rulo reach.

Question 3c. How do the benefits of recreational activities such as fishing, camping, canoeing, and waterfowl hunting between Gavins Point and St. Louis compare for the Northwestern District's draft preferred alternative and the Missouri River Natural Resources Committee (MRNRC) spring rise/split season alternative?

Response. The Corps analyzed potential impacts over a 100-year period of analysis, the 1898 to 1997 period on which flow data are available. The average annual recreation benefits for that period are estimated to be \$19.6 million per year for the NWD preferred alternative and \$18.3 million per year for the MRNRC alternative,

a reduction of \$1 .3 million per year. This is a loss of almost 7 percent of the benefits of the NWD preferred alternative.

Question 3d. How do the benefits of recreational activities such as fishing, camping, canoeing, and waterfowl hunting above Gavins Point to Fort Peak compare for the Northwestern District's draft preferred alternative and the Missouri River Natural Resources Committee (MRNRC) spring rise/split season alternative?

Response. For the 100-year period of analysis, the average annual recreational benefits are \$68.3 million for the NWD preferred alternative and \$68.8 million for the MRNRC alternative. This difference represents a gain in benefits for the MRNRC alternative relative to the NWD alternative of \$0.5 million, or a gain in benefits of 0.7 percent relative to the NWD alternative's benefits. This gain is due primarily to the greater conservation measures included in the MRNRC alternative. (Relative minimum storage levels in the 30's/50's/80's droughts of 27/42/43 MAF for the NWD preferred alternative and 31/46/45 MAF for the MRNRC alternative.)

Question 4. Particularly as it relates to the biological and economic elements of the alternative, please describe the independent peer review (i.e., external to the Corps) that has been conducted on the data, methods, assumptions, and conclusions related to the Northwestern Division's draft preferred alternative.

Response. At the onset of the study, the basin Governors established the Governor's Oversight Committee to track the Corps' analyses. This committee recognized the need to involve their technical experts, and this committee established four technical subcommittees to work with Corps staff as the technical analyses were developed, required data acquired, and the resulting models implemented. These four technical subcommittees were as follows: Hydrology and Modeling Subcommittee, Water Quality Subcommittee, Economics Subcommittee, and Environmental Subcommittee. These technical subcommittees were comprised of staff from appropriate State agencies, and various Federal agencies also participated in the review. For example, the Environmental Protection Agency participated in the Water Quality and Environmental Subcommittees efforts, and the U.S. Fish and Wildlife Service participated in the Environmental Subcommittee efforts. These technical subcommittees were active in the 1991 through 1994 timeframe.

Some of the technical analyses were developed following the review and comment period for the July 1994 Draft EIS. Specifically, the flood control model was converted to a daily time step, the navigation model was revisited and revised, a portion of the native river fish physical habitat model was revised, and interior drainage and groundwater models were developed. There was no peer review of the flood control and navigation National Economic Development modeling efforts. The Environmental Defense Fund had a peer review conducted of the water compelled rate analysis that was conducted for the navigation analyses; however, this analysis was not included in the modeling effort that led to the selected of the NWD's preferred alternative. The revision of a portion of the physical habitat model was not reviewed; however, the revision was done to make the modeling procedure consistent with the upper river reaches (Lower River (downstream from Gavins Point to the mouth) reaches were revised). Mr. Lanny Meng from Oregon, Missouri, conducted a peer review of the interior drainage model. He is an engineering graduate from the University of Missouri, and a farmer in one of the levee units that were modeled. He was unable to find anything that would significantly change the model or its results. The results of this model were not a factor in the selection of the NWD preferred alternative as these results were not available at the time the alternative was selected. The U.S. Geological Survey and the Food and Agricultural Policy Research Institute were hired by the Missouri Levee and Drainage District Association and Missouri Farm Bureau to conduct a groundwater modeling and economic impact analysis of a levee district in Missouri. The results of this independent analysis were very similar to those of the Corps for three other levee districts. Results from this model were also not a factor in the selection of the NWD preferred alternative as the results were not available at the time the alternative was selected.

Question 5. Please discuss the basis for the Northwestern Division's assertion that its draft Preferred Alternative will provide 43 percent more least tern and piping plover habitat than the alternative supported by the MRNRC. In your response, please specify:

- the river reaches in which the new or expanded nesting habitat would be created under the Northwestern Division and MRNRC alternatives;
- the current distribution of current tern and plover nesting along the Missouri River; and
- the river reaches considered by State and Federal wildlife experts to be priority nesting areas for recovery of these two species.

If there are differences in the location of habitats created by the two alternatives, please describe the independent scientific support (e.g., evaluations by non-Corps affiliated biologists) for concluding that the habitat to be created by the Division's preferred alternative would be of equal or greater benefit to tern and plover recovery than that to be created by the MRNRC alternative.

Response. The NWD preferred alternative provides 43 percent more habitat on an average annual basis than the current water control plan. The NWD preferred alternative would provide better habitat than the current water control plan in all four river reaches that currently have nesting-downstream from Fort Peck, Garrison, Fort Randall, and Gavins Point. The MRNRC alternative provides a 37 percent overall increase in habitat, with this improvement in habitat occurring in three of the four reaches (decreases in the Fort Peck reach). In the last month, the U.S. Fish and Wildlife Service has stated for the first time that the Fort Peck reach is a low priority reach. This is, however, the first that the Corps has been informed that one should discount habitat improvement in this reach. In fact, the Environmental Subcommittee insisted that one reach should not be given more importance than the other three. The model, therefore, treats all four reaches equally. The results of this analysis are included in table 1:

Table 1
Tern and Plover Habitat Values Computed for the Master Manual Study
(Acres of habitat per year)

| | Total | Ft. Peck | Garrison | Ft. Randall | Gavins Point |
|--|-------|----------|----------|-------------|--------------|
| CWCP | 220.5 | 50.3 | 97.9 | 32.7 | 39.5 |
| MRNRC | 302.2 | 22.3 | 36.4 | 74.3 | 69.3 |
| NWD PA | 315.6 | 81.3 | 152.1 | 38.7 | 43.4 |
| Percent Change from the Current Water Control Plan | | | | | |
| MRNRC | 37 | -56 | 39 | 127 | 75 |
| NWD PA | 43 | 61 | 55 | 18 | 10 |

Question 6. What affect do Corps studies indicate that a 15,000 cfs or less spring rise at the Gavins Point dam would have on interior drainage of floodplain farm fields below the dam? How does this compare to the expected affect that the North-western Division's draft Preferred Alternative would have on drainage of these farm fields? What affect do Corps studies indicate that a 15,000 cfs or less spring rise would have on summer interior drainage of floodplain farm fields when it is coupled with the low summer flow regime recommended in the MRNRC's split season alternative? How does this compare to the expected affect that the District's draft preferred alternative would have on summer farm field drainage?

Response. The Corps' analysis of interior drainage damages is based on crop production throughout the entire year. A breakdown of the lost production in the various seasons is not conducted. For example crop planting could be delayed or the first planting may be lost in the spring, but an alternative crop could be planted in the early summer and be harvested. Conversely, a crop could be planted and growing without any impediments when a summer runoff event impedes drainage to the extent that crop damage occurs. The model tracks the costs incurred to plant, nurture, and harvest a crop and the potential yield of that crop on an annual basis to come up with an annual interior drainage damage value. This analysis of seven representative levee units was completed on Friday, March 10, and the results are summarized in Table 2. The levee units are at river miles 575, 536, 497, 488, 351, 248, and 100. The first six units have Federal levees, and the last unit has private levees.

Table 2 shows these damages on an annual basis. The fourth column is the difference between the damages of the two alternatives in each year. If that number is positive, a 1 is put into the last column. This means that the greater damages may be attributable to the spring rise as this would be the primary time of the year that flows would be greater under the MRNRC alternative. Conversely, if the number is negative in the fourth column, a zero is put in the last column. This means that the lower damages for the MRNRC alternative may be attributable to the split season as this is the primary time of the crop season that the flows will be lower for this alternative. The last column is summed at the bottom, and the number in that cell identifies the number of years that the spring rise may be the cause of the

increased damages. In summary, the spring rise may have been the cause of increased interior drainage damages in 25 of the 45 years modeled, or 56 percent of the years. Damages may have been reduced by the split season in 19 of the 45 years, or 42 percent of the years. In 1956 there was no difference.

The average annual damages for the 7 modeled levee units are computed at the bottom of columns 2 and 3 and the difference is computed at the bottom of column 4. There is a difference of \$22,000 between the two alternatives, with the MRNRC alternative having the greatest damages:

Table 2
Total Interior Drainage Damages for Seven Levee Units

| | MRNRC Total | NWD PA Total | Difference | Potential SR Im- pact |
|-----------|----------------|-----------------|------------|-----------------------------|
| 1950 | 1.094 | 0.909 | 0.186 | 1 |
| 1951 | 2.547 | 2.368 | 0.179 | 1 |
| 1952 | 1.095 | 0.952 | 0.143 | 1 |
| 1953 | 0.622 | 0.419 | 0.204 | 1 |
| 1954 | 0.593 | 0.699 | -0.106 | 0 |
| 1955 | 0.331 | 0.330 | 0.001 | 1 |
| 1956 | 0.027 | 0.027 | 0.000 | 0 |
| 1957 | 0.426 | 0.540 | -0.114 | 0 |
| 1958 | 1.685 | 2.052 | -0.366 | 0 |
| 1959 | 0.361 | 0.483 | -0.121 | 0 |
| 1960 | 0.698 | 0.477 | 0.221 | 1 |
| 1961 | 0.628 | 0.655 | -0.027 | 0 |
| 1962 | 0.693 | 0.684 | 0.009 | 1 |
| 1963 | 0.224 | 0.190 | 0.034 | 1 |
| 1964 | 0.971 | 1.029 | -0.058 | 0 |
| 1965 | 2.591 | 2.504 | 0.088 | 1 |
| 1966 | 0.531 | 0.269 | 0.262 | 1 |
| 1967 | 2.508 | 2.536 | -0.028 | 0 |
| 1968 | 0.518 | 0.286 | 0.233 | 1 |
| 1969 | 2.254 | 2.288 | -0.034 | 0 |
| 1970 | 1.395 | 1.064 | 0.331 | 1 |
| 1971 | 0.796 | 0.490 | 0.307 | 1 |
| 1972 | 0.886 | 0.644 | 0.242 | 1 |
| 1973 | 1.716 | 1.592 | 0.125 | 1 |
| 1974 | 1.286 | 1.112 | 0.174 | 1 |
| 1975 | 1.365 | 1.422 | -0.057 | 0 |
| 1976 | 0.339 | 0.084 | 0.255 | 1 |
| 1977 | 0.864 | 0.850 | 0.014 | 1 |
| 1978 | 1.253 | 1.623 | -0.370 | 0 |
| 1979 | 0.708 | 0.468 | 0.240 | 1 |
| 1980 | 0.479 | 0.384 | 0.095 | 1 |
| 1981 | 1.261 | 1.360 | -0.099 | 0 |
| 1982 | 2.451 | 2.257 | 0.195 | 1 |
| 1983 | 1.915 | 2.345 | -0.430 | 0 |
| 1984 | 4.985 | 5.424 | -0.439 | 0 |
| 1985 | 0.985 | 0.611 | 0.374 | 1 |
| 1986 | 3.037 | 3.368 | -0.331 | 0 |
| 1987 | 0.941 | 0.881 | 0.060 | 1 |
| 1988 | 0.101 | 0.083 | 0.018 | 1 |
| 1989 | 1.468 | 1.528 | -0.060 | 0 |
| 1990 | 1.359 | 1.503 | -0.144 | 0 |
| 1991 | 0.570 | 0.607 | -0.037 | 0 |
| 1992 | 0.397 | 0.491 | -0.094 | 0 |
| 1993 | 11.190 | 11.304 | -0.114 | 0 |
| 1994 | 0.937 | 0.900 | 0.037 | 1 |
| Ave. Ann. | 1.402 | 1.380 | 0.022 | |
| Total | | | | 25 |

Question 7. How would system lake levels in June and July compare between the Northwestern District's draft preferred alternative and the MRNRC alternative, if a spring rise/split season (such as proposed by the MRNRC) were not implemented during droughts or floods?

Response. In a year that the spring rise were to occur as scheduled (not shut off due to downstream flooding), approximately 770,000 acre-feet of water would be required above that required to make the flat release for the current water control plan or the NWD preferred alternative. Having a split in the navigation season where 18,000 cfs is the target flow would save approximately 2,000,000 acre-feet, or about 35,000 acre-feet per day. At the rate of 35,000 acre-feet per day, the 770,000 acre-feet of water would be made up in 22 days. Since the savings in water would begin on about June 18 (June 15 plus 3 days to reduce the flows from the spring rise value), the date on which water use would be the same in a spring rise/split season year would be July 10. There are factors that would affect these computations. For example, if the spring rise were reduced on some days because of downstream flooding, the amount of extra water used would be reduced and the "break-even point" would be earlier than July 10. If the rate required for the flat release were less than an extra 5,000 cfs, which was used in the computations, the "break-even date would move out further than July 10.

Another, not so apparent, factor comes into play in determining what storage levels, and subsequently lake levels, would be. This factor is the service level computation that is made periodically to determine if the releases need to be increased to ensure that the flood control storage zones are emptied by the following March 1st. For example, this check determined that release rates should be about 30,000 cfs over "normal" levels in 1997 in the spring months to address the significant amount of water in storage and the snow pack on the plains and in the mountains. Ultimately, the service level that year increased to even higher levels as the fall months approached and the forecast for runoff became higher than forecasted earlier in the year. With about 2 months removed from the evacuation period (about July 1st to August 20) the model responds by moving more water earlier in many years to begin the evacuation process earlier. This would result in an increase of water moved prior to the spring rise and the split season, which means that the "break-even point" would move out beyond the July 10 date. There will always be a "break-even point" if there is not enough water saved by the split season because subsequent evacuation rates will be less for the non-MRNRC alternatives.

Total storage levels on June 30 were compared for NWD's preferred alternative and the MRNRC alternative. In 52 of the years the storage level of the MRNRC alternative was lower than NWD's preferred alternative. In many of the drought years, the storage level was higher for the MRNRC alternative because of the increased conservation that alternative provides in droughts. When one considers this factor, the NWD preferred alternative has higher lake levels than the MRNRC alternative on June 30 about two-thirds of the time. When July 31st storage levels were compared, the NWD preferred alternative had higher lake levels in 21 years, or more than one-quarter of the time, when the higher conservation factored years are removed.

Question 8. Please provide data on the percentages of agricultural commodities moved by Missouri River navigators in July and August over the period of 1990 to 1998.

Response. The requested tonnages and percentage of annual total is provided in Table 3.

Table 3
Missouri River Navigation—Agricultural Tonnages ¹

| Year | July | August | Total | % July | % August | Sum of % |
|-------------------------|---------|---------|-----------|--------|----------|----------|
| 1990 | 108,783 | 110,858 | 743,488 | 14.6 | 14.9 | 29.5 |
| 1991 | 166,389 | 122,628 | 1,059,414 | 15.7 | 11.6 | 27.3 |
| 1992 | 92,107 | 155,921 | 910,272 | 10.1 | 17.1 | 27.2 |
| 1993 ² | 20,869 | 67,231 | 1,024,632 | 2.0 | 6.6 | 8.6 |
| 1994 | 77,240 | 108,069 | 1,117,637 | 6.9 | 9.7 | 16.6 |
| 1995 | 92,700 | 66,720 | 864,594 | 10.7 | 7.7 | 18.4 |
| 1996 | 63,086 | 133,257 | 1,019,521 | 6.2 | 13.1 | 19.3 |
| 1997 | 123,924 | 108,170 | 1,115,604 | 11.1 | 9.7 | 20.8 |
| 1998 | 127,449 | 95,875 | 1,161,268 | 11.0 | 8.3 | 19.2 |
| Average all 9 Yrs. | 96,950 | 107,637 | 1,001,826 | 9.7 | 10.7 | 20.4 |
| Average w/o 1993 | 106,460 | 112,687 | 998,975 | 10.7 | 11.3 | 21.9 |

¹Agricultural tonnage includes farm, food, and fertilizer products.

²Missouri River closed to navigation during much of July and August 1993.

RESPONSES BY DR. JOSEPH WESTPHAL TO ADDITIONAL QUESTIONS FROM SENATOR
MOYNIHAN

Question 1. Dr. Westphal, the New York and New Jersey Harbor project is immensely important to the future of the Port of New York and New Jersey. If we do not deepen these navigation channels, the Nation's largest Eastern Seaboard port will decline rapidly to the primary benefit of Halifax, Nova Scotia. Such a development would not serve the National interest. I understand that the New York District of the Army Corps of Engineers has completed its review of the project and that the project is before Army Corps headquarters. I am concerned, however, that the Administration will not act soon enough to ensure that the project is included in its draft water resources development (WRDA) legislation. Yesterday 15 of my colleagues and I wrote to Jacob J. Lew, Director of the Office of Management and Budget, to convey this concern. Will the New York and New Jersey Harbor project be included in the Administration's draft WRDA bill?

Response. We have recommended to OMB that authorization of this project be included in the Army's WRDA 2000 proposal, and we also recommended the project for construction in the Chief of Engineers Report completed in May 2000.

Question 2. Dr. Westphal, the Water Resources Development Act of 1986 (WRDA 86) established Federal/non-Federal cost-shares for navigation projects. WRDA 86 stipulated 65 percent of the cost of projects that deepen channels to 45 feet should be covered by the Federal Government and 35 percent of the cost should be borne by the non-Federal sponsor. At the time, the 45-foot depth was adequate to meet the needs of the vast majority of commercial shipping vessels and fulfill the Federal Government's responsibilities concerning interstate, and indeed international, commerce. Over the past 14 years shipping vessel design has undergone almost revolutionary change. The result of this change is that 45 feet of draft will no longer accommodate most newer container ships. Times have changed, the demands on our Nation's ports have changed, and I believe that this provision of law must be changed. Will the Administration propose, in its draft WRDA legislation, extending the 65 percent Federal/35 percent non-Federal cost-share to navigation projects designed to provide 50-foot or 55-foot drafts?

Response. We have been considering proposing a change in how the cost sharing for deep draft navigation projects is computed. However, we will make no specific recommendations until we have completed the study authorized in Section 401 of the Water Resources Development Act of 1999. This study is currently underway at our Institute for Water Resources and is expected to be completed sometime this summer.

Question 3. Last summer we included a provision in the Water Resources Development Act that turned the responsibility for managing the cleanup of Onondaga Lake over to the Corps of Engineers. Onondaga is the most polluted lake in the country. Its cleanup has been long in coming and should proceed to the next stage as soon as possible. We are confident in the Corps' ability to carry out this task but are concerned about the pace of the initial steps being taken. I would like to know what roles the office of the Assistant Secretary, Corps Headquarters, and the Buffalo District office will play in the day-to-day operations of the cleanup. In addition, I would like to know what the Corps' timeline is for providing guidance implementation of the Onondaga cleanup. We simply must move this project forward.

Response. The Buffalo District will have day-to-day operating responsibilities for the Onondaga Lake project and its commander will represent the Army in the new Onondaga Lake Partnership. The Army Corps of Engineers Great Lakes and Ohio River Division will provide oversight and the Army Corps of Engineers Headquarters will provide the implementation guidance. A senior official at Headquarters will be responsible for approving changes to the Onondaga Lake Management Plan and extensions to the Partnership beyond 15 years. The implementation guidance was finalized and issued in April 2000.

Question 4. Before management of the FUSRAP cleanup sites was transferred to the Corps, the Department of Energy required that the radioactive waste evacuated from FUSRAP sites (including the Tonawanda sites in New York) be disposed at facilities licensed by the Nuclear Regulatory Commission (NRC). Why does the Corps now permit these radioactive wastes to be disposed at sites not licensed by NRC, including RCRA landfills in California and Idaho?

Response. Following transfer of program execution responsibilities, the Corps sought guidance from the Nuclear Regulatory Commission (NRC) and other regulators regarding the regulatory status of FUSRAP materials. Unlike Department of Energy (DOE), the Corps is not self-regulating with respect to radioactive materials. DOE policy for disposal of low-level radioactive waste is to use DOE-owned facilities,

with use of commercial facilities as the exception and not the rule. However, DOE, like the Corps, is subject to Resource Conservation and Recovery Act (RCRA) and uses RCRA disposal facilities where appropriate, in addition to their own and NRC licensed facilities. We are aware of two instances in which DOE used a RCRA facility for the disposal of FUSRAP material that was similar to the material the Corps sent to California.

Based on guidance from the NRC, the Corps has identified a range of commercial disposal options that provide for the safe disposal of FUSRAP materials. The NRC guidance critical to an expanded use of RCRA disposal facilities was their determination that residual materials from ore processed prior to the passage of Uranium Mill Tailings Recovery and Conservation Act (UMTRCA) and not pursuant to a license in effect at the time of UMTRCA's enactment or thereafter are not subject to regulation under the Atomic Energy Act. In addition, the NRC has stated that both RCRA and NRC-regulated disposal facilities are protective, and that public health and the environment benefit from an increase in the disposal options which are available.

Having a greater number of options for the disposal of the FUSRAP material has reduced the potential for impacts resulting from capacity limitations, weather delays, permit or license violations, and court injunctions, and has greatly reduced disposal costs by increasing competition.

Question 5. As a public health, safety and worker protection matter, shouldn't the nuclear wastes from FUSRAP sites be disposed in facilities licensed by NRC that are specially designed and constructed to handle radioactive materials?

Response. Nuclear Regulatory Commission (NRC) licensed facilities are not the only disposal facilities that can safely contain radioactive material. While radionuclides are not listed or characteristic wastes under RCRA, the statute allows a State to regulate the disposal of certain radioactive materials in conjunction with its RCRA program. Through their permitting process, the State regulating agencies can and do impose the additional requirements needed to protect public health and the environment. There are a number of RCRA disposal facilities nationwide that were designed and constructed to provide for safe and protective disposal of hazardous wastes and radioactive materials.

RCRA disposal facilities must meet the worker protection requirements of the Occupational Safety and Health Act (OSHA) in 29 CFR 1910.120 (p) for hazardous waste operations and in 29 CFR 1910.1096 for ionizing radiation. As with public health and safety issues, the disposal facility's permit may include requirements for worker safety that are more stringent than the Federal standards.

The Corps is committed to handling and disposing all hazardous materials in a manner that provides for worker safety, protects public health and the environment, and complies with applicable regulatory guidance. The FUSRAP materials being disposed by the Corps in RCRA hazardous waste facilities are primarily residuals from the processing of ore. The radionuclides in the residuals originated from the naturally occurring uranium and thorium decay series in the ore material. In many cases, FUSRAP sites were remediated when operations were completed in accordance with the standards applicable at the time, so the average concentrations of radionuclides remaining at these sites is generally very low. So low in fact, that most of these materials do not meet the Department of Transportation's definition of radioactive material.

Question 6. Has the Corps determined a permissible dose to an individual for the disposal of FUSRAP materials at a RCRA Subtitle C or other non-radioactive > material licensed disposal facility? If so, what is the permissible dose to an individual? Are there different permissible doses, or concentrations, depending upon the classification of the FUSRAP material?

Response. The Occupational Safety and Health Administration (OSHA) and the facility's permitting agency, not the Corps, determine permissible doses at RCRA facilities. RCRA disposal facilities must meet the worker protection requirements of the Occupational Safety and Health Act (OSHA) in 29 CFR 1910.120 (p) for hazardous waste operations at disposal facilities and in 29 CFR 1910.1096 for ionizing radiation. The OSHA standard sets a maximum permissible dose that is equivalent to the NRC permissible dose, but does not explicitly require that doses be kept as low as reasonably allowable (ALARA) as does the NRC. Though not required by the OSHA regulations, we have reviewed contractor prepared dose estimates for RCRA Subtitle C facility workers who could be handling the FUSRAP ore processing residuals. These conservative estimates reveal that such workers would receive less than the dose allowed for members of the public by the NRC.

Classification of the FUSRAP material has no impact upon the permissible dose allowed by the regulations, and no impact on the dose received by the worker. It

is the concentration of the particular material being received at the disposal facility that determines the dose received by the worker.

Question 7. Has the Corps identified minimum radiation protection and environmental protection standards that are to be applied to a RCRA Subtitle C or other non-radioactive material licensed disposal facility that disposes of unimportant quantities of radioactive material or disposes of non-NRC licensed uranium mill tailings?

Response. The minimum worker protection standards at RCRA disposal facilities are the OSHA regulations. The minimum public health and environmental protection standards at RCRA disposal facilities are established by the facility's permitting agency, consistent with the requirements of RCRA. The Corps restricts its disposal of FUSRAP materials to RCRA disposal facilities which have permit language specifically addressing the receipt of low concentrations of radioactive material. Further, prior to disposal of the residuals at a RCRA facility, it is Corps policy to obtain the written concurrence of the facility's regulatory agency relative to the acceptability of the residuals at the facility.

RCRA workers are protected from on the job hazards via applicable OSHA general industry and construction standards and corresponding implementing programs.

The Corps believes that appropriately permitted facilities that allow the acceptance of limited concentrations of radioactive material are protective. The Corps will not allow disposal of radioactive materials in any facility whose permit does not address acceptance of radioactive materials.

RESPONSES BY DR. JOSEPH WESTPHAL TO ADDITIONAL QUESTIONS FROM SENATOR GRAHAM

Question 1. Can you describe the peer review process used in developing the Restudy?

Response. Peer review has been an integral part of the Comprehensive Everglades Restoration Plan. At the heart of preserving the integrity of the science, peer review is used to provide independent review of the science being applied and to solicit advice on difficult issues. In past years, independent panels have been formed to: (a) provide annual reviews of the overall Florida Bay science program (the Boesch panel); (b) review and advise on specific issues, such as the perceived conflict among endangered species restoration objectives (kites vs. storks), the overall high water research program, and the Cape Sable seaside sparrow research program; and (c) provide guidance and review for the Kissimmee River restoration program's ecological objectives and research and monitoring protocols. These efforts were used as a basis for much of the science used by the Restudy.

Fundamental documents used by the Restudy (CERP) have also received independent review. For example, the 31 chapters in *Everglades: The Ecosystem and Its Restoration* (Davis & Ogden, 1994) are a primary source for the basic hypotheses and technical understandings of the Everglades system. Each of the 31 chapters was anonymously refereed by three or more outside reviewers. Additionally, much of the natural systems research conducted by the State and Federal land management agencies is published in peer-reviewed journals.

For the CERP, the process for developing conceptual ecological models and the models themselves have been reviewed. A team of scientists from the Restudy's participating agencies and the University of Miami's Rosenstiel School for Marine and Atmospheric Science jointly developed and managed the process of organizing existing facts and hypotheses into a format that would support the planning and evaluation of the restoration programs. The process was designed specifically to support the development of performance measures and restoration targets to guide the Everglades restoration program. The Restudy's Alternative Evaluation Team used these conceptual ecological models as a basis for developing conceptual hydrologic and biological performance measures and targets during the plan formulation and selection process. The University of Miami scientists provided the initial training and review for the conceptual models. The conceptual models were fully reported in an invited session of the 1997 annual Conference of the Society for Ecological Restoration.

The South Florida Water Management District has an "Expert Assistance" program for bringing outside experts to advise and review the scientific work of District staff. This process was used to review the River of Grass Evaluation Methodology (ROGEM). ROGEM was used during the plan formulation, evaluation, and selection process to determine the relative ecological value of different alternative plans.

The models used in the conceptual planning stage have been reviewed both to certify their integrity and to determine if they are being used appropriately. The South Florida Water Management Model has been documented and the documentation

peer reviewed (Loucks et al., 1998.). Likewise, the Natural Systems Model, Version 4.3 was reviewed by the Department of Interior, U. S. Geological Survey (Bales et al., 1997). Modifications to the Natural System Model recommended as a result of the U.S. Geological Survey review were incorporated in the version of the model that the Comprehensive Plan development process used.

In subsequent phases of the CERP, an adaptive assessment protocol will be used for evaluating ecosystem responses during implementation of the restoration program. The program will include a team of senior Everglades and wetland ecologists and hydrologists, charged with the responsibility of reviewing and interpreting system responses, revising conceptual models and working hypotheses, and recommending plan modifications. The products of this process will be reviewed using peer review protocols.

Question 2. Can you describe the process used to develop the scientific and engineering aspects of the Restudy, including who was at the table making technical decisions?

Response. The CERP was formulated and evaluated by two Restudy sub-teams, the Alternative Development Team (ADT) and the Alternative Evaluation Team (AET). Each of these teams had a specific planning purpose. The Alternative Development Team, lead by a senior hydrologist from the Corps of Engineers, was responsible for designing each alternative plan in response to the Alternative Evaluation Team's evaluations of the previous plan iteration. The designs of these alternative plans were built into the South Florida Water Management Model, a regional-scale hydrologic model, to identify plan effects. The Alternative Evaluation Team, lead by a senior ecologist from the South Florida Water Management District, was responsible for evaluating each plan's strengths and weaknesses, and describing plan shortfalls to the Alternative Development Team. This repetitive formulation and evaluation process progressively refined and improved the performance of subsequent alternative plans.

Because of the large and geographically dispersed number of people involved and interested in the Restudy, the Internet was used to communicate formulation and evaluation results. This allowed the Restudy Team to solicit comments from a broad base of the public and permitted people to participate as team decisions were being made.

The Alternative Development Team was a multi-agency team of about 30 planners, engineers and scientists. The team identified and designed specific components to be simulated in the South Florida Water Management Model with the intent to improve the performance of each alternative plan and to test different strategies for component modification identified by the Alternative Evaluation Team.

The Alternative Evaluation Team was also a multi-agency team of about 50 biological and physical resource specialists, planners, and engineers. The Alternative Evaluation Team used multiple analytical tools to accomplish the alternative plan evaluations: performance measures from the South Florida Water Management Model computer simulations, the Across-Trophic-Level System Simulation (ATLSS) model, and water quality models.

Question 3. Were these people interest group scientists or government agency scientists?

Response. Accomplishment of the feasibility study was primarily the responsibility of the Corps of Engineers, Jacksonville District, and the non-Federal cost sharing partner, the South Florida Water Management District. However, due to the complexity of the problems to be considered and the desire to utilize the skills of specialists in other agencies an interdisciplinary/interagency approach was used. Inter-agency staffing was essential to facilitate the flow of needed information among agencies, and, more importantly, to achieve approval by the key public agency stakeholders.

The diversity of interests with strongly held ideas made it necessary to involve all of them early in defining the problems and opportunities at the first steps of planning. Failure to at least offer all interests the opportunity to participate from the very beginning would have eventually led to the need to retrace many steps to account for their concerns. As a result, a variety of agencies signed up for the Restudy team at the start. Further, the technical complexity of the Everglades problems and opportunities required an array of professional disciplines to understand the many factors and interrelationships involved. No one technical discipline possessed all of the knowledge, skills and abilities needed to address the situation. Technical problem solving could only proceed when the views of all disciplines were brought to bear through cooperative teamwork.

With over 150 active team members, the study team included State and Federal agencies, two tribal governments, and local governments. These agencies included

the National Park Service, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the United States Geologic Survey, the Natural Resources Conservation Service, and the U.S. Environmental Protection Agency. Tribal participation included the Seminole and Miccosukee Tribes. State agency participation included the Florida Fish and Wildlife Commission, the Florida Department of Environmental Protection, and the Florida Department of Agriculture and Consumer Services. Local governments including Miami-Dade County, Broward County, Palm Beach County, Martin County and Lee County also participated.

Although the team makeup was restricted to representatives from governmental agencies, the Restudy solicited views and comments from other non-governmental groups. Besides having an extensive public outreach program, the Restudy team allowed the public to attend its meetings, review interim products, and provide comment throughout the study process. Most notably, the Restudy team developed a web page that encouraged the public to comment on alternatives during the plan formulation phase. This extremely open process ensured issues were evaluated and addressed by the scientists and engineers responsible for technical aspects of the study.

Question 4. Something that members of this committee may not be aware of are Florida Sunshine laws. Can you explain how Florida Sunshine laws impacted the Restudy development process?

Response. The Florida Sunshine laws establish a basic right of access to most meetings of boards, commissions and other governing bodies of State and local governmental agencies or authorities and access to documents. Although the Corps of Engineers is not bound by State requirements, the CERP was developed in an extremely open and inclusive manner consistent with the objective of these laws.

Question 5. Are cost-benefit analyses required by law for environmental restoration projects?

Response. The Corps of Engineers has many authorities that relate to environmental restoration. Generally, these provisions require that any projects implemented under these authorities be "justified" or cost-effective. For example, Section 204 of the Water Resources Development Act of 1992, Beneficial Uses of Dredged Material, requires that "the environmental, economic, and social benefits of the project, both monetary and non-monetary, justify the cost thereof". Section 1135 of the Water Resources Development Act of 1986, Project Modifications for the Improvement of the Environment", requires that these modifications be "feasible" and improve the quality of the environment in the public interest". One other example is Section 206 of the Water Resources Development Act of 1996, Aquatic Ecosystem Restoration, requires that aquatic ecosystem restoration and protection projects be "cost-effective" and "improve the quality of the environment and is in the public interest".

Although these provisions vary in their requirements, as a matter of policy the Corps requires that environmental restoration projects be "justified". Since most environmental restoration projects provide benefits that are non-monetary, cost effectiveness and incremental cost analyses have been developed to evaluate potential projects. The cost effective analysis ensures that the least cost solution is identified for each possible level of environmental output and the incremental cost analysis of the least cost solutions shows changes in costs for increasing levels of environmental outputs.

Question 6. Can you explain the cost-sharing proposal in the Restudy between the Federal Government and the State? Are there any other water resource projects shared completely on a 50-50 basis?

Response. The cost sharing of the Comprehensive Everglades Restoration Plan (CERP) is in accord with Section 528 of the Water Resources Development Act of 1996. This legislation specified that the non-Federal share of restoration features shall be 50 percent. There are no other Corps water resources and ecosystem restoration projects that are cost shared 50-50 with non-Federal interests.

RESPONSES BY DR. JOSEPH WESTPHAL TO ADDITIONAL QUESTIONS FROM SENATOR BOXER

Question 1. When the President's fiscal year 1901 Budget Request was unveiled, I had mixed feelings on the Corps' budget request. While I applaud the Administration's overall emphasis on environmental restoration, I was disappointed to see that the Corps had not budgeted for two very important projects in Northern California. As you know, a tremendous partnership has been forged in the San Francisco Bay Area between environmental, business, and labor interests, working in concert with

local and Federal regulatory agencies, to address both economic and environmental needs. This partnership began in the early 1990's, and has enabled Bay Area ports to meet the needs of dredging their channels to accommodate increasing trade demands, while at the same time, fostered the recognition among all interests that dredge material should be treated as a resource, not a waste. To that end, in 1992, dredge material from a project at the Port of Oakland was used to construct a "beneficial use" site at the Sonoma Baylands Wetland Demonstration Project. Sonoma Baylands proved to be a highly successful project, and is a shining example that economic and environmental interests are indeed not mutually exclusive. Following the path established by the Sonoma Baylands project, the Port of Oakland, the California Coastal Conservancy, and other Bay Area interests, working on a near-daily basis with the Corps, fashioned a similar project which is to begin this year. The Port of Oakland must dredge its channels to a depth of 50 feet, to accommodate the newest generation of container vessels, and to meet the demands of ever-increasing international trade. The Port's project would dredge approximately 13 million cubic yards of dredge material, and I am truly pleased to say that nearly 100 percent of that material will be used for environmental restoration purposes. One of the sites which would utilize the Oakland material is at the former Hamilton Army Airfield. This project, which was authorized in WRDA 1999, would restore grades appropriate for various wetlands habitats at the site. The importance of Hamilton extends beyond the restoration project itself. It is the cornerstone for establishing a long-term dredge material management strategy that includes beneficial use options as a primary component.

Despite the involvement of the Corps and other Federal agencies, and notwithstanding the broad level of support that these two projects enjoy, I am disappointed that funding was not requested for them. Nevertheless, it is my full intent to seek funding for both projects in this year's Energy and Water Development appropriations legislation. My question to you is, assuming that appropriations are obtained this year, is the Corps fully ready, willing and able to begin work on both projects, in a timely manner, in Fiscal Year 2001?

Response. Yes, the Army Corps of Engineers plans to be ready to begin work on both projects if funds are appropriated in Fiscal Year 2001. The Corps has a capability of \$3 million for Hamilton, and \$20 million for Oakland in Fiscal Year 2001. Although project and study 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 2001 capability amounts shown consider each project or study 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 2001 is the appropriate amount consistent with the Administration's assessment of national priorities for Federal investments. 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 and studies, offsetting reductions would be required in order to maintain our overall budgetary objectives.

Question 2a. I have written to you three times since November 1999 regarding my concerns about the proposed removal of the Deer Creek Retention Levee in San Bernardino, California. I have not received a written response to my letters. As you may recall, a member of my staff, Senator Feinstein's staff, and concerned residents from Rancho Cucamonga met with you and other Corps staff on December 8, 1999 at the Pentagon. At that meeting, the Corps agreed to study the adequacy of the debris basin if funding could be found. The study was estimated to cost between \$150,000 to \$200,000. However, I have received a copy of a letter written by Corps Headquarters staff in January 2000 to the City of Rancho Cucamonga stating confidence in the district office's earlier belief that the debris basin is adequate to withstand a 100-year flood. Once again, I ask you to explain what occurred subsequent to the December meeting that caused the Corps to change its view. I am concerned about whether the Corps has provided adequate review of the removal of a Federal project designed to protect public health and safety.

Response. By letter dated March 6, 2000, I responded to your letters, Senator Boxer. I delayed my response until I was able to consider the results of the reanalysis of the Deer Creek issue accomplished by the Army Corps of Engineers. In conducting the reanalysis, the Corps used the latest standard and criteria, and used actual data from nearby watersheds. The reanalysis confirmed that the debris basin will accommodate a 111-year debris event, and that the downstream channel will accommodate about a 500-year flood event.

Question 2b. Moreover, it is my understanding that Congress, in the 1968 Flood Control Act, authorized the Corps to construct the Deer Creek Debris Basin in San Bernardino, California to capture debris and water flows for a 200-year event. The Corps' November 1999 review indicates that the basin—even if it were maintained to its original 310 acre feet capacity—would only provide for an 111-year event, but would be reached or exceeded by a larger event. As the basin does not provide the storage capacity intended and authorized by the Congress to protect the health and safety of the residents, how does the Corps intend to address that inadequacy?

Response. The Corps could conduct further studies if a project sponsor, willing to cost share the study, came forward with such a request, and if funds to do so were appropriated.

RESPONSES BY DR. JOSEPH WESTPHAL TO ADDITIONAL QUESTIONS FROM SENATOR
WYDEN

Question 1. The Corps of Engineers issued a favorable Chief's Report for the Columbia Channel Deepening project in late December. Pre-construction Engineering and Design and land acquisition are underway and will be completed during fiscal year 2001. Some environmental restoration work included as part of the project authorization, which is very important to its success in my part of the country, will be ready for construction in fiscal year 2001. Unfortunately, because the Chief's Report was completed so late in the budget preparation cycle, construction funds for the Columbia River project could not be included in the President's budget request. If Congress were to appropriate a portion of the amount authorized for environmental restoration work connected with the project for fiscal year 2001, would the Corps be capable of beginning this environmental restoration work during fiscal year 2001?

Response. The Corps has a capability of \$4.5 M in the Construction General appropriation to begin habitat restoration work in fiscal year 2001. Although project and study 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 2001 capability amount shown consider each project or study 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 2001 is the appropriate amount consistent with the Administration's assessment of national priorities for Federal investments. 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 and studies, offsetting reductions would be required in order to maintain our overall budgetary objectives.

Question 2. In 1988, the Port of Astoria entered into a local cooperation agreement with the Corps of Engineers to restore the deteriorating breakwater that protects the fishing fleet. Under the terms of the agreement, the Port was supposed to remove or relocate floats, pilings, the causeway and whatever other fixtures were needed for the Corps' contractor to do the renovation work. The Port also has made a number of improvements to its Boat Basin, including 30 new slips, a new parking lot, and resurfaced the roadway. All these improvements were done with the Corps' approval. To date, the Port has spent \$1.3 million in improvements since the agreement with the Corps as the local share of the project. The Corps began restoring the breakwater and will have completed 1000 feet of the 2350 foot breakwater by June. However, the Corps has since told the Port that it cannot complete the restoration of the remaining 1350 feet unless the Port removes all the pilings and floats and roadway that the Port previously installed as improvements. Given that the Corps had originally approved the installation of all of these improvements, how can the Corps now insist that the Port pay for removing them as a condition of having the breakwater fully restored?

Response. The Corps previously issued regulatory permits to the Port of Astoria for their work involved in installation of the improvements but when these permits were issued no one knew if or when repairs to the north breakwater would be made. Under terms of a 1989 Local Cooperation Agreement, the Port of Astoria is responsible for relocations in support of the breakwater repair.

Question 3. I understand the Corps is currently re-evaluating its ability-to-pay criteria. What has prompted this action? What is the Corps looking at with respect to better accommodating lower income communities if they want to participate in one of these studies/projects? What tools does the Corps have to meet the needs of lower income communities other than an ability to waive local cost shares outright?

Response. The Corps is re-evaluating its ability-to-pay criteria in response to section 202(b) of the Water Resources Development Act of 1996. As required by the legislation, our current draft ability-to-pay proposal eliminates the benefits based floor test in the 1995 rule. The benefits based floor test set a percentage floor for non-Federal cost share reductions on a project by project basis. The higher the benefit-cost ratio for the project, the higher the percentage floor for non-Federal cost sharing purposes. Our draft proposal also eliminates State per capita income as a qualification criterion in identifying lower income areas. Low-income areas will now be identified using county per capita income and per capita non-Federal construction cost as qualification criteria. Besides waiving a portion or all of the non-Federal cash requirements, the Corps also has the ability to meet the needs of lower income communities by deferring payments, for up to 30 years, on the non-Federal cost share under section 103(k) of the Water Resources Development Act of 1986. In addition, the Administration's proposed Water Resources Development Act of 2000 includes a provision to develop ability-to-pay criteria for environmental protection and restoration projects and for feasibility studies of flood damage reduction and environmental protection and restoration projects.

Question 4. WRDA of 1986 significantly altered the Corps mandate from simply implementing flood damage reduction and agricultural water supply projects to incorporate ecosystem restoration as well. Although Congress would need to amend current law, does the Corps feel that ability-to-pay criteria should include ecosystem restoration projects as well as flood damage reduction projects?

Response. Yes, we do support the application of ability-to-pay criteria to ecosystem restoration projects. In fact, the Administration's proposed Water Resources Development Act of 2000 includes a provision to develop ability-to-pay criteria for environmental protection and restoration projects.

Question 5. Under WRDA 1999, Section 212 (Challenge 21), Congress has asked that the Corps establish policies and procedures for carrying out the selected studies and projects and develop a rating criteria for projects to be implemented. What has the Corps come up with thus far?

Response. We are developing a draft list of rating criteria that will be coordinated with State and local agencies and tribes prior to submission to the committees. This coordination should take place within the next few months.

STATEMENT OF LT. GEN. JOE N. BALLARD, CHIEF OF ENGINEERS, U.S. ARMY CORPS OF ENGINEERS, DEPARTMENT OF THE ARMY

Introduction

Mr. Chairman and members of the subcommittee, as Dr. Westphal has fully addressed our budget issues, I will limit my comments to recent media reports on the Corps' work. I thank you for the opportunity to comment on the recent allegations surrounding the Upper Mississippi and Illinois River Navigation Study.

These allegations are very troubling to me as they challenge the very value of the Corps of Engineers to the Nation. That value is trust—a trust in our absolute integrity in providing to the Administration and this Congress, water resource investment recommendations that are unbiased and technically sound. While the widely published allegations and media reports attempt to erode the foundation of that trust, I am certain beyond doubt, that your trust has not been misplaced. I therefore welcome, and will fully support, all independent outside investigations of the allegations and any review of our processes. I will take prompt corrective action if wrongdoing is discovered, and stand ready to make improvements to our processes if warranted. I assure you that when all the facts are in, the integrity of the Corps will be intact, and you will know that the trust you have traditionally placed in the Corps is well founded.

Let me explain the reason for my confidence. First, I believe in the professionalism and dedication of the Corps team, and I have great trust in my leaders. Additionally, our process has a series of built-in checks and multiple levels of review to ensure objectivity. These include independent technical review, a minimum of two formal public reviews, Washington level policy review, State and Agency coordination requirements, and final review by the executive branch under E.O. 12322. It is important to note that all of these reviews are yet to be conducted in the case of the Upper Mississippi and Illinois River Navigation Study.

- It is important to remember that there are often no easy, clear-cut answers to the complex issues we face. Technical experts may, and often do, honestly disagree on specifics. The value that the Corps brings to the process is to ensure that both sides of any technical disagreement are competently analyzed and receive prop-

er peer review, public review, and policy review. In the particular study in question, the draft report has not yet been completed, much less undergone these reviews—so any allegations in this regard may be a bit premature. Ultimately, after full and open debate, balanced professional judgment must enter the process. Dealing with technical disagreements is the role of our field commanders—they must make tough decisions, often in the face of strongly held opposing views. The Corps' process ensures that all interests are heard and that final recommendations are unbiased, based on the best science available, and in the public's interest. In our business, there is almost always at least one interest group that is opposed to some specific finding. But, when all the facts are in, I am confident in the integrity of our process and the leaders who guide that process.

On a broader perspective, we are seeking to identify unmet National water resource needs that fall within the Corps' mission areas. These needs are based on published and documented information.

Our role is to apply a structured, reasoned approach to identifying and quantifying the Nation's water resource needs. Through an extensive communication process with our partners, stakeholders, other agencies and the general public, we recommend responsible alternatives for National investments that will meet economic development and environmental needs both today and in the future.

Conclusion

In conclusion, I am confident that our process, our execution, and the judgment of our leaders are sound, and yield balanced recommendations for wise water resource investments. Our screening process for potential projects is very tough. Historically, only 16 percent of the studies that we begin ultimately result in a construction start. In other words, most project proposals are discarded by the Corps. Those projects that make it through the screening process and are ultimately constructed provide a positive return on the Nation's investment.

Over the past 4 years, we have pursued our mission to address the Nation's current and emerging needs in an environment of deliberate downsizing. I have reduced the size of the Corps of Engineers by nearly 10 percent, while streamlining and improving the efficiency of our business processes. I am confident that the U.S. Army Corps of Engineers is pursuing its mission with the utmost professionalism and integrity, and will continue to serve this Nation well.

Thank you, Mr. Chairman and members of the committee. This concludes my statement.

AFFIDAVIT OF DONALD C. SWEENEY

For privacy purposes, this affidavit has been slightly modified from the affidavit filed with the Office of Special Counsel. Thirteen words have been deleted and two words have been replaced for grammatical consistency. These changes have no material affect on the content.

This affidavit was filed with the Office of Special Counsel, an office that takes disclosures of serious wrongdoing from Federal employees and is required to assure that agency heads, in this case the Secretary of Defense William Cohen, conducts a thorough investigation.

I, Donald C. Sweeney II, under oath, state as follows:

1. I hold a Ph.D. in economics from Washington University of St. Louis, MO and have been employed as a regional economist with the U.S. Army Corps of Engineers since February 1978. During this time, I received annual performance evaluations, all of which have been excellent, including the most recent performance evaluation covering the rating period ending October 1999. I am providing copies of all those performance evaluations that I currently have in my possession in Appendix 1. I have served as a supervisory economist in the St. Louis District of the Army Corps of Engineers overseeing the work products of other Corps economists. I have received numerous awards for public service during my 22-year career including awards for excellence in navigation system planning and awards for sustained superior performance.

2. From March 1993 until June 1998, I served as the technical manager of the economics work group of the Upper Mississippi River, Illinois Waterway Navigation System Feasibility Study. This study is a 6-year, more than \$50 million investigation of the feasibility of making up to \$4 billion of improvements to this navigation system that was originally scheduled to complete in 1999 but which will now be complete in 2000. Other members of the work group I directed included economists from three Corps of Engineers District offices and two Corps of Engineers Division offices. From June 1998 until June 1999, I served as the advisor to an "economics"

panel created by General Phillip Anderson, Commander of the Mississippi River Division, that was subsequently made responsible for the economic analysis in the study although this panel largely ceased to function in October 1998.

3. Under the Federal statutes, regulations, and policies that apply to the planning of all Army Corps of Engineers water resource projects, the Federal objective "to contribute to the national economic development consistent with protecting the Nation's environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements." This means that for the Corps of Engineers to recommend a project its estimated national economic development benefits must exceed the estimated costs of building and operating the project and the project must be consistent with protecting the Nation's environment. The benefit and cost analysis is a primary responsibility of the economics team and manager on a study. At the time I was removed from responsibility for the economic work products of the study, the study schedule called for the Corps of Engineers to release to the public in September 1998 its recommended plan. At that time, the benefit and cost analysis of the economists working on the study indicated that major, expensive, large-scale, structural changes to the navigation system were not warranted for the foreseeable future. Rather, the benefit and cost analysis indicated that measures the navigation industry could undertake itself or relatively inexpensive small-scale Federal measures were the only measures economically warranted.

4. The September 1998 date for release of the Corps' recommended plan and economic and environmental analyses was postponed. Subsequently, in July 1999, the Corps of Engineers at a series of public workshops announced that a "new" economic benefit and cost analysis showed that immediate, expensive, major structural changes to the navigation system were now justified.

5. This affidavit describes how the benefit and cost analysis has been intentionally and deliberately altered to produce a seemingly favorable recommendation for immediate large-scale expensive improvements (essentially doubling the length of seven system locks) as a result of the instructions of top Army Corps of Engineers officials. It discusses how new personnel were put in charge of the benefit and cost analysis and explicitly instructed not to produce their best unbiased analysis or, for that matter, any analysis they actually believed to be valid or in compliance with Corps of Engineers regulations, but instead to produce an "analysis" that immediately "justified" large-scale, expensive structural improvements. At first this effort attempted to find a justification for the project that was at least plausible. This attempt is itself contrary to Corps of Engineers Regulation ER 1105-2-100 which requires planning studies to evaluate all Federal water resource projects based on the most likely future project parameters. Eventually, even the self-serving standard of plausibility was abandoned when it failed to support the directed study results, and key inputs to the benefit and cost analysis were arbitrarily altered by top Army Corps of Engineers management to finally produce a seemingly favorable benefit to cost analysis for immediate, expensive, large-scale system investments. These altered benefit and cost numbers had no meaningful professional analysis backing them and were at least in many cases based on clearly erroneous rationales provided or directed by senior management.

6. To produce this favorable benefit to cost finding, top Army Corps of Engineers officials directed four key changes to the existing study analysis. First, top Corps officials arbitrarily directed the principal economist to ignore most of the potential for towboats to help each other to move through locks more rapidly during periods of high congestion, a practice that is currently used and that can dramatically reduce congestion at minimal increased public cost. Second, a top Corps official directed the principal economist to alter a key term used in estimating the real economic value of reducing barge congestion. Third, a top Corps official directed that an analysis be altered to state that immediate lock extensions would save millions of dollars that would otherwise have to be spent simply rehabilitating the existing locks. These three changes, separately and together, resulted in dramatically increased estimates for the estimated economic benefits of lock extensions. Finally, a top Corps official directed that engineers arbitrarily reduce the estimated construction costs of extending the length of existing locks despite the fact that the original construction cost estimates were approved by an Independent Technical Review of Corps and other experts. This change significantly reduced the estimated cost of lock extensions. In the final analysis, it appears that all four changes are necessary to produce a seemingly favorable benefit to cost ratio for immediately extending the length of existing locks. This affidavit provides a detailed chronology of how these changes were made and provides many supporting documents.

I. BACKGROUND ON THE UPPER MISSISSIPPI RIVER, ILLINOIS WATERWAY NAVIGATION SYSTEM FEASIBILITY STUDY

7. The Upper Mississippi River and Illinois Waterway Navigation System Feasibility Study area encompasses a navigation system that includes 43 locks located at 37 dams (some dams have more than one lock) stretching from Minneapolis and St. Paul MN at the northernmost extent to the confluence of the Mississippi and Ohio Rivers near Cairo, IL at the southernmost extent. The study area itself covers regions of the States of Minnesota, Wisconsin, Iowa, Illinois, and Missouri. The dams create pools in the rivers with sufficient depths to permit navigation to authorized draughts of nine feet. The locks allow transit between the pools created by the dams. All but four of the locks in this navigation system are 600 or less feet long, while most modern towboats push 15 barges at a time in a tow that extends nearly 1200 feet long. As a result, many tows in the system must routinely break apart into two smaller units to move through the locks in a time-consuming two-step process, adding roughly 45 minutes to an hour for each tow that must undergo this two-step lockage process. At certain times of the year with heavy barge traffic, this results in some traffic congestion at certain locks, with the delays in processing tows increasing the unit costs of water transportation.

8. The primary reason for undertaking the UMR-IW navigation system study was to investigate the feasibility of Federal and non-Federal measures designed to speed tow traffic through the locks reducing the time needed to process tows, decreasing the levels of congestion in the system, and, therefore, decreasing the unit costs of water transportation. Time currently wasted by tows waiting for service at congested system locks could then be freed up for other productive uses of these expensive assets. For example, a "typical" movement of a barge from an origin in the Upper Mississippi River system to a southern Louisiana destination and back again currently requires approximately a month for the roundtrip. This typical barge roundtrip had approximately a \$9.00 per ton cost measured in the 1994 price levels originally used in the study. Some of this roundtrip time is spent waiting for service at system locks due to congestion at the locks. If the congestion could be reduced and barges processed more quickly through the locks then the roundtrip time could be reduced, thereby freeing the barge to produce more movements of goods.

9. For example, Lock and Dam 25 near Winfield, MO on the Upper Mississippi River system is often a congested lock. In 1999 approximately 35 million tons of traffic passed through this congested lock. Suppose a measure existed that could reduce the congestion at that lock by an average of 5 hours per tow. If everything else in the system remained the same then the typical roundtrip would now require 10 less hours on average. This represents approximately a 1.5 percent decrease in the time required to move a typical barge from origin to destination and back again or equivalently about a 1.5 percent increase in the productivity of tows and barges.

10. The fundamental economic question is what value is associated with this increased productivity? A very rough estimate of the value can be generated directly from the existing data. If there are other potential barge users willing to consume this increased productivity at roughly the going rate of \$9.00 per ton, then this increased productivity permits the movement of an additional 500 thousand tons through Lock 25 on this system. This would yield an annual economic benefit of approximately \$4.5 million computed as the product of the observed willingness to pay, \$9.00 per ton, and the increased productivity of the system, 500 thousand tons. If this hypothetical measure cost less than \$4.5 million annually then this measure would increase the net economic benefits of the navigation system. These are rough numbers used for example only and do not reflect the actual more sophisticated analysis in the model, but they provide a good starting point for understanding the economic evaluation of potential system measures.

11. At current traffic levels evidenced on the UMR-IW navigation system, there is broad agreement among economists that expensive, large-scale measures like providing larger locks to process tows are not economically justified. The rationale for the navigation study was the expectation that the demand for barge transportation would grow over time, leading to increased system congestion and increasing barge transportation costs. Consequently, at some time in the future either large-scale or small-scale measures may increase the economic efficiency of the system by reducing the anticipated growing levels of congestion.

12. The study was and is required by Corps of Engineers regulation to evaluate a full range of alternatives for decreasing system congestion and improving the efficiency of barge transportation. The full range of alternatives to be investigated encompasses Federal and non-Federal measures. In general, the investigated alternatives are grouped into three broad categories: relatively inexpensive small-scale structural measures, such as providing mooring buoys at the locks or extending

guidewalls along the lock approaches that only somewhat improve the efficiency of moving barges through a lock; relatively expensive large-scale structural measures, such as doubling the length of some of the 600 foot long locks thereby eliminating the need for two-step lockages; and very low cost operational changes to the existing system, such as scheduling tows to reduce congestion. As the study progressed, the focus of the study narrowed to congestion at the 600 foot long locks in the system closest to St. Louis because traffic levels are greatest in the southern portion of the study area, making these locks most likely to experience increasing delays and congestion.

II. TRAFFIC GROWTH PROJECTIONS

13. The economic benefits of navigation improvements designed to reduce future congestion depend, of course, on the future levels of congestion without these improvements. The future levels of congestion, in turn, depend on the future growth in demand for barge transportation, so estimating this growth in demand is fundamental to the economic analysis.

14. As one of my very first duties as technical manager, I contracted with independent, private sector consultants to provide an estimate of the growth in the demand for barge transportation on the Upper Mississippi and Illinois Rivers through the year 2050. These forecasts were deliberately based on the assumption that future congestion was not a problem and that traffic could grow without increasing costs. The goal, in other words, was to estimate traffic growth if the price of barge transportation remained at today's real level. This forecast of future demand at existing real transportation prices provides a reference point to begin the estimation of the national economic development benefits of potential measures designed to reduce system congestion and decrease future water transportation costs.

15. Of course, the future is uncertain and I requested the contractor to prepare these forecasts in probabilistic terms. The forecasts were completed by Jack Faucett and Associates and were based on detailed historic data of traffic flows provided to them for 1991 and 1992. The forecasts predicted the most likely growth rate for future traffic in the absence of increased congestion over the 56 year planning horizon would average approximately 1.1 percent per year, with higher growth rates in the early years and lower growth rates in the later years. Most of this predicted traffic growth would result from an increase in grain exports delivered to southern Louisiana ports by barge.

16. Unlike other parts of the economic analysis, I do not believe any part of this analysis was based on pressure or failed to represent the best judgment of those doing the work. The forecasts were the subject of an intensive technical review conducted by myself, other members of the study team, the North Central Division office of the Corps of Engineers, the Lower Mississippi River Division office of the Corps of Engineers, and the Headquarters office of the Corps of Engineers. The projections of future traffic demands produced by Jack Faucett and Associates were adopted for use by the study without alteration of any kind.

17. So far, these most likely forecasts of demand for water transportation have proven to be optimistic. Comparing recent observed traffic levels in the UMR-IW navigation system to the most likely traffic forecasts evidences this optimism. For example, Locks and Dam 27 near St. Louis, Missouri is the southernmost lock location on the Upper Mississippi River. Most traffic entering or exiting the Upper Mississippi River goes through these locks. In 1992 Locks 27 processed a total of 81.5 million tons of traffic. By 1999, traffic through this lock assuming continued status quo operation of the system was forecast to grow to approximately 92.0 million tons. This represents a forecast growth of 10.5 million tons in annual traffic. Preliminary Corps of Engineers Lock Performance Monitoring System data indicate that approximately 83.4 million tons of traffic actually passed through Locks 27 in 1999. This represents a real growth of approximately 1.9 million tons during the 1992 through 1999 period. The real observed growth is less than 19 percent of the most likely growth forecast used in the study. Moreover, 1999 was a strong year as traffic levels for the Upper Mississippi River as a whole since 1992 have averaged significantly below 1992 levels. This is evidenced in a graph of historical traffic levels presented by the Army Corps of Engineers study team presented at a meeting of the Governors Liaison Committee to the study on November 18, 1999, which is attached as Appendix 2. This observed low growth relative to the most likely forecast of the study is apparent at all Upper Mississippi River locks and to a lesser extent at the Illinois Waterway locks.

18. This experience is important because potential water transportation cost savings realized in the near term have a much greater economic value now than potential transportation cost savings realized far off in the future. Low or non-existent

traffic growth in the early years relative to the forecast traffic growth used in the study makes the real immediate national economic development value of potential navigation improvements much lower than the values estimated in the study.

19. Despite this fact, all economic analyses of system improvements, including my own completed in early 1998, use these "most likely" forecast levels of traffic demands. It is important to recognize, therefore, that even the earlier unbiased analyses of the economics work group probably overestimate the real economic benefits of navigation improvements because they use traffic growth projections that, at least so far, appear to be, at best, optimistic. 20. Further, although this now very likely overestimate of "most likely" traffic growth was unintentional, the interim real observed traffic data should normally result in a revision to these, now optimistic, growth forecasts. This revision has not occurred.

III. BRIEF DESCRIPTION OF KEY FACTORS THAT ULTIMATELY WERE CHANGED TO MAKE LONGER LOCKS APPEAR JUSTIFIED

A. *The Willingness to Pay for More Efficient Barge Transportation*

21. The ultimate objective of the national economic development benefit analysis is to estimate the willingness to pay of users for the economic value of reducing the congestion of barge transportation. This willingness to pay for incremental changes in project outputs is the measure of national economic development benefit mandated by Corps of Engineers Regulation 1105-2-100. This Corps of Engineers regulation is itself based on regulations and guidance issued by the Water Resource Council on February 3 and March 10, 1983 signed by President Reagan for all Federal agencies that conduct water and related resource planning.

22. The relationship between the different quantities of barge transportation, or any other good or service, that consumers are willing to pay for as prices rise or fall is represented by economists as a demand curve. The willingness to pay for any good or service, whether barge transportation or lawnmowers for another example, depends in large part on the alternatives available to potential users of the good or service. When the price of barging, lawnmowers, or any good or service rises, some consumers will continue to purchase as before, other consumers will adjust the quantity they purchase, and still other consumers will take advantage of alternative goods or services.

23. This demand curve for barge transportation is therefore critical to evaluating the economic benefit of lock improvements designed to reduce future congestion. As system congestion increases, and therefore the price of barge transportation goes up, those who are desirous of moving grain and other goods on the river at existing prices do not have to continue barging the same quantities and can take advantage of other lower cost alternatives available to them. For example, the best analysis of grain markets in Iowa indicates that approximately 17 percent of Iowa grain is transported on the Mississippi River, primarily for export. If barge prices rise in the future, grain merchants and farmers could send more of their grain by railroad to New Orleans for export. They could export larger amounts via rail through the Pacific Northwest. More likely, they could decide not to export as much grain but instead send a little more to local processors, such as ethanol plants or hog feedlots. How much would these consumers of barge transportation be willing to pay for navigation improvements to lower the price of barging? The answer is the difference between that price and their next best alternative, and this difference is the economic value of navigation improvements to them.

24. Another consequence of the existence of alternatives to barging is that the river will become less congested than otherwise predicted by the most likely traffic growth estimates developed for the UMR-IW study. These forecasts predict the most likely barge traffic growth based on transportation costs and prices remaining constant at existing real levels. But if congestion makes barging more expensive, some of the goods that would otherwise move by barge will go to other destinations or use alternative modes of transportation such as rail or truck and therefore will not contribute to traffic delays. For this reason, even those who continue to use barge transportation despite the higher costs will, in fact, have to face less congestion than implied by the traffic forecasts. In effect, they benefit from the fact that others will decrease their use of the river. This means that determining how much commerce will shift away from the river as barge costs increase is critical to predicting how much congestion will truly develop on the river and therefore how expensive barging will become in the absence of navigation improvements.

25. A Corps of Engineer Regulation, ER 1105-2-100, and the "Economic and Environmental Guidelines for Water and Related Land Resources Implementation Studies" both require in identical language that all planning studies use the willingness to pay of potential consumers as embodied in a demand curve as the measure

of national economic development benefits. In estimating how much additional barge traffic will use a river as a result of a project and how much that increased level of use contributes to the national economic development objective, these regulations require that planners consider all the different alternatives available to those who want to move goods in the absence of the project.

26. Economists call this analysis of “how much” goods will shift away from the river in response to a price change a question of the elasticity of demand for barge transportation. The more readily grain and other goods will find an alternative to using the Upper Mississippi River as the river becomes more congested and barge prices rise the more elastic is the demand for barge transportation. The less readily grain and other goods will find an alternative to using the Upper Mississippi River as the river becomes more congested and barge prices rise the more inelastic is the demand for barge transportation.

27. Elasticity depends on the availability of substitutes for water transportation as well as the amount of time producers and consumers of barge transportation have to respond to market changes. Generally, the more close substitutes or alternatives available to consumers and producers the less the willingness to pay for increased levels of barge transportation. Similarly, the more time available to seek alternatives and substitutes the lesser the willingness to pay for increases levels of barge transportation.

28. Prior to this study, despite the planning regulations, Army Corps of Engineers analyses of inland navigation projects had ignored this fundamental point that those who use water transportation have other alternatives and will adjust their desired level of usage if the price of barge transportation rises. They in effect assumed a perfectly inelastic demand of system users for barge transportation. This assumption violates fundamental principles of economic analysis and can result in an order of magnitude overestimate of the national economic development benefits of a navigation project.

29. As part of the economic analysis for this project, the economics work team and I developed a model that incorporated for the first time the elasticity of demand for barge transportation in a system model to be used to estimate the navigation-related national economic development benefits of potential system changes to reduce congestion. In the various documents cited later in this affidavit or provided as Appendices, this model is referred to as SEM, ESSENCE, or the St. Louis model. SEM refers to the conceptual economic model. ESSENCE refers to the computer model implementing the SEM. The St. Louis model denotes the SEM, ESSENCE, or both. In the ESSENCE, a parameter termed “N” or sometimes the “N value” technically defines the “shape of the demand curve for individual origin, destination, and commodity specific potential system movements” and plays an important role in estimating economic benefits. The N value for a potential system movement is directly related to the absolute value of the elasticity of demand for that movement. The greater N for a given potential movement, the more elastic is the demand for barge transportation, the better the alternatives to barge transportation appear, and the lower the likely real growth in future barge traffic without system improvements. In other words, the higher the N values for movements, the lower the national economic development benefits of potential expensive, large-scale, navigation system improvements.

30. In the original ESSENCE model, we estimated the N value for grain and other raw agricultural products, which are by far the most important commodities by volume, to be equal 2.0. All other commodities were given an N value of 1.0. Even assuming the optimistic most likely demand predictions by Jack Faucett and Associates, with these N values, the estimated costs of doubling the length of any subset of system locks or constructing new 1200 foot long chambers any time in the foreseeable future exceeded the estimated benefits substantially. There is legitimate uncertainty regarding the appropriate values of N for agricultural and other products, but as I discuss below, even much lower N values led to the same conclusion.

31. As described below, this model was subject to repeated independent technical review both within and without the Army Corps of Engineers and was strongly affirmed by each review. In the course of finding a way to justify doubling of the lengths of locks in 1998 and 1999, the N values were one of the key factors subject to manipulation by senior Corps of Engineers officials.

B. Rehabilitation Cost Savings

32. Another source of national economic development benefits that can be the result of potential structural projects to improve water resource facilities is the postponement or avoidance of rehabilitating or replacing existing components of facilities that would otherwise need rehabilitation or replacement. In this event, these rehabilitation cost savings, if real, are a national economic development benefit of

the potential project as those resources that would have been consumed by the rehabilitation are freed up for other productive uses.

33. As part of navigation study, the engineering and economics work groups evaluated whether there would be rehabilitation cost savings as a result of implementing any of the alternatives to decrease congestion at the locks. Throughout 1997 and early 1998, Jeff Marmorstein and I and others participated in a series of meetings with the engineering work group, including Dennis Lundberg and Bob Hughey and others, that examined in detail the construction cost elements of the extended lock alternatives. At these meetings we were informed that no rehabilitation costs for components of the existing locks were included in the construction cost estimates for the extended locks. For this reason, regardless of what future rehabilitation costs proved to be, there could be no immediate rehabilitation cost savings as a consequence of extending existing locks.

34. Subsequent to these meetings, Jeff McGrath, an economist in the St. Paul District at my direction, working with members of the engineering work group, completed a detailed analysis of the need for future rehabilitation for the without project condition. The principal reason for this analysis was guidance from Corps of Engineers Headquarters that major rehabilitation expenditures on the Upper Mississippi River must be identified as an integral part of the evaluation of any potential investments on the navigation system. Mr. McGrath's analysis focused on 17 major components of the all the existing locks in the navigation system study and concluded that no rehabilitation costs for these components would be necessary with or without extended locks for 35 to 40 years, i.e., until at least 2033. These conclusions were embodied in a report prepared by McGrath in early 1998 and are reflected in the public minutes of an Economic Coordinating Committee meeting on May 11 and 12, 1998 which are attached as Appendix 3.

35. This analysis is important because it shows that potential rehabilitation cost savings from extending locks would be small even if the costs of extending locks did include significant rehabilitation of existing locks (in contrast to what we were told above). At best, extending the existing locks in the near future would postpone future rehabilitation costs from around 2035 to some period thereafter. The present value of these foregone rehabilitation costs so far off in the future would be very small.

36. Mr. Lundberg noted correctly at a meeting in early 1998 in the Rock Island District office that I attended that some potential rehabilitation expenses had not been examined by Mr. McGrath's report. However, Mr. Lundberg also noted these other rehabilitation costs were not expected to change with or without the lock extensions. For that reason any such rehabilitation costs were irrelevant to whether extended locks could save future rehabilitation costs.

37. The conclusion that there was no real potential rehabilitation cost savings was documented to the economics team in a statement contained in the document entitled "Engineering Hand-off to Economics" dated March 18, 1998. Key pages from this document are attached as Appendix 4. This document contained performance and cost data compiled by the engineering work group for large-scale measures including lock extensions that had undergone extensive Independent Technical Review in late 1997.

38. As described below, a major change was made to this analysis in May and June 1999 in an effort to attempt to justify immediate large-scale measures.

C. Industry Self-help

39. One of the means by which tows can themselves reduce the time it takes to proceed through a lock is to receive help from other tows also waiting for lockage. This practice is termed industry self-help. Basically, another line haul towboat waiting at the lock disengages from its barges and assists in removing the first half (called the first "cut") of a locking tow and then removes this first cut to a remote location to await the second cut to remake the original tow. Historical experience developed by the study has shown that tow operators will do this when traffic builds up at locks. The engineering team estimated that "industry self-help" would reduce the time it takes to transit a lock by an average of 18 minutes for up-bound tows and 23 minutes for down-bound tows, or roughly 20 minutes average overall. This conclusion was summarized in the Study's December, 1997 newsletter, attached as Appendix 5. The March 18, 1998 revised Engineering Hand-Off to Economics (attached previously as Appendix 4) reduced slightly the estimate of the time savings from increased usage of industry self-help and increased the costs by requiring that DeLong Piers be installed to extend the existing upstream guidewalls of the locks for safety reasons.

40. This practice has important consequences for estimating the benefits of larger locks. Corps of Engineers regulation ER-1105-2-100 requires this practice to be ex-

explicitly included in the without project condition. This practice helps insure the most efficient use of the existing system. Larger locks, according to the engineering team, reduce transit times per lock by approximately 55 minutes (depending on the lock). But when tow operators can themselves significantly reduce transit times by up to 23 minutes under certain conditions, the net reduction in lockage time attributable to longer locks is reduced when measured against the without project condition.

41. Although industry self-help occurs today, the addition of nearby mooring cells would further facilitate the practice. As the 1997 newsletter reveals, one possibility considered was to construct six mooring cells at each lock at an estimated cost of \$1.1 million per lock. However implemented, Army Corps of Engineer regulations and the Principles and Guidelines require that self-help be treated as an alternative to extended locks.

42. The ESSENCE model therefore incorporated a technique for estimating when tows would provide each other self-help based upon whenever the congestion at a lock reached a certain level, 12 tows waiting for lockage. The model then reduced the lockage time for those double lockages that could benefit from self-help in the without project condition.

43. The model, depending on the precise lock in question, indicated that the tow industry could use self-help at the locks in the future for the majority of double lockages. Because each use would reduce transit time by roughly 20 minutes even without extended locks, this estimate of real world conditions significantly and dramatically reduced the estimated economic benefit of extended locks. As described below, as late as November 1998, the economic analysis indicated that self-help alone would fully address the future transportation needs of the system.

44. As described below on January 14, 1999, at a navigation team leaders meeting in the Rock Island District office it was announced that officials ordered an important restriction to be used in the model limiting the percentage of time barge companies would use industry self-help.

D. Cost Estimates for Extended Locks

45. In any benefit and cost analysis, the estimated costs of a project obviously play a critical role. In the course of the economics study while I was still leading the economics work group, cost estimates for all the large-scale lock expansions dramatically decreased. Original cost estimates using traditional lock construction techniques put the cost at approximately \$380 million per lock or \$1.9 billion for five locks. These original cost estimates reproduced for an earlier study and just served as a starting point for the investigation of this study.

46. The engineering work group recognized early that such a high construction cost was likely not to be cost-effective for addressing future congestion. It therefore investigated and developed an innovative construction technique that would keep the existing locks in place and simply extend them using a great deal of pre-fabricated construction. For example, unlike traditional Army Corps construction techniques, the proposed new lock extension construction would not require the construction of a costly temporary (coffer) dam. These new techniques, reflected in engineering alternative 2R reduced the construction cost estimates roughly in half.

47. One part of any Corps of Engineers cost estimate includes a "contingency" factor for potential cost overruns related to unforeseen conditions encountered during construction. This contingency is included because of experience that costs rarely turn out to be lower than predicted and often turn out to be higher. Typically Corps projects include contingency factors of 25 percent. That typical 25 percent contingency cost was increased in this study to 35 percent in response to the Independent Technical Review of the Engineering Appendix to the study and expert comments received by the engineering work group because the lower construction cost estimates relied on novel construction techniques. This 35 percent contingency cost was reflected in all large-scale cost estimates transmitted to the economics work group for use in the benefit/cost analysis as documented in the Engineering Hand-Off to Economics revised March 18, 1998 (previously attached as Appendix 4).

48. As described below, this contingency factor was suddenly reduced to 25 percent in late May and early June 1999.

IV. DESCRIPTION OF EVENTS SINCE 1997

A. October 1997 through May 1998

49. On October 29, 1997, in response to my earlier request, I briefed the economic methodology the economic study team had developed for the study to a large group of invited Corps economists and planners in St. Louis. All Corps economists and planners with an interest in navigation studies were invited and asked to comment and to review on the UMR-IW economic methodology and model.

50. Oral feedback from the briefing was extremely positive. On December 5, 1997 I also received an email from Jesse McDonald, an economist at the Mississippi River Division, including copies of the comments of several participants. These comments are attached as Appendix 6. The comments of Robert Daniels, then the chief economist of the Army Corps of Engineers at Headquarters, stated: "My simple answer is that it looks like the greatest advance we have made in moving theory to practice in quite a few years. What does it mean to the future analysis? Well, I'd say it means that we will have more correct and therefore more supportable results." Steve Cone, another economist in Headquarters, described it this way: "An appropriate move toward what has been viewed as theoretical (but only because models have not been developed to measure what we know is true). I hope we continue to move toward models that better measure willingness to pay."

51. In November and December 1997, Jeff Marmorstein and I used the model to generate preliminary estimates of the economic benefits of various alternative improvements for the Upper Mississippi navigation system. These preliminary analyses concluded that industry self-help alone might fully address future transportation needs and at most only small-scale, low cost system improvements appeared justified for the foreseeable future. The estimates of the economic benefits also indicated that large-scale improvements would not be justified at any time in the 50-year study period.

52. At my request in late 1997, Mr. Richard Manguno an economist of the New Orleans District office was designated as the independent technical review manager for the products of the economics study work group. Army Corps of Engineers regulations require an independent technical review of the work products of feasibility studies.

53. On February 3-4, 1998, in Vicksburg MS, I first described the preliminary results of the economic benefit and cost analysis at a public meeting of the environmental work group of the UMR-IW study. I presented the results as subject to change and preliminary, however, I did communicate that only small-scale measures appeared warranted for the foreseeable future.

54. These preliminary working results generated a few newspaper articles stating that the "Corps of Engineers rejects rebuilding lock system." An article appeared in a newsletter put out by American Rivers, an environmental group, and I believe later some other newspapers carried the story, including perhaps the St. Louis Post Dispatch and the Des Moines Register.

55. On March 11, 1998, I formally forwarded to Rich Manguno of the New Orleans District office documentation to begin the required Independent Technical Review (ITR) of the work products of the economics work group. As part of the ITR, Mr. Manguno would pick a number of economists, both within and outside the Army Corps of Engineers, to evaluate the work products. The St. Louis District is under the command and control of the Mississippi River Valley Division (MVD), which has its headquarters in Vicksburg, Mississippi. As part of its command and control duties the MVD is required by regulation to assure the ITR of all work products used in feasibility studies under its command and control.

56. In early April 1998, the entire study team and I briefed the MVD commander and his staff on the ITR process for the entire study and other issues. At this briefing I formally told the commander and his staff that this study would likely not produce economic justification for large-scale measures at any time in the foreseeable future. I explained how previous Corps of Engineers economic evaluations of navigation system improvements had overstated project benefits. The commander and his staff, including Don Herndon and George "Dusty" Rhodes, expressed concern with our conclusions.

57. Minutes of an April 7, 1998 Navigation Study Team meeting (Appendix 7) indicate that the schedule at that time called for releasing the initial NED analysis, i.e., the benefit/cost analysis, in April and presenting the NED and alternative plans in July. These minutes also note, "Based on the preliminary, initial NED analysis and its assumptions, industry self help appears to be able to meet the need for system transportation improvements within the study horizon." There was also discussion of the estimates of rehabilitation costs, and the minutes include my uncontradicted statement "that this analysis should not significantly effect the outcome of the study, since it essentially impacts the with and without project condition in the same way."

58. On April 23, 1998 at Fort Leonard Wood, Missouri, in response to these concerns, I briefed General Fuhrman (the Director of Civil Works for the Corps of Engineers), General Van Winkle (the Commander of the Lakes and Rivers Division (LRD)), General Anderson (the Commander of the MVD), Colonel Mudd (the Commander of the Rock Island District), and Colonel Hodgini (the Commander of the St. Louis District. Other staff and study team members were present at the briefing.

In the course of doing so, I addressed why this analysis differed from previous Corps of Engineers navigation analyses. I explained how the information we had developed on the origins and prices paid to producers of Iowa grain that currently moved on the Mississippi River showed that farmers utilized abundant alternative destinations for their grain, which meant that they must be responsive to price changes in barge transportation. (Overheads from this presentation are also included in Appendix 7.)

59. None of the participants expressed any objections to the analysis. General Fuhrman decided to undertake a process to evaluate the potential implications of the UMR-IW results and models. He stated that he did not want to revisit the economics of past projects, but wanted to ensure consistency in evaluation of future projects among all Corps offices undertaking such studies. The meeting concluded with an understanding that General Fuhrman's staff would undertake an investigation to assure the consistency of economic analyses amongst all divisions and districts conducting these analyses. Steve Stockton, Chief of Planning at Corps Headquarters, was assigned to this task initially, but to my knowledge this investigation was never completed.

60. On May 27, 1998, I attended a meeting in Huntington, WV to discuss comments received from economists at LRD as part of the Independent Technical Review regarding the economic model and data used in the study. The feedback from this meeting was positive although the economists at LRD withheld judgment on some of the details of the model pending further review. This outcome was described by Dudley Hanson, at that time the overall project manager of the study in a June 2, 3, 1998 meeting of all the technical managers of the study in Bettendorf, Iowa, which is recorded in a memorandum dated June 4, 1998 from Bradley Thompson to the participants in that meeting (Appendix 8). As this memorandum describes, the LRD economists wanted a users manual for the model to explore some of its details.

61. The minutes of the June 2,3, 1998 technical managers meeting also provide some discussion of self-help. Denny Lundberg, an engineer in the Rock Island District, stated that the navigation industry had just "come to understand the importance of this measure," opposed it, and was "not willing to talk about this measure any further." But Lundberg also reported that the self-help analysis of the engineering work group had already passed Independent Technical Review.

62. To further explain the details of the economics model, a followup workshop was conducted in St. Louis on June 10, 1998 for economists participating in the ongoing ITR and others. Jeff Marmorstein led the workshop. The conclusions and recommendations of the workshop were that the concepts underlying the model were sound. The workshop participants recommended that it might be necessary to do more work to estimate the "elasticity of demand" for barge transportation, i.e., to determine the appropriate N values for use in the ESSENCE model. I agreed with that recommendation. A memorandum from me to the members of the ITR economics team summarizing these conclusions dated June 16, 1998 is attached as Appendix 9.

63. In short, as of June 10, 1998, the economic analysis that showed that immediate lock extensions and other large-scale measures were not justified had undergone both informal and formal review, and the only recommendation was the possible need for further data checking of the N values. I agreed with that recommendation.

B. June 11 1998 through April 1999

64. On June 13, 1998, General Anderson received a briefing in St. Louis on the status of the ITR of the economic analysis. Col. Hodgini, Dudley Hanson, George "Dusty" Rhodes (Chief of Planning Directorate at MVD), Dean Caldwell (Executive Assistant to the MVD Commander) and Rich Manguno were present at the briefing. I was originally supposed to attend the meeting but was told shortly prior to the meeting by Owen Dutt, my supervisor, that he and I should not attend the briefing. My understanding of the meeting is based on descriptions given to me by Colonel Hodgini and Mr. Manguno orally and on a memorandum dated June 15, 1998 (Appendix 10).

65. Mr. Manguno had pre-briefed Mr. Rhodes that the ITR was going to conclude that the model was correct and suitable for use in evaluating the economic impacts of alternative changes to the UMR-IW navigation system. Mr. Rhodes stated that he would challenge the conclusion of the ITR. He directed prior to the briefing of General Anderson that alternatives be developed to alter the management structure of the study team. He directed that these alternatives include the replacement of me by a panel of MVD economists chaired by the project manager Dudley Hanson,

an engineer, and he stated he was going to recommend this alternative to General Anderson.

66. At the briefing for General Anderson, Mr. Manguno reported the status and likely conclusions of the ITR. Mr. Rhodes, who is not an economist, presented his recommendation to transfer control of the economics work by stating that I was on a mission "out to shut down the Corps." The briefing concluded with the understanding that General Anderson would consult with General Furman and make a command decision on what to do.

67. On June 17, 1998, General Anderson sent a memorandum to the Commanders of three of his districts. This memorandum (Appendix 11) instructed the following:

- Dudley Hanson would be appointed the project manager for the overall study as his sole responsibility. Previously, Mr. Hanson acted as the supervisor for the project manager of the time, Mark Gmitro.

- Control over all economic analysis was transferred to the newly created panel consisting of the Chiefs of Economics in three MVD Districts, Mr. Rich Manguno, Diane Karnish, Paul Soyke, and a representative from the Navigation Studies Center in LRD, Wes Walker, who was already participating in the ongoing ITR of the economics work products.

- The panel was directed to produce all necessary economic analyses and to identify the alternative that maximized the net economic benefits within 90 days.

- I was named an advisor to the panel. Later, the Corps of Engineers Headquarters office also appointed an observer to the panel, Mr. Ron Conner.

68. On June 22, Paul Soyke sent a memorandum, at the "direction of the Project Manager," Dudley Hanson, describing the panel's roles (Appendix 12). It stated that Dudley Hanson is the chairman of the panel. Dudley Hanson is not an economist. It also instructs the panel members that there are 17 key assumptions described in my write-up of the SEM economics model that the panel will review.

69. The economics panel held its first face-to-face meeting July 1-2, 1998 in New Orleans. I did not attend this meeting. A CEMVR-PD-C memorandum dated July 6, 1998 (Appendix 13) documents this meeting. The panel evaluated the 17 assumptions underlying the economics model and concluded, "there were no major problems or issues with the assumptions."

70. At this meeting, Dudley Hanson also directed that the panel contract with Dr. Mike Bronzini of Oak Ridge National Laboratories, to evaluate the ESSENCE economic model using another model to determine if both models arrived at the same results under the same assumptions.

71. On July 23, 1998, the economics panel met for a second time. Its proceedings are reflected in a memorandum prepared by Ron Conner dated July 25, 1998 (Appendix 14). Dr. Bronzini discussed his progress. I urged that the panel devote its full energy to improving information about the likely shape of demand curves. The panel agreed to organize an "expert elicitation panel" of outside agricultural economists to provide advice on the elasticity of demand for water transportation for agricultural products.

72. On August 6 and 7, 1998, the expert elicitation panel of outside experts met to help the economics panel determine the characteristics of the demand for water transportation of agricultural products. The meeting was held in Chicago, IL with the following experts in attendance: Harold Hommes, Iowa Dept. of Agriculture; Brad Clow, Sparks Companies Inc.; John Bitzan, North Dakota State University; Steve Fuller, Texas A&M University; and Jerry Fruin, University of Minnesota. Corps of Engineer attendees included Paul Soyke, Ron Conner, Mark Hammond, and myself. The meeting is documented in two memorandums, CECW-PD (Conner) dated August 10, 1999 and CELRH-NC also dated August 10, 1998, both of which are attached as Appendix 15.

73. As these memoranda indicate, the panel agreed with the basic (downward sloping) shape of the demand curve in the ESSENCE economic model. It recommended that more data be gathered to determine the precise shape of the curve for various origins and destinations for grain products, but it believed that the appropriate N value for the demand curves for raw agricultural products was probably somewhere between 1 and 2.

74. On August 14, 1998, the Independent Technical Review of the economic model and other work products was finalized in a memorandum (Appendix 16) transmitted through Owen Dutt (Chief of the Planning Division in the St. Louis District) to Dudley Hanson. It stated that the "economic concepts underlying" the economic analysis are sound. It recommended additional efforts to define the shape of the demand curves for water transportation, i.e., to determine the elasticity of demand for water transportation.

75. On August 22-23, 1998, the economic panel met for the third and final time in Rock Island. The meeting is documented in a memorandum from CECW-PD

(Conner) dated August 26, 1998 (Appendix 17). In this meeting the economics panel recommended continuing with the model developed for the study by the study team with a "compromise" demand curve for water transportation of all raw agricultural products movements characterized with an N value of 1.5. For non-agricultural products the economics panel recommended an N value of 1.0.

76. The memorandum from General Anderson had assigned the economic panel the responsibility of producing a preliminary NED plan by September 17, 1998. I do not know precisely who made the decision, but at some point in September, Dudley Hanson directed Rich Manguno to analyze various selected alternatives (combinations of small and large scale measures at selected system locks) through the model using different selected values for N and different growth predictions for future traffic. (As discussed above, the Jack Faucett analysis had provided a high, medium and low estimate for future traffic growth.) I have an email dated September 3, 1998 from Paul Soyke to the economics panel members and others indicating that there had been a teleconference the previous day, the outcome of which appears from this email to have been a decision not to produce a single recommended alternative. Instead, a range of alternative scenarios would be analyzed. "The team should then determine an alternative, based on these results, that appears to be the most likely to justify large scale improvements in the near future." (Appendix 18).

77. Rich Manguno came to the St. Louis District on September 14, 1998 and stayed through September 18, 1998 to run the various alternatives through the model using various different assumptions for N and growth predictions. He had been instructed by Dudley Hanson to examine how these different assumptions affected the results. Jeff Marmorstein and I assisted him. We concluded that any reasonable values for either the N parameters or the growth rates left unaltered the conclusion that no large-scale improvements were justified for at least a long period.

78. On September 18, 1998, I was called to a private one on one meeting with the St. Louis District's Deputy for Project Management, Mr. Gerald Barnes. He informed me he had had conversations with MVD staff, specifically Dusty Rhodes and Don Herndon. He told me to find a way to justify large-scale measures in the near term for the UMR-IW navigation system or the MVD office would find an economist who would and I would be out of my job as technical manager of the economics work group. As I remember, he asked if I had a family to support or words to that effect. I told him I could not find such a justification because it was beyond the bounds of reasonableness given the economic data and model runs to date. I described this meeting to Mr. Manguno immediately on walking out of the meeting.

79. On September 23, 1998, General Anderson, Colonel Mudd and members of their staffs briefed General Furman and key members of his staff. I do not know who attended this briefing, as I was not invited to attend.

80. On the same day, there was an exchange of emails between William Arnold, a planner with the MVD, and Dusty Rhodes, the Chief of Planning of MVD (Appendix 19). In these emails, Mr. Arnold communicates that they have been trying to choose scenarios out of the variety that could be picked to justify the project that are "reasonably plausible," but warns that they could end up, without care, putting together assumptions that together could not meet this standard. Rhodes writes back that they should stick "with the concept of scenarios that are reasonably plausible." Army Corps of Engineers regulation ER 1105-2-100 and the Principles and Guidelines require that scenarios be chosen that are the "most likely condition expected to exist in the future."

81. On September 25, 1998, Dudley Hanson sent an email to Mr. Manguno with copies to many individuals involved in the study including myself (Appendix 20). This memorandum instructed Rich on the "task that you, as leader of the economics work group . . . have before you." The memorandum includes a description "Briefing of MG Fuhrman and staff: Guidance Received" and states in part as follows: "We, the Corps, are the Federal Government's advocates for inland waterways. There is a need to improve the system. The well being of the Midwest depends on agricultural exports. We need to figure out what the demand curves mean. If the demand curves, traffic growth projections, and associated variables that the economics model can consider, do not capture the need for navigation improvements, then we have to figure out some other way to do it . . . MG Fuhrman will approve a schedule change. By the end of 3 weeks . . . he directs that we develop evidence or data to support a defensible set of capacity enhancement projects. We need to know what the mechanism is that drives the benefits up. The rationale should err on the high side." If there is any ambiguity as to the meaning of this instruction, Dudley Hanson includes the instruction: "In anticipation of the need [for additional help for Manguno] I have asked folks to work on the rationale that relates directed enhancements to plausible world conditions that will underlie the need for these enhance-

ments, to be developed qualitatively and then quantitatively using our analytical tools.”

82. On the same day, Dudley Hanson also sent a memorandum to a large number of people involved in the study (Appendix 21), including myself stating: “MG Fuhrman now tells us that we are the advocates for inland navigation, which sounds to me to be a distinctly more proactive posture than what I’ve always pictured our role. I’ve thought of us as “stewards” of inland navigation, i.e., we execute public policy regarding improvements and level of service, and we grease the machinery and repair it. This overt advocacy role, to me, is a new departure. We’ll have to work on a story line, and in fact, that’s one of the things we’ll be doing over the next few weeks. I, for one, have no problem with this, provided our chain of command supports, and helps explain, this new view when the heat comes up. It’s pretty clear to me from Wednesday’s meeting in Washington that the support will be there when it’s needed.”

83. Mr. Manguno has informed me that he expressed concerns with this instruction in writing to Dudley Hanson.

84. On October 2, 1998, in response to these concerns, Colonel Mudd sent Mr. Manguno an additional memorandum (Appendix 22). Among other things, this memorandum states: “MG Fuhrman has clearly stated that the Corps has the responsibility as the Federal Government’s advocate for the inland waterway system. To help in the execution of this responsibility, you will develop the economic component of the case for a recommendation that includes near term improvements, recognizing that the Nation is better served by improvements that err on the large-scale side than by actions that err on the underdeveloped side. The case will be based on explicit considerations of our position in the world with respect to competitiveness and reliability. Considerations may also such include [sic] items as national policy regarding grain exports, balance of trade considerations, and risk and uncertainty. Making this case will be the responsibility of the PM/Formulation group, with the help and input of the Economics Panel.”

85. Also on September 25, 1998, Gerald Barnes sent an email to Colonel Hodgini, Diane Karnish and myself reiterating some remarks by General Fuhrman to the navigation industry stating, among other things, that, “HQ will be ‘decisively engaged’ in the results of the Navigation Study.” He ends the memo with the line, “It’s pretty clear to me where this is heading.” (Appendix 23)

86. In a memorandum dated September 27, 1998, Major General Anderson extended the Economics Panel for the duration of the feasibility study (Appendix 24). The panel was made responsible for all the economics work products in the study. Rich Manguno replaced Dudley Hanson as panel chair. Col. Mudd was given ultimate control of the panel. The panel was made responsible for production of all economic products for the navigation study.

87. Despite the above instruction, the panel never met again nor was consulted with in any way until I sent a memorandum by e-mail to Col. Mudd in June 1999 reminding him of the panel’s responsibilities. These events are described below.

88. On November 24, 1998 a document entitled Upper-Mississippi River-Illinois Waterway System Navigation Study: Preliminary Economics Findings Released to the Public was distributed to the public (Appendix 25). The preliminary findings set forth the benefits and costs of various alternatives under selected alternative assumptions for traffic growth and N values. This analysis left undetermined the system environmental costs to be included in the benefit and cost analysis. No scenario was analyzed using an N of 2.0 for grain. The highest assumed N value estimate employed in this analysis was N of 1.5 for grain. This was the N value recommended for use by the economics panel. Assuming that N value, even without including system wide environmental costs, the analysis showed that extending locks was not justified at any time over the next 50 years.

89. Subsequent to this public release of preliminary findings in November 1998, Mr. Manguno contracted with Dr. Mark Burton, an economist at Marshall University, to produce additional analysis of the elasticity of demand of commodities that move on the river and to further examine the methodology utilized by the system economic model. Dr. Burton is a recognized expert in the field of transportation economics.

90. At a January 14–15, 1999 Navigation Study Team meeting in Rock Island, Richard Manguno is told to restrict the model to assume that industry self-help can only be used a maximum of 5 percent of the lockages, compared to a more than 50 percent use at congested locks predicted by the model itself. According to the minutes of this meeting (Appendix 26), because concerns have been raised that self-help might impact the environment without additional facilities (presumably mooring buoys), self-help should actually be considered a “with project” option. That change by itself would still preserve self-help as a cost-effective option to extended locks.

But, the minutes then state, "Bob Hughey and Brad Thompson highlighted that in detailed coordination with the industry and Corps operations and engineering staff that remote remake facilities will not be provided as a Federal action." Bob Hughey is an engineer in the St. Louis District and Brad Thompson is a planner in the Rock Island District.

91. No other rationale has ever been provided to the economists for this arbitrary restriction on the use of self-help. Currently, tows do in fact use self-help when congestion is significant and it is in the tow operators' interests to do so.

92. On March 3, 1999, Dr. Mark Burton submitted his report (excerpts are attached as Appendix 41). His independent assessment reviewed the overall economic model and supported it. He did some empirical analysis, using railroad transportation price and quantity data, to estimate the short-run elasticity of demand for rail transportation of goods other than grain. These estimates of short-run rail price elasticity could legitimately be used to determine the most inelastic limit for these goods, but his report cautions that these are short-run elasticity estimates and they likely understate the real, long run values. The reason is that in the very short-run, those who use the river to transport goods have relatively fewer alternatives, but in the long run, they have more opportunity to find alternatives for water transportation. Dr. Burton also concludes that the best estimate of N for grain is 2.0, rather than the 1.5 that had been recommended by the economics panel.

93. Chris Brescia was and is the Executive Director of MARC 2000, an association formed by large water transportation companies and others interested in the navigation system to push for large-scale structural improvements on the Upper Mississippi River system. Email documents indicate that there was some discussion in March between Mr. Brescia and at least Colonel Mudd about possibly recommending to Congress major structural improvements even though they did not pass an economic benefit and cost analysis. In an e-mail dated March 11, 1999 from Brescia to Colonel Mudd, Mr. Brescia rejects this idea because he quotes a Corps of Engineers guidance document stating that potential projects without a positive benefit to cost ratio will not receive Federal funding (Appendix 27). Brescia concludes in his message, "We will lose on all counts."

94. By April 1999, Rich Manguno had performed many additional model runs to evaluate the different alternative improvements to the navigation system. As Mr. Manguno had been instructed to do in January 1999, these analyses arbitrarily restricted the use of industry self-help in the without project condition to 5 percent of the total lockages at each system lock. These analyses also employed lower N values for commodities other than grain computed from Dr. Burton's short-run rail elasticity limiting values even though Mr. Manguno knew and agreed with Dr. Burton that these were short-term and therefore likely underestimates. These analyses did not incorporate any system-wide environmental mitigation costs. These analyses also used the N value of 1.5 for grain movements recommended by the economic panel even though Dr. Burton had recommended 2.0. Despite all these changes designed to produce the most favorable benefit to cost analysis possible for large-scale navigation improvements, the analyses still indicated that large-scale structural measures, such as extensions of the existing locks, were not justified for any locks in the foreseeable future. Only small-scale measures appeared to be justified. Mr. Manguno took this as strong evidence of the robustness of the earlier conclusions that large-scale measures were not economically warranted in the foreseeable future.

95. Mr. Manguno reported these results at a meeting of navigation study team leaders on April 19, 1999 in Rosemont, Illinois, which is summarized in draft minutes sent out by Bradley Thompson on April 20, 1999 (Appendix 28). The minutes state: "Rich stated that based on available data the Preliminary NED plan [most economically favorable plan] appears to be five mooring buoys/cells followed by guidewall extensions with powered kevels at UMR locks 20-25." The minutes also note his statement that no improvements "appear justified" at all any locks on the Illinois Waterway.

96. In short, between June 10, 1998 and through April 1999, all or parts of the economic analysis had been subjected to further review by an economic panel, an independent modeling effort, an expert elicitation panel, an outside economist and a new principal economist. The economist had been instructed by the highest Army Corps authorities to find a rationale for the project. The most cost-effective means of reducing congestion, industry self-help, had been largely eliminated from the study without supporting technical analysis. And Mr. Manguno, the new principal economist, had used N values to run the analyses that were the most favorable for large-scale improvements for which he could find a rationale despite his own reservations. Even so, lock extensions and other large-scale improvements continued to remain unjustified.

C. Developments from May 1999 through the Summer

97. As part of the study, the Governors of the five States in the study area had each appointed a representative to the Governors Liaison Committee. At the time, a GLC meeting was scheduled for May 18, 1999 in Minneapolis-St. Paul MN at which the study team was to report the preliminary NED plan. The NED plan is that plan that reasonably maximizes the net contributions to the Nation's economy of all potential plans for system improvements, i.e., it is the plan with the highest net economic benefits. It is a special plan required by Corps of Engineers regulation ER 1105-2-100.

98. A meeting of the Economic Coordinating Committee was also scheduled for May 5-6, 1999. The ECC was formed at the request of the GLC to facilitate the exchange of information regarding the economic aspects of the study. Each State appointed a member to this committee and there were other committee members including Mr. Brescia, a representative from the U.S. Department of Agriculture, and a representative from the Maritime Administration. The ECC held meetings open to the public usually in conjunction with scheduled GLC meetings. The study team expected to use this meeting to explain the economic and other analyses to these representatives so that they could better explain them to their representatives to the GLC.

99. Around mid-April 1999, Chris Brescia requested a so-called "Economic Summit" that would include top Army Corps officials, some members of the economic study team, and a range of industry representatives to discuss the preliminary results. He requested that this meeting occur on May 5 or 6, 1999. This request is reflected in a memorandum from Dudley Hanson to various team members dated April 14, 1999 (Appendix 29) in which he states: "I think that if MG Anderson grants Chris' request, it would automatically postpone the ECC. I believe that's probably one of Chris' purposes."

100. On April 15, 1999, in a conference call between team leaders, Dusty Rhodes directed the study team to postpone the ECC meeting and not to make any "additional data releases" prior to the summit. This phone call is documented in a memorandum from Bradley Thompson to many study team participants dated that April 15, 1999. (Appendix 29)

101. The so-called Economic Summit occurred on May 5, 1999. The meeting included the following representatives from the navigation industry: Norb Whitlock, the head of American Commercial Barge Lines (one of the largest barging companies); Stephen Sheridan from ConAgra/Peavey, one of the largest grain shippers and barge operators, Gerry Brown, head of barging for Cargill; Chris Brescia, Harry Cook, head of the National Waterways Conference, an association of waterway interests, Barry Palmer, Executive Director of DINAMO, Chris Brescia, Executive Director of MARC 2000, and Paul Bertels, with the National Corn Growers Association. The meeting also included several consultants hired by Mr. Brescia, Mr. Sandor Toth and Dr. Jake Haulk. From the Army Corps of Engineers, the meeting included members of the study team, General Anderson, and Colonel Mudd. It also included representatives from LRD and Army Corps headquarters. The meeting was not open to the public, and I am not aware of any communications to the public prior to the meeting indicating it was going to take place. My understanding of the meeting and pre-meeting among Corps staff only is based on conversations with Mr. Jeff Marmorstein, who attended the meeting, as well as some memos I have reviewed describing the meeting (Appendix 30).

102. The Corps' pre-meeting meeting was opened by Mr. Don Herndon, Chief of Programs and Project management at MVD, when he informed the Corps' attendees that their job was to find a way to justify large-scale projects for the UMR-IW navigation system.

103. Much of the pre-meeting and meeting focused on the central question of the estimates of demand elasticity and appropriate N values. During the post-meeting, Mr. Manguno was asked repeatedly by Dusty Rhodes to identify the N value for grain that would be necessary to show that extending locks was justified in the near term. Rich did not reveal the value, but Colonel Mudd stated that he himself had figured out it would take an n value of about 1.2.

104. The central outcome of this meeting with industry representatives was that a smaller meeting would be held in Chicago, IL on May 11-12, 1999 between selected representatives of industry, selected members of the study team, and selected LRD representatives. The purpose of this meeting was to come to a meeting of the minds between Corps of Engineers management, analysts, and barge industry representatives. This meeting was also not open to the public.

105. On May 11 and 12, 1999, the followup meeting between industry and the Army Corps of Engineers occurred in Chicago. The meeting included Mr. Brescia, Mr. Sandor Toth, a consultant hired by Mr. Brescia, Dr. Jake Haulk, another con-

sultant for Mr. Brescia, Colonel Mudd, project manager Gary Loss, economist Rich Manguno, and operations research analyst Jeff Marmorstein. It also included Ron Keeney, the Chief of Programs and Project Management of the Huntington District office, from LRD, who was brought in to facilitate and Paul Hanley, an LRD economist. My understanding of this meeting is based on conversations with Mr. Marmorstein and on two summaries of the meeting: a summary by Gary Loss dated June 1, 1999 and a memorandum from Colonel Mudd to General Anderson, which was subsequently forwarded to General Fuhrman with copies to several other participants (Appendix 31).

106. After Mr. Loss briefed the meeting participants with the current estimates of benefits and costs Mr. Ron Keeney opened the meeting by stating that the study only needed to close the "small" gap between benefits and costs to justify the desired large-scale projects. A small tweak in the benefit estimate and small decrease in the cost estimate would accomplish the closing of the gap. In particular, Ron Keeney stated that an important category of project benefits in LRD is large cost savings from avoiding extensive rehabilitation of old projects. Mr. Keeney noted that the study analysis to date indicated that there would not be any of these rehabilitation cost savings as the engineering work group had indicated that scheduled rehabilitations would be the same with and without potential projects. Mr. Keeney indicated that a reanalysis of this benefit category could be useful in closing the benefit to cost gap.

107. Colonel Mudd sent a memorandum to General Anderson dated May 14, 1999 (Appendix 31) describing the meeting and its results, which General Anderson forwarded to General Fuhrman. Colonel Mudd stated that "[t]he meeting outcome was a lot better than I had expected." The memorandum states that MVD had agreed to "re-look and adjust were appropriate" the following items. They included cutting the contingency cost estimate from 35 percent back to 25 to reduce the estimated costs of the lock extensions and to reevaluate rehabilitation cost savings.

108. The minutes of this meeting also describe an agreement that Jeff Marmorstein would do some analysis with Sandor Toth, MARC 2000's consultant, to determine if Mr. Toth's analysis could produce an acceptable, lower estimate of the N value for grain. But, as a June 2, 1999 memorandum from Gary Loss to General Anderson, an industry representative and other top Corps officials stated, the "study team indicates that they do not see a defensible (sic) rationale for "Toth" approach (Appendix 32).

109. In a May 28, 1999 Study Update authored by Gary Loss, then the project manager, and broadly distributed, he states that engineering review has resulted in cutting the contingency cost percentage from 35 percent to 25 percent and has found substantial rehabilitation cost savings (Appendix 33). This memorandum indicates that the many years of independently technically reviewed prior analysis on both these issues was overruled by a new re-look within 2 weeks of the Chicago meeting with MARC 2000 representatives and LRD representatives. To my knowledge, no significant documentation of this new "analysis" has ever been disseminated within the navigation study team or made available to the public, and none of this reanalysis has ever been subjected to Independent Technical Review as required by Corps of Engineers regulations.

110. I have since seen a three page document that I understand was provided to the public explaining this new major rehabilitation conclusion (Appendix 34). It provides no indication of the prior different conclusion. Its rationale appears to be that a document has "defined" major rehabilitation as something that occurs "with an expected extended life of 25 years." Because some locks at issue were last rehabilitated in 1990, this means that major rehabilitation would have to occur in 2015 (in contradiction of Mr. McGrath's detailed analysis). It further asserts, in contrast to what I was repeatedly told in 1997 and 1998, that the cost of the major rehabilitation items to make the existing locks an integral part of the proposed lock extensions "is included in the estimates for the lock extension alternatives," and thus would result in rehabilitation cost savings in the future.

111. On May 19, 1999, study team leaders met in Minneapolis, St. Paul MN after the May 18, 1999 GLC meeting at which the Corps was scheduled to release the preliminary economic findings but did not. At this meeting, Rich Manguno was urged one last time to reevaluate the 1.5 N value that he recommended for grain products. He again stated that 1.5 was as far as he could go.

112. On May 27, 1999, Colonel Mudd called Mr. Manguno. Gary Loss, who had by now replaced Dudley Hanson as the overall study manager, was also on the call. In this phone call, Colonel Mudd instructed Mr. Manguno that he should use an N value for grain of 1.2. He further stated that he had developed a rationale for how it could be 1.2. He explained the rationale (later repeated publicly) as follows. The origins of Iowa grain that comes to the Mississippi River can be separated into three

regions: a region near the river, a middle region of Iowa, and a farthest from the river region. The expert elicitation panel suggested that grain produced near the river had a relatively lower N value and grain farthest away a relatively higher N value. Col. Mudd stated that an N value of 1.2 could be justified by taking a weighted average of 1.0, 1.5, and 2.0 using as weights the proportion of grain delivered to the river from these three bands. Since most grain comes to the river from the easternmost band, this weighting would yield an N value of 1.2. Col. Mudd directed that this value be applied to all agricultural products demands for barge transportation for all origin and destination pairs.

113. Colonel Mudd is not an economist and no economist involved in the study was involved in generating this N of 1.2 or has ever endorsed this number.

114. There are many flaws with this rationale, which I set forth in a telephone conference call with Col. Mudd, Rich Manguno, Gary Loss and others on June 22, 1999 and subsequent memorandum (Appendix 35). The most basic flaw is that this rationale is, among other things, based on an obvious mathematical error. The N value appears in the functions in the ESSENCE model as an exponent. Taking the linearly weighted average of exponents to three (or any number of) functions (the functions for three separate grain regions) does not yield the correctly weighted average of these combined functions.

115. On June 10, 1999, I sent a memorandum by email to Colonel Mudd, Gary Loss, Richard Manguno and Diane Karnish noting that General Anderson's September 1998 directive extending the economics panel for the duration of the study had made the economics panel "responsible for" all economic products but the panel had not met for more than 6 months (Appendix 35). I asked Colonel Mudd whether he intended to call a meeting prior to public meetings on the navigation study scheduled for July 1999.

116. In response to this email, the first economic panel meeting since September 1998 was held via a teleconference on June 22, 1999 with all available panel members. Not all panel members were available on that date and I recall the participants were Col. Mudd, Rich Manguno, Wes Walker, Gary Loss, and I. On this call, Mr. Manguno briefed the panel members on the changes made to the N values and the theory behind the changes. During this call, Gary Loss also described the changes made to the major rehabilitation analysis and project cost estimates.

117. During the call, I explained to Colonel Mudd several reasons why his methodology for arriving at an N value of 1.2 was flawed, including most of the reasons set forth later by me in a memorandum dated June 29, 1999 (Appendix 35). Wes Walker expressed concern regarding all the changes that had taken place since the panel last met and requested more detail and time to examine the changes. The economics panel also questioned the use of short run rail elasticities in the model for goods other than grain as a substitute for long run water elasticities.

118. The panel requested details and explanations for why the already reviewed cost estimates for project construction had decreased and for why rehabilitation costs avoided had increased so dramatically over the levels the panel had been previously briefed. Col. Mudd requested written comments and recommended solutions be immediately forwarded to him and the project manager Gary Loss.

119. On June 23, Gary Loss provided panel members with a file setting forth the changes to the major rehabilitation numbers.

120. On June 24, I sent Gary Loss a memorandum, with copies to other economists and Colonel Mudd, requesting further explanation of the new numbers. On the same day, Gary Loss forwarded to me an email response from Roger Less, an engineer in the Rock Island District office, that provided only the most cursory explanation of the changes and that made no reference to any documented technical analysis. Copies of this correspondence are attached as Appendix 36. Wes Walker and I were the only panel members to send written comments. I sent my comments in a memo dated June 29, 1999. Wes Walker sent his comments on also on June 29, 1999. Our comments raised a number of objections to the changes and are attached as Appendix 35.

121. Three days later, on July 2, 1999, Colonel Mudd emailed Gen. Anderson recommending disbanding the economics panel for the UMR-IW system study. In an email dated July 4, 1999, Gen. Anderson so ordered. These emails are attached as Appendix 37.

122. In a June 1999 newsletter, the Army Corps presented its new preliminary benefit/cost analysis of the various project alternatives in a series of public meetings. This analysis for the first time now indicated that a project involving the immediate extension of seven locks now provided benefits greater than their costs. Copies of this presentation, which is publicly available, are attached as Appendix 38.

D. Developments Since the Summer of 1999

123. In July 1999 and through the summer, the Army Corps presented its new preliminary benefit and cost analysis of the various project alternatives in a series of public meetings.

124. There were relatively minor changes to the inputs and therefore economic analysis of project alternatives over the summer and early fall of 1999, which modestly changed the benefit/cost analysis of the various alternatives. At a November 18, 1999 meeting of the Governor's Liaison Committee, Rich Manguno presented the analysis of benefits and costs at that time. This presentation shows that an analysis of extending five locks had a net positive economic benefit of \$8.686 million per year, but of this \$7.122 million were rehabilitation cost savings.

125. Despite all the changes directed by top Army Corps of Engineers officials, this analysis also showed that the alternatives that had the highest net positive benefits still involved postponing the start of construction of lock extensions until 2011. This is because, even under the Faucett traffic projections, the modest traffic congestion in the early years does not warrant the cost of lock extensions at that time and so drags down the overall benefit/cost analysis. A copy of Mr. Manguno's "overheads" presented to this meeting is attached as Appendix 2.

126. The November 1999 GLC meeting was also the first time at which the study team provided an estimate of system wide environmental costs. The study team had early decided to separate the environmental analysis of the direct impact of extending locks, which could immediately displace some wildlife habitat, with the so-called system wide impacts of the overall project. These system wide impacts involved such impacts as mortality from increased barge traffic of fish. Their costs had to be added to the financial costs of any project. None of the benefit-cost analyses described so far, including the presentation made by Mr. Manguno at the November, 1999 GLC meeting, incorporated these system wide environmental costs.

127. On January 12, 2000, Dave Tipple sent out by email a slightly revised optimization study provided him 2 days earlier by Rich Manguno which still indicated that the alternatives with the highest economic benefits all involved postponing the start of lock construction until at least 2011. This analysis still does not account for system wide environmental costs, which would further postpone the time at which lock extensions were justified. And during this period, of course, traffic forecast projections could be verified. (Copies of this analysis are attached as Appendix 39.)

128. None of the benefit cost analyses described in this affidavit incorporated most environmental costs. The study team had early decided to separate the environmental analysis of the site-specific impact of extending locks, which could immediately displace some wildlife habitat, with the so-called system wide impacts of the overall project. These system wide impacts involved such effects as fish mortality from increased barge traffic. These system costs, which have been estimated to be far greater than the site-specific costs, must be added to the financial costs of any project, thus reducing the net economic benefits.

129. At a January Navigation Environmental Coordinating Committee meeting, Ken Barr presented what was then described as the preliminary estimate of system wide environmental costs for alternative J. This alternative involved the extension of 5 Mississippi River locks and the two Illinois River locks. This estimate put system environmental costs at \$10.5 million per year. I have seen a copy of the hand-out listing this figure, and it is attached as Appendix 40). Mr. Manguno's benefit and cost analyses set forth at the GLC meeting in November (Appendix 2) and identically in Appendix 39 indicate that the total net economic benefits for this alternative, not counting these environmental costs, is \$11.026 million. In other words, at least as of January, 2000 the total average annual benefits for extension of seven locks was estimated to be \$526,000.

V. SUMMARY

130. This section of my affidavit summarizes the above discussion.

131. The events show that top Army Corps of Engineer officials, including Major General Fuhrman, Major General Anderson, and Colonel Mudd, repeatedly rejected the advice of a broad range of Corps economists, and continually attempted to transfer management, production and review of economic products in an effort to find economists who could or would justify large-scale improvements. The events show that the model developed by the study team was first presented to a broad range of Army Corps of Engineers economists in October 1997, who responded enthusiastically. It was then subjected to an Independent Technical Review, which had resulted by June 1998 in endorsement of the model while raising a few areas for added work. Despite this review, because of concerns that I was "out to shutdown the Corps," General Anderson established a new panel to completely review again the economic

products and to oversee the future production of economic products. By August 1998, this new economic panel had endorsed the study and recommended an N value of 1.5 for grain (the key N value). Also at the direction of the study manager, a second model was used to verify the UMR-IW economic model under the direction of Dr. Mike Bronzini, which yielded similar results. In September 1998, the panel was essentially shelved and management given to Mr. Manguno under instructions to produce an analysis to justify large-scale improvements. Despite this instruction, Mr. Manguno continued to insist that he could not justify using an N value of less than 1.5 for grain in the model. He was directed to use an N value of 1.2 for grain. Then, when the economics panel reengaged, because it had not yet been formally abolished previously, and expressed disagreement with this direction, it was abolished. In short, all Army Corps economists involved in the study ultimately supported the ultimate analytic method, and none supported use of an N value less than 1.5 for grain.

132. The evidence also shows that public presentations or release of the preliminary economic analysis were scheduled as early as April 1998 and were repeatedly postponed when the economic analysis at that time showed that large-scale measures were not justified. Even in November 1998, when results were released, only a range of alternatives was presented. Moreover, such a range should presumably have encompassed a range around the most likely alternatives. Because the economic panel had recommended the use of an N for grain of 1.5, N values of 2.0 should presumably have been shown. But the highest N value represented was the 1.5. Again, when results were to be provided to the Economic Coordinating Committee and to the GLC in May 1999, the presentations were postponed. Only after the analysis had been altered in May and June 1999, were preliminary results released to the public.

133. In addition to critical changes to the N value, the events show deliberate efforts to distort the analysis of rehabilitation cost savings. An original engineering analysis reported no saved rehabilitation cost savings from expanded locks and this was reflected in the engineering handoff to economics in March 1988, which followed an Independent Technical Review. This conclusion remained in place despite frequent discussion of the topic by study managers until May 1999. The evidence shows that the idea for changing this analysis was then introduced at a meeting with industry in May 1999 by Ron Keeney, the Chief of Programs and Project management in the Huntington District, who acknowledged that the analysis to date showed no savings but who noted that his Division frequently found such savings helped to justify new projects. New information describing such savings was then provided to Mr. Manguno within days. No detailed documentation of the new analysis has ever been provided to the study team leaders or to the public and it has undergone no independent technical review. The public explanation of this change contradicts information provided to Mr. Marmorstein and me that the cost estimates of lock extensions included no rehabilitation costs. In contrast to the extensive engineering and economic analyses that indicated that no major rehabilitation for major components would be required until at least 2033, this recent public explanation also stated that rehabilitation would be required on many locks in 2015 based on the definition of rehabilitation as something that occurs every 25 years. In the economic analysis presented at the GLC in November 1999, the rehabilitation cost savings represented roughly 7/8ths of the net benefits of extending locks.

134. The evidence also shows that in the original economic analysis, industry would and could use self-help much of the time to reduce the congestion costs even without any new construction. The evidence shows that Mr. Manguno was instructed in January 1999 to restrict the model to allow self-help only 5 percent of the time. No documentation of any analysis has ever been made to support this arbitrary restriction.

135. The evidence also shows that the original costs for the expanded locks included a 35 percent contingency cost because of the innovative nature of the construction techniques. The Independent Technical Review of the work products of the engineering work group required that the contingency cost estimate be set at this level because of the untried new construction techniques and engineering plan. The evidence shows that this contingency cost estimate was arbitrarily lowered without any documented or independently reviewed additional analysis within 16 days following a meeting with navigation industry representatives on May 12, 1999.

136. The evidence also shows that despite all these changes, and despite the use of projected increases in traffic demand that real world experience has shown to be greatly overestimated so far, the total net economic benefits are vanishingly small. For an alternative that involves immediate extension of seven locks, they amount to only around \$500,000 per year. Other alternatives may have slightly higher or lower numbers. This means that if any of the directed changes had not been made

(changes to the elasticity of demand for barging, i.e., the N values, changes to the rehabilitation cost savings, changes to the self-help analysis, changes to the contingency costs), expansion of locks would not have a positive benefit/cost analysis for the foreseeable future.

137. Finally, the evidence shows that even with all these changes, the alternative that would maximize net economic benefits would still be to postpone the start of lock expansion until at least 2011. That alternative would also allow experience to verify if traffic is in fact growing sufficient to justify lock extension at that time.

