

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 2008

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

NONDEPARTMENTAL WITNESSES

[CLERK'S NOTE.—At the direction of the subcommittee chairman, the following statements received by the subcommittee are made part of the hearing record on the Fiscal Year 2008 Energy and Water Development Appropriations Act.]

DEPARTMENT OF DEFENSE—CIVIL

DEPARTMENT OF THE ARMY

CORPS OF ENGINEERS—CIVIL

PREPARED STATEMENT OF THE FIFTH LOUISIANA LEVEE DISTRICT

The Board of Commissioners for the Fifth Louisiana Levee District respectfully requests that construction funding for Mississippi River Levees be increased from the \$28,767,000 contained in the proposed budget for fiscal year 2008, to the U.S. Army Corp of Engineers' capability of \$98,352,000, and the Mississippi River Levee maintenance allocation be increased from the proposed \$10,726,000 to \$34,538,000.

Reduced funding, combined with the inability to let construction contracts under a continuing contract clause, has left thousands in Louisiana vulnerable to the adverse effects of a deficient levee system. Construction of levee enlargements is essential if the levee is to contain high river stages that are sure to come eventually.

The effect of fully funded contracts for levee construction, now required under Public Law 109–103, (Sec. 106 and 108), adopted by the 109th Congress in 2005, as opposed to the previous system of continuing contract clauses, has virtually halted enlargement of the Mississippi River Levee System in Louisiana. This comes at a time when the State of Louisiana is still reeling from the effects of devastation caused by serious lack of funding for levees in the past. Administration after administration has cut funding for levee systems and flood control, providing less and less with each new Federal budget. The current proposed budget is no exception, with only \$260,000,000 allocated for the entire Mississippi River and Tributaries (MR&T) project. We request that be increased to the Corp's capabilities of \$500,000,000.

Less than \$10 billion has been invested in the MR&T Project since its authorization following the great flood of 1927, a fraction of the billions that have been spent trying to restore the damage to lives and property created by levee failures following Hurricane Katrina. Billions spent that have made almost no impact.

We urge Congress to increase funding to the Corps of Engineers in fiscal year 2008, to ensure that the Corps is not forced to halt of delay contracts for levee construction essential to the well-being of this Nation. It is vital that the MR&T project(s) be completed at the earliest possible date. This can only be accomplished through adequate funding and repeal of the mandate for contracts to be fully funded prior to the beginning construction. Prior to August 2005, the MR&T projects had a performance-to-cost ratio of 24-to-1 on work completed. Hurricane Katrina changed that ratio drastically. The economic justification for increased funds for levee construction in Louisiana cannot be questioned or disputed.

PREPARED STATEMENT OF THE CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT

Testimony for the United States Army Corps of Engineers Tropicana and Flamingo Washes Flood Control Project, Las Vegas, Nevada.—\$12,500,000 construction appropriations, which includes appropriations for work performed pursuant to Section 211 of the Water Resources Development Act of 1996.

Presented herewith is testimony in support of \$12,500,000 for the final construction appropriation necessary for the U.S. Army Corps of Engineers (Corps) to complete the Tropicana and Flamingo Washes flood control project (hereafter referred to as the Project) in Clark County, Nevada, and to reimburse the non-Federal sponsors, Clark County and the Clark County Regional Flood Control District, for work performed in advance of the Federal Project pursuant to Section 211 of the Water Resources Development Act (WRDA) of 1996.

The President's fiscal year 2008 Civil Works budget request to Congress identifies no funding for this Project. It is imperative that we receive the requested Federal funding to protect residents of the rapidly growing Las Vegas Valley in Southern Nevada from devastating floods.

Some history of previous funding requests and budgeting challenges associated with bringing this Project to a close need to be explained and outlined. On March 6, 2006, we learned that fiscal year 2004 and 2005 appropriations for the Project were reprogrammed to other projects in the Los Angeles District in the amount of approximately \$7,000,000. While a commitment was made to us by the Corps to re-instate these funds in fiscal year 2006, they were not made available to us due to language changes in the Conference Report that accompanies H.R. 2419. In order to see the construction of the Project continue, we asked and received permission to use the \$3 million of Section 211 funds from fiscal year 2006 appropriations to increase funding of Construction General. We also contributed an additional \$1 million to the Project by advancing our 5 percent cash commitment earlier than originally anticipated. These steps were necessary to prevent the Project from shutting down in mid-construction. In fiscal year 2007, we submitted testimony requesting \$22 million for Construction General and Section 211. We now learn that under current Continued Resolution Authority, the Project may receive Federal funding in fiscal year 2007 in the amount of only \$12.4 million—the lesser of the two budgets authorized by the House and Senate. This is almost \$10 million less than the original request. And to further muddy the waters, the President's fiscal year 2008 Civil Works budget request to Congress identifies no funding to complete this Project.

Because the Corps' budget requests are made well in advance of the fiscal year 2008 budget being announced, the Corps may have assumed—that if we had received the \$22 million request in 2007—the Project would have been completed and no further funding for Section 211 or construction would have been requested or necessary. Clearly, now, that's not what occurred and another \$12.5 million is necessary to bring the Project to a close and provide what is due under Section 211.

The non-Federal sponsors are, therefore, requesting \$12.5 million for both the final construction funding and reimbursement to the local sponsors of this Project. Funding at this level will allow the Federal commitments made in the past to be finally realized and completed in fiscal year 2008.

The Feasibility Report for the Project was completed in October 1991, and congressional authorization was included in the WRDA of 1992. The first Federal appropriation to initiate construction of the Project became available through the Energy and Water Resources Development Appropriations Bill signed into law by the President in October 1993. The Project Cooperation Agreement (PCA) was fully executed in February 1995. Federal appropriations to date have totaled \$281.7 million (allocations \$239.1 million), allowing continued Project construction. The total cost of the flood control portion of the Project is currently estimated at \$336.3 million, higher than originally anticipated primarily due to the delay in Federal appropriations which has resulted in increases in real estate and construction costs.

In order to provide the required flood protection in a timely fashion, the non-Federal sponsors are implementing certain features in advance of the Federal Government pursuant to Section 211 of WRDA 1996. An amendment to the PCA was fully executed on December 17, 1999, that formalizes the provisions of Section 211 of WRDA 1996. Section 211(f) of WRDA 1996 recognized the Project as one of eight projects in the Nation to demonstrate the potential advantages and effectiveness of non-Federal implementation of Federal flood control projects. The work funded by the non-Federal sponsors and completed is substantial and includes features that were designed by the non-Federal sponsors and constructed by either the Federal Government or the non-Federal sponsors. The language contained in the fiscal year 2000 Energy and Water Development Bill, Senate Report 106-58, states in part, "The Committee expects . . . every effort to even out reimbursement payments to

lessen future budgetary impacts.” To date, only \$13.5 million has been reimbursed of the previously authorized \$20.6 million.

The local community had constructed certain elements of the Project prior to the execution of the PCA. These Project elements required modifications in order to fit into the Corps’ plan and fulfill the need for a “total fan approach” to the flooding problems in the Las Vegas Valley. The work performed by the non-Federal sponsors, construction of Red Rock Detention Basin and Flamingo Detention Basin, has been accounted for in Section 104 credits and totals \$9,906,000.

We have already realized some benefits from construction of flood control features on the Project. We have removed 18.7 square miles of flood zones from Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate Maps. This was accomplished through the completion of various project elements. We anticipate removal of additional flood zones when the Project is completed.

In summary, the Project is an important public safety project designed to provide flood protection for one of the fastest growing urban areas in the Nation. We ask that the committee provide the Secretary of the Army with \$12.5 million, in fiscal year 2008, in order to meet prior requests to complete the Project and to reimburse the non-Federal sponsors the Federal proportionate share of the work completed by the sponsors in advance of the Federal Government.

The committee is aware that flood control measures are a necessary investment required preventing loss of life and damages to people’s homes and businesses. Flood control is a wise investment that will pay for itself by preserving life and property and reducing the probability of repeatedly asking the Federal Government for disaster assistance. Therefore, when balancing the Federal budget, we believe a thorough analysis will show that there is substantial future Federal savings in disaster assistance that supports sufficient appropriations through the Civil Works Budget.

LAS VEGAS GROWTH, SPECIFIC PROJECT BENEFITS AND FLOODING HISTORY

The Las Vegas Valley continues to experience unprecedented growth. In the past 20+ years, people have moved into our area from all parts of the Nation to seek employment, provide necessary services, retire in the Sunbelt, and become part of this dynamic community. Approximately 6,000 people relocate to the Las Vegas Valley every month of the year. Currently the population exceeds 1.9 million. The latest statistics show that more than 31,000 residential units are built annually. Once all of these factors are combined, the result is that the Las Vegas Valley continues to be one of the fastest-growing metropolitan areas in the Nation.

The Project being constructed by the Corps is designed to collect flood flows from a 174-square-mile contributing drainage area. The Project includes three debris basins, five detention basins, 28 miles of primary channels, and a network of lateral collector channels. The debris basins collect flood flows from undeveloped Federal lands at the headwaters of the alluvial fans and trap large bedload debris before it enters the channels and causes erosion damage. The detention basins greatly reduce the magnitude of the flood flows so that the flows can be safely released and conveyed through the urbanized area at non-damaging rates. A primary system of channels collects outflows from the debris and detention basins and conveys these floodwaters through our urban area. Lateral collector channels, which are funded locally, collect runoff from smaller developed watersheds and deliver it to the primary channels. Since flood flow over the alluvial fans, which ring the Las Vegas Valley, is so unpredictable in terms of the direction it will take during any given flood, all of the components of the Project are critical.

In recent history, torrential rains deluged the Las Vegas Valley the morning of July 8, 1999, causing widespread drainage problems and major damages to public and private properties. Some of the greatest rainfall depths occurred over the southwest portions of the Las Vegas Valley resulting in significant flows in the Tropicana and Flamingo Washes. The runoff from this intense rainfall caused widespread street flooding and record high flows in normally dry washes and flood control facilities. The news media reported two deaths during this flood event, one of which was a drowning in the Flamingo Wash. Damages to public property caused by this storm were estimated at \$20.5 million. The President declared Clark County a Federal Disaster Area on July 19, 1999, recognizing the severity of damages to public and private properties. Significant damages could have been avoided if the Project had been fully implemented. However, those features of the Project that were completed did help to mitigate damages.

On August 19, 2003 another flash flood hit the Las Vegas Valley and damaged hundreds of homes and businesses. Again in the winter of 2004–2005, the area experienced heavier than normal rainfall amounts. That winter brought twice the area’s

average annual rainfall causing flooding along the Virgin and Muddy Rivers in Clark County, Nevada. Several areas in the Las Vegas Valley also experienced drainage problems. While the flood control features built as part of the Project helped to protect vast areas of our community, storms of this magnitude only reinforce the need to expeditiously build all flood control projects in the Las Vegas Valley.

PREPARED STATEMENT OF THE CITY OF FLAGSTAFF, ARIZONA

RIO DE FLAG FLOOD CONTROL PROJECT

Chairman Dorgan, Ranking Member Domenici, and distinguished members of the subcommittee, thank you for allowing me to testify on behalf of the city of Flagstaff, Arizona in support of \$8 million in the Army Corps of Engineers budget for the Rio de Flag flood control project in fiscal year 2008 and for an increased authorization, or 902(b) fix, for the project. The Rio de Flag flood control project is critically important to the city, to northern Arizona, and, ultimately, to the Nation.

As you may know, Mr. Chairman, with this subcommittee's help over the last 3 fiscal years, Rio de Flag received more than \$11 million to continue construction on this important project. We are extremely grateful that the subcommittee boosted this project well above the President's request both years, and we would appreciate your continued support for this project in fiscal year 2008.

Like many other projects under the Army Corps's jurisdiction, Rio de Flag received no funding in the President's fiscal year 2008 budget, although the Corps has expressed a capability of \$8 million to continue construction on the project. We are hopeful that the subcommittee will fund the Rio de Flag project at \$8 million when drafting its bill in order to keep the project on an optimal schedule.

Flooding along the Rio de Flag dates back as far as 1888. The Army Corps has identified a Federal interest in solving this long-standing flooding problem through the Rio de Flag, Flagstaff, Arizona—Feasibility Report and Environmental Impact Study (EIS). The recommended plan contained in this feasibility report was developed based on the following opportunities: (1) flood control and flood damage reduction; (2) environmental mitigation and enhancement; (3) water resource management; (4) public recreation; and (5) redevelopment opportunities. This plan will result in benefits to not only the local community, but to the region and the Nation.

The feasibility study by the Corps of Engineers has revealed that a 500-year flood could cause serious economic hardship to the city. In fact, a devastating 500-year flood could damage or destroy approximately 1,500 structures valued at more than \$450 million. Similarly, a 100-year flood would cause an estimated \$100 million in damages. In the event of a catastrophic flood, over half of Flagstaff's population of more than 60,000 would be directly impacted or affected.

In addition, a wide range of residential, commercial, downtown business and tourism, and industrial properties are at risk. Damages could also occur to numerous historic structures and historic Route 66. The Burlington Northern & Santa Fe Railway (BNSF), one of the primary east-west corridors for rail freight, could be destroyed, as well as U.S. Interstate 40, one of the country's most important east-west interstate links. Additionally, a significant portion of Northern Arizona University (NAU) could incur catastrophic physical damages, disruptions, and closings. Public infrastructure (e.g., streets, bridges, water, and sewer facilities), and franchised utilities (e.g., power and telecommunications) could be affected or destroyed. Transportation disruptions could make large areas of the city inaccessible for days.

Madame Chairwoman, the intense wildfires that have devastated the West during the last several years have only exacerbated the flood potential and hazard in Flagstaff. An intense wildfire near Flagstaff could strip the soil of ground cover and vegetation, which could, in turn, increase runoff and pose an even greater threat of a catastrophic flood.

In short, a large flood could cripple Flagstaff for years. This is why the city believes it is important to ensure that this project remains on schedule and that the Corps is able to utilize its expressed capability of \$8 million in fiscal year 2008 for construction of this flood control project.

In the city's discussions with the Corps, both the central office in Washington and its Los Angeles District Office also believe that the Rio de Flag project is of the utmost importance and both offices believe the project should be placed high on the subcommittee's priority list. We are hopeful that the subcommittee will consider this advice and also place the project high on its priority list and fully fund the project at \$8 million for fiscal year 2008.

It is important to note that the city has secured the necessary property rights to begin construction, and the city is prepared to assume the costs for the non-Federal portion of the cost-sharing agreement.

Finally, I strongly support inclusion of a 902(b) fix that was included in the fiscal year 2007 Senate Energy and Water Development Appropriations bill (as Section 113), which will increase the authorization of the project from \$35 to \$54 million, but was not included in the final bill due to the passage of the continuing resolution for fiscal year 2007. Nevertheless, because of the Corps' commitment to this project, on November 9, 2006, the Corps announced that they had approved a waiver to their policy to allow the construction contract award of Clay Avenue Wash Detention Basin prior to reauthorization of the total project. The current estimate for construction of the basin is \$4.6 million. Without this increased authorization for the project, it cannot move forward as planned. Therefore, it is critically important that this provision is inserted in the bill:

"SEC. _____. The project for flood damage reduction, Rio de Flag, Flagstaff, Arizona, authorized in section 101(b)(3) of the Water Resources Development Act, 2000, is modified to authorize the Secretary to construct the project, at a total cost of \$54,130,000, with an estimated Federal cost of \$34,970,000, and an estimated non-federal cost of \$19,160,000."

As you may know, project construction and implementation of Rio de Flag was authorized in the Water Resources Development Act (WRDA) of 2000. The total project cost is now estimated to be \$54,100,000 in and above the reconnaissance study or the feasibility study. The non-federal share is currently \$24,000,000 and the Federal share is currently \$30,000,000. Final project costs must be adjusted based on Value Engineering and final design features. It is important to note the City of Flagstaff has already committed more than \$10,500,000 to this project, and an additional \$2,000,000 in excess of its cost share agreement. This clearly demonstrates the city's commitment to completing this important project. Through this investment in the project, the city has entered into the Project Cooperation Agreement (PCA) with the Department of the Army.

The city of Flagstaff, as the non-federal sponsor, is responsible for all costs related to required Lands, Easements, Rights-of-Way, Relocations, and Disposals (LERRD's). The city has already secured the necessary property rights to begin construction in 2004. Implementation of the city's Downtown and Southside Redevelopment Initiatives (\$100,000,000 in private funds) are entirely dependent on the successful completion of the Rio de Flag project. The Rio de Flag project will also provide a critical missing bike/pedestrian connection under Route 66 and the BNSF Railroad to replace the existing hazardous at grade crossings.

Both design and construction are divided into two phases. Phase I construction commenced in 2004. Phase II of the project commenced in 2005.

Mr. Chairman, the Rio de Flag project is exactly the kind of project that was envisioned when the Corps was created because it will avert catastrophic floods, it will save lives and property, and it will promote economic growth. In short, this project is a win-win for the Federal Government, the city, and the surrounding communities.

Furthermore, the amount of money invested in this project by the Federal Government—approximately \$30 million—will be saved exponentially in costs to the Federal Government in the case of a large and catastrophic flood, which could be more than \$450 million. It will also promote economic growth and redevelopment along areas that are currently underserved because of the flood potential.

In conclusion, the Rio de Flag project should be considered a high priority for this subcommittee, and I encourage you to support full funding of \$8 million for this project in the fiscal year 2008 Energy and Water Development Appropriations bill. I also strongly support the inclusion of an increased authorization, or 902(b) fix, for the project from \$35 to \$54 million. Thank you in advance for your consideration.

PREPARED STATEMENT OF THE ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

Mr. Chairman and members of the committee, I am Paul Latture II, Arkansas Chairman of the Arkansas River Basin Interstate Committee, from Little Rock, Arkansas.

It is my privilege to present this statement on behalf of the Arkansas members of our committee in support of adequate funding for water resource development projects in our area of the Arkansas River Basin. Other members of the committee are: Mr. Jack Long, Little Rock; Mr. Jeff Pipkin, Russellville; Mr. Scott McGeorge, Pine Bluff; and Mr. Buck Shell, Van Buren.

The public investment in the McClellan-Kerr has paid significant dividends over the life of the project. The most recent investment included the completion of the Montgomery Point Lock and Dam. Since the opening of Montgomery Point, there has been a 10 percent increase in total tonnage on the system. In 2005, there was an 8 percent increase in tonnage. This is a direct result of the increased reliability of the system. Without Montgomery Point Lock and Dam, the river system would have been closed 25 percent of the time, according to Corps of Engineers officials. We fully expect that tonnage will continue to increase. But maintaining the high reliability of the system depends on protecting the investment by funding projects such as the significant backlog of Operations and Maintenance that has built up over the years, by completing the Arkansas-White River Cut-off study and construction, and by fulfilling the wish of Congress in completing the 12-foot channel project.

Mr. Chairman, Public Law 108-137 authorized a 12-foot channel on the McClellan-Kerr Arkansas River Navigation System. The Corps is now obligated to operate and maintain the system as a 12-foot channel. Over 90 percent of the system currently is adequate for a 12-foot channel. Deepening the remainder of the channel to 12 feet will allow carriers to place 43 percent more cargo on barges, which will reduce the amount of fuel consumed and emissions released. Funds in the amount of \$7.0 million were allocated in fiscal year 2005. Those funds were used to complete the Feasibility Study and Environmental Impact Statement with the balance used on engineering, design, and construction activities. Environmental benefits include the creation of new aquatic habitat through new dike construction and the construction of Least Tern islands through beneficial use of dredged material. The Corps of Engineers has developed a comprehensive plan to execute the project in the States of Arkansas and Oklahoma to the best advantage of both States and the best use of the funds.

Therefore, we request \$40 million to maintain the authorized depth and execute the plan to its full capability in fiscal year 2008. This investment will increase the cost competitiveness of this low cost, environment-friendly transportation mode and help us combat the loss of industry and jobs to overseas.

Arkansas-White Rivers Cutoff Study is to determine a permanent solution to prevent the developing cutoff from joining the Arkansas and White River near the confluence of the McClellan-Kerr Arkansas River Navigation System and the Mississippi Rivers. If not corrected this occurrence could have a dramatic adverse affect on the navigation system. Unless corrected, this will effectively drain the water from the navigation system and halt the movement of commerce on the system.

We request an appropriation of \$3.5 million of which \$400,000 will complete the study and \$3.1 million will be used for design and construction activities at Jim Smith Lake and along the banks of the Arkansas and White Rivers to support navigation.

Maintenance of the Navigation System.—In preparation for the deepening of the navigation system from 9 to 12 feet, there is a backlog of maintenance items that has been deferred due to insufficient budgets to allow proper maintenance. These maintenance items are required even to support navigation at the 9-foot depth in order to not jeopardize the reliability of the system. Therefore, we request funding for the Little Rock District of the Corps of Engineers to be at least \$26 million for the upcoming fiscal year for routine and deferred channel maintenance. These funds would be used for such things as repair of bank stabilization work, needed advance maintenance dredging, and other repairs needed on the system's components that have significantly deteriorated over the past three decades.

Mr. Chairman, we respectfully request that the committee consider these requests as the most important to our transportation system at this time. We must maintain this country's transportation infrastructure or little else will matter in the future.

PREPARED STATEMENT OF THE BOARD OF LEVEE COMMISSIONERS FOR THE YAZOO-MISSISSIPPI DELTA

On behalf of the thousands of citizens in its 10-county district in Mississippi, the Yazoo-Mississippi Delta Levee Board respectfully urges Congress to fund the Mississippi River and Tributaries Project (MR&T) to the full U.S. Army Corps of Engineers' 2008 capability of \$500 million.

While the totality of the Mississippi Valley Flood Control Association's requested fiscal year 2008 Civil Works Requested Budget (documentation for which is attached) represents badly needed work items throughout the Mississippi Valley, we shall speak specifically to those critically important flood control needs within our levee district in this space allotted us.

The Mainline Mississippi River levee system is one of the great engineering successes in America. For 75 years it has protected lives and livelihoods within the shadow of the Father of All Waters, and it will continue to do so in the years ahead—but only if properly strengthened and maintained. We urge Congress to appropriate the needed \$98.352 million to maintain our levees and keep our citizens safe and dry. Within that we will be able to do two seepage control projects at Farrell and Trotter's.

It is only through a lack of required funding that one of the most successful and non-controversial flood control projects in the United States has come to a grinding halt in our district. The Upper Yazoo Project (UYP), which our board is proud to sponsor, is the prototypical example of what a flood control project should be—effective, environmentally sound, universally favored. While flood control efforts in other areas are threatened or stalled by lawsuits and citizen upheaval, the UYP has everyone's blessing, and is absent only the funds to complete it.

Restoring the Yazoo/Coldwater/Tallahatchie river system to its flow capacity and stopping interbasin transfer of flood waters, the UYP is about two-thirds complete. The city of Greenwood, Mississippi, is already receiving its benefits. But upstream, such areas as Marks, Lambert, Moorhead, Mississippi Delta Community College, Tutwiler, Glendora, Sumner and Webb are not—and will not unless Congress dedicates the \$22.5 million which the Corps of Engineers needs for scheduled work in 2008.

We implore Congress to appropriate the needed \$22.5 million for the UYP so that structures might be constructed, a bridge relocated, and another section of the river system restored to its proper capacity. Thousands of our citizens remain unprotected from flood waters; we turn to Congress to give them relief.

Working hand-in-hand with the UYP in a common sense approach to flood control is the Mississippi Delta Headwater Project, through which waters and the stream-filling silts which they carry, are controlled. The UYP would clear out our waterways, the Delta Headwater Project would reduce the rate at which they would resilt. We urge Congress to appropriate the needed \$25 million for this effort to continue in 2008.

Without proper mitigation practices, of course, all flood control projects would be threatened. Our levee district is very concerned that mitigation lands, once acquired, are not being rapidly enough turned over to Federal and State wildlife management agencies to ensure the desired public benefits. A lack of management monies is frequently blamed for that, so we are asking that adequate funds be appropriated and designated for proper management authority and practice on mitigation lands.

Mississippi's four flood control reservoirs play a critical role in managing water from the hills and avoiding untimely releases into the low-lying Delta where they can wreak havoc. But as critical as these facilities are, they are aging and maintenance monies are deeply needed to ensure their integrity. Therefore we ask that respective maintenance funds be allocated for these reservoirs as follows:

- Sardis Lake—\$14.784 million.
- Arkabutla Lake—\$9.975 million.
- Enid Lake—\$10.927 million.
- Grenada Lake—\$11.299 million.

Due to the nature of its alluvial soils, bank stabilization is a critical need in the Delta and within our district. In the past, the Corps had the authority to prioritize this pervasive problem and deal directly with those situations in which significant public importance was involved—hospitals, major thoroughfares, schools and the like. One example in our district is where bank failure threatens major transportation arteries near the Rising Sun community south of Greenwood. But the empowering language for such no longer exists. We urge that either this language be restored for such projects nationwide, or, in the alternative, we urge Congress to specifically allocate the needed \$820,000 needed to address this problem which potentially affects thousands.

The Big Sunflower River Maintenance Project is jointly sponsored by Mississippi's two levee boards. The Draft Supplemental Environmental Impact Statement for this project, which would restore flood control capacities to 130 miles of channels by removing sediment built up over the past 40 years, will be released later this year and we request that \$2.5 million be appropriated to allow right-of-way acquisition to continue and to award the dredging contract.

The Corps of Engineers has the capacity to Initiate Tributaries Reformulation on inland feeder streams, many of which lie in our district, and we urge that Congress appropriate the \$2 million Corps 2008 capacity for this needed work.

In another issue specific to our district, funds are needed to initiate a study of Gunn Bayou, south of Belzoni. Poor drainage causes localized flooding in this area.

There are, however, two policy issues which combine to potentially threaten not only these, but every flood control project in the country—the recently abandoned principles of Continuing Contracts and Reprogramming. Now absent these two long-standing practices, the Corps has lost the flexibility to continue works in progress and reallocate funds by priority. We urge Congress to restore the practices of Continuing Contracts and Reprogramming throughout the MR&T.

Finally, through the implementation of revised Levee Certification guides and some unfortunate and ill-advised flood insurance zone language, the Federal Emergency Management Agency has created a situation in which both future investment in the Delta and homeowner finances are threatened. The new FEMA levee protection guide and subsequent flood zone rating appears to ignore the protection afforded by the levee system for 75 years and stands to send homeowner insurance costs skyrocketing, according to one estimate, anywhere from 500 to 1,600 percent.

We urge Congress to seriously review and address this issue.

PREPARED STATEMENT OF THE ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

Mr. Chairman and members of the committee, I am James M. Hewgley, Jr., Oklahoma Chairman of the Arkansas River Basin Interstate Committee, from Tulsa, Oklahoma.

It is my privilege to present this statement on behalf of the Oklahoma members of our committee in support of adequate funding for water resource development projects in our area of the Arkansas River Basin. Other members of the committee are: Mr. Ted Coombes, Tulsa; Mr. A. Earnest Gilder, Muskogee; Mr. Terry McDonald, Tulsa; and Mr. Lew Meibergen, Enid, who also serves as Chairman of the combined Arkansas River Basin Interstate Committee representing the five States within the Arkansas River Basin.

Mr. Chairman, Public Law 108–137 authorized a 12-foot channel on the McClellan-Kerr Arkansas River Navigation System. The Corps is now obligated to operate and maintain the system as a 12-foot channel. Over 90 percent of the system currently is adequate for a 12-foot channel. Deepening the remainder of the channel to 12 feet will allow carriers to place 43 percent more cargo on barges, which will reduce the amount of fuel consumed and emissions released. Funds in the amount of \$7.0 million were allocated in fiscal year 2005. Those funds were used to complete the Feasibility Study and Environmental Impact Statement with the balance used on engineering, design, and construction activities. Environmental benefits include the creation of new aquatic habitat through new dike construction and the construction of Least Tern islands through beneficial use of dredged material. The Corps of Engineers has developed a comprehensive plan to execute the project in the States of Arkansas and Oklahoma to the best advantage of both States and the best use of the funds.

Therefore, we request \$40 million to maintain the authorized depth and execute the plan to its full capability in fiscal year 2008. This investment will increase the cost competitiveness of this low cost, environment-friendly transportation mode and help us combat the loss of industry and jobs to overseas.

Tow Haulage Equipment—Oklahoma.—We request funding of \$6.5 million to initiate the installation of tow haulage equipment on the locks located along the Arkansas River portion of the McClellan-Kerr Arkansas River Navigation System. Total cost for these three locks is \$6.5 million. This project will involve installation of tow haulage equipment on W.D. Mayo Lock and Dam No. 14, Robert S. Kerr Lock and Dam No. 15, and Webbers Falls Lock and Dam No. 16, on the Oklahoma portion of the waterway. The tow haulage equipment is needed to make transportation of barges more efficient and economical by allowing less time for tows to pass through the various locks.

Arkansas-White Rivers Cutoff Study is to determine a permanent solution to prevent the developing cutoff from joining the Arkansas and White River near the confluence of the McClellan-Kerr Arkansas River Navigation System and the Mississippi Rivers. If not corrected this occurrence could have a dramatic adverse affect on the navigation system. Unless corrected, this will effectively drain the water from the navigation system and halt the movement of commerce on the system.

We request an appropriation of \$3.5 million of which \$400,000 will complete the study and \$3.1 million will be used for design and construction of a permanent fix at Jim Smith Lake.

Maintenance of the Navigation System.—In preparation for the deepening of the navigation system from 9 to 12 feet, there is a backlog of maintenance items that has been deferred due to insufficient budgets to allow proper maintenance. These maintenance items are required even to support navigation at the 9 foot depth in

order to not jeopardize the reliability of the system. Therefore, we request additional funding in the amount of \$1,549,000—plus the amount from Little Rock, over and above normal funding, for deferred channel maintenance. These funds would be used for such things as repair of bank stabilization work, needed advance maintenance dredging, and other repairs needed on the system's components that have deteriorated over the past three decades.

In addition to the system-wide needed maintenance items mentioned above, the budget for the Corps of Engineers for the past several years has been insufficient to allow proper maintenance of the McClellan-Kerr Arkansas River Navigation System—Oklahoma portion. As a result, the backlog of maintenance items has continued to increase. If these important maintenance issues are not addressed soon, the reliability of the system will be jeopardized. The portion of the system in Oklahoma alone is responsible for returning \$2.6 billion in annual benefits to the regional economy. The fiscal year 2006 O&M President's budget for Tulsa District was \$8.2 million less (over 11 percent) than the fiscal year 2005 appropriation, which will result in no funding being available for critical infrastructure maintenance in fiscal year 2006. The fiscal year 2007 O&M President's budget is currently proposed at \$72.4 million which is presently \$10 million more than the fiscal year 2006 budget. This \$10 million increase is offset by higher energy, labor, and construction costs. We therefore request that \$2.1 million be added to the budget to accomplish critical infrastructure maintenance items on the Oklahoma portion of the system as follows:

McClellan-Kerr.—\$600,000 to repair plate seals for the weirs;

Robert S. Kerr.—\$1,500,000 to repair erosion and construct emergency mooring wood dolphins.

Mr. Chairman, we respectfully request that the committee consider these requests as the most important to our transportation system at this time. We must maintain this country's transportation infrastructure or little else will matter in the future.

PREPARED STATEMENT OF THE UPPER MISSISSIPPI RIVER BASIN ASSOCIATION
(UMRBA)

[In millions of dollars]

	President's Request	UMRBA Recommendation
Construction General:		
Upper Miss. River Restoration Program (aka EMP)	23.46	33.52
Lock and Dam 3 (Major Rehabilitation) ¹		5.0
Lock and Dam 11 (Major Rehabilitation) ¹	6.3	6.3
Lock and Dam 19 (Major Rehabilitation) ¹	0.70	1.47
Lock and Dam 24 (Major Rehabilitation) ¹	0.34	0.49
Locks 27 (Major Rehabilitation) ¹	7.54	11.26
Upper Mississippi and Illinois Rivers Navigation and Ecosystem Sustainability Program (if construction is authorized)		16.2
Operation and Maintenance: O&M of the Upper Mississippi and Illinois Rivers Naviga- tion System ²	187.23	279.41
General Investigations: Upper Mississippi and Illinois Rivers Navigation and Ecosystem Sustainability Program (PED)		24.0

¹Funding for major rehabilitation projects would be shifted to the O&M account under the President's budget proposal. Major rehabilitation would still be cost-shared 50 percent from the Inland Waterways Trust Fund.

²The administration has modified the structure of the O&M account in its fiscal year 2008 budget. Rather than budgeting for individual projects, the O&M request is organized by region and by business line within region. The UMRBA is addressing its testimony to that portion of the Region 7 navigation business line that is attributable to O&M of the Upper Mississippi and Illinois Rivers navigation system. Thus, we have disaggregated numbers from the President's budget.

The Upper Mississippi River Basin Association (UMRBA) is the organization created in 1981 by the Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin to serve as a forum for coordinating river-related State programs and policies and for collaborating with Federal agencies on regional issues. As such, the UMRBA works closely with the Corps of Engineers on a variety of programs. Of particular interest to the basin States are the following:

UPPER MISSISSIPPI AND ILLINOIS RIVERS NAVIGATION STUDY

It has been more than 2 years since the Corps completed its 14-year Upper Mississippi and Illinois Rivers Navigation Study, issuing the final feasibility report in September 2004 and the Chief's Report in December 2004. While Congress has not yet authorized the recommended integrated plan for navigation improvements and ecosystem restoration, it has provided preconstruction engineering and design (PED)

funding to insure that necessary planning and design work can proceed, in anticipation of construction authorization. Congress appropriated \$13.5 million for PED in fiscal year 2005 and \$10.0 million in fiscal year 2006. A similar bridging strategy will be necessary in fiscal year 2008 if authorization remains pending.

PED.—The UMRBA supports \$24.0 million for PED in fiscal year 2008, despite the fact that the administration has once again not included PED in its budget request. Many of the large scale projects, such as new locks or fish passage at dams, require 3 years or more of PED before they can move to construction. It is thus critical that PED work continue without pause and be sustained over time. In the past, PED funding has been directed to both navigation improvements and ecosystem restoration projects. This has not necessarily meant providing identical amounts to these two major components on an annual basis, but has involved attempting to ensure meaningful and substantial progress in planning for both navigation improvements and ecosystem restoration. If the Corps were to receive PED funding of \$24.0 million in fiscal year 2008, it is anticipated that approximately \$1.5 million would be directed to program management and completion of the economic reevaluation interim report, with the \$22.5 million balance divided roughly evenly between navigation measures (including small scale measures and lock design at three sites) and ecosystem restoration plan formulation and evaluation. (NOTE.—The PED allocation for fiscal year 2007 remains to be determined. It is imperative that the Office of Management and Budget permit the Corps to allocate reasonable and necessary funds to PED in fiscal year 2007. Approximately \$18.0 million is needed for fully functional PED this year.)

Construction.—If the integrated navigation and ecosystem restoration program is authorized for construction this year, construction could be initiated on several projects in fiscal year 2008. In that event, UMRBA would recommend construction funding of \$16.2 million. This funding would support mooring cells at 3 sites, switchboats, channel work upstream of Lock 22, fish passage at L&D 22, and several other ecosystem restoration projects, with approximately \$7.6 million going to navigation improvements and \$8.6 million going to ecosystem projects. This initial fiscal year 2008 construction increment would also enable the Corps to launch major construction activities, including work on large scale measures, in fiscal year 2009, with full program implementation possibly beginning in fiscal year 2010.

UPPER MISSISSIPPI RIVER RESTORATION PROGRAM (AKA EMP)

In fiscal year 2007, the Upper Mississippi River Restoration Program, commonly known as the Environmental Management Program (EMP), marked 20 years as the premier program for restoring the river's habitat and monitoring the river's ecological health. Members of Congress, agency leaders, stakeholder groups, and members of the public all joined the Corps of Engineers in celebrating the EMP's many successes, including both significant contributions to river science and dramatic on-the-ground habitat improvements. Given this tremendous record of success, the UMRBA is pleased that the administration has again identified the EMP as one of six construction projects considered to be national priorities. Even with this emphasis, however, the administration has requested only \$23.46 million for the EMP in fiscal year 2008. This would continue the trend of the past 10 years, in which the annual EMP appropriation has fallen short of the authorized funding level. The UMRBA strongly urges Congress to appropriate full funding of \$33.52 million for the EMP in fiscal year 2008.

The administration's proposed \$23.46 million budget would support planning, engineering, design, and construction work on 23 habitat restoration projects. In addition, the fiscal year 2008 request would support modest expansion of targeted research and data acquisition and management efforts under the Long Term Resource Monitoring Program (LTRMP), which has suffered substantially from the funding shortfalls in recent years. However, to realize its full promise, the EMP requires funding at the full authorized amount of \$33.52 million. This would support construction on three additional projects. It would also permit accelerated work on several other projects, thereby increasing overall program efficiency. Finally, funding at the full capability level would support LTRMP research on critical science questions and the acquisition of data needed for balanced river management, such as LIDAR terrain data. Therefore, the UMRBA urges Congress to fund the EMP at its full authorized amount of \$33.52 million.

UMRBA remains concerned about a 2006 directive from OMB that \$3 million of fiscal year 2007 EMP funding be devoted to development of a "10-year aquatic ecosystem restoration plan." Such a plan is unnecessary and would duplicate plans that the Corps completed as part of the 2004 Navigation Study. It is unclear whether OMB will renew this directive now that fiscal year 2007 funding allocations are

being made, or attempt to apply it in fiscal year 2008. However, given the backlog of EMP habitat restoration projects awaiting construction, and the vast number of unmet needs under the LTRMP, it would be misguided to divert construction funds from this important work to develop a plan that is largely duplicative. Congress should direct the Corps to use EMP funds exclusively for construction of habitat restoration projects and long term monitoring, as authorized in the 1999 Water Resources Development Act.

UMRBA recognizes that one of the biggest challenges facing future restoration efforts on the Upper Mississippi River (UMR) will be integrating the work that is currently done under EMP with the new ecosystem/navigation authority being proposed. Congress is currently considering authorization of a new dual-purpose authority for the Corps, as recommended in the navigation feasibility study. For now, however, the EMP remains the single most effective and long-standing UMR ecosystem restoration program. Moreover, the EMP's monitoring element is entirely unique and would not be replicated under some versions of the proposed new authority. Therefore, fully funding the EMP is as important today as it has ever been. The EMP must not languish as questions related to future program streamlining and coordination are being addressed.

MAJOR REHABILITATION OF LOCKS AND DAMS (L&D)

Most of the locks and dams on the Upper Mississippi River System are over 60 years old and many are in serious need of repair and rehabilitation. For more than 20 years, the Corps has been undertaking major rehabilitation of individual facilities throughout the navigation system in an effort to extend their useful life. This work is critical to ensuring navigation reliability and safety.

The UMRBA supports the President's fiscal year 2008 budget request for major rehabilitation work at L&D 11 (\$6.3 million) and supports increasing the President's request for rehabilitation work at L&D 19 (\$1.47 million), L&D 24 (\$0.49 million), and Locks 27 (\$11.26 million). Funding at these levels will permit timely and efficient rehabilitation of these critical navigation structures. Major rehabilitation of L&D 11 and L&D 19 could be completed in fiscal year 2008. The planned work spans a broad range, including gate repair/replacement, concrete work, and mechanical and electrical upgrades.

The UMRBA also supports funding for a major rehabilitation project that is not included in the President's request: L&D 3 at \$5.0 million. Navigation safety and embankment failure have been a concern for over 20 years at L&D 3, and river pilots agree that this is the most dangerous stretch of the Upper Mississippi to navigate. Should there be an accident, the adjacent embankments, which have been severely weakened by age and past accidents, could be breached. In this event, commercial navigation would be curtailed and two large power plants would be forced to shut down.

OPERATION AND MAINTENANCE (O&M) OF THE UPPER MISSISSIPPI RIVER NAVIGATION SYSTEM

The Corps is responsible for operating and maintaining the Upper Mississippi River System for navigation. This includes channel maintenance dredging, placement and repair of channel training structures, stream gaging and water level regulation, and routine care and operation of 29 locks and dams on the Mississippi River and 7 locks and dams on the Illinois River. The fiscal year 2008 budget request totals approximately \$187.23 million for O&M of this river system. These funds are critical to the Corps' ability to maintain a safe and reliable commercial navigation system, while protecting and enhancing the river's environmental values.

Unfortunately, the President's fiscal year 2008 budget represents a further widening of the gap between the amount requested and the amount required for adequate operation and maintenance of the navigation system. In fiscal year 2006, the gap between the President's request and the Corps' capability was \$52.14 million. In fiscal year 2008, this shortfall has increased to \$92.18 million. For segments of the Upper Mississippi System, this will mean multiple years during which resources have not supported even baseline operation and maintenance, resulting in an increasing backlog, elimination of important stream gages, and a growing risk of failures and service interruptions. Responses to these continued fiscal pressures may include reductions in lock operating hours and cancellations of ongoing contracts. Funding beyond the President's request is needed to restore basic service levels, coordinate major maintenance with major rehabilitation at L&D 11 and 19, and undertake a variety of other critical O&M work.

The UMRBA supports increased funding for O&M of the Upper Mississippi and Illinois River System to meet routine operation and maintenance needs, and to ad-

dress the growing unfunded maintenance backlog. The Upper Mississippi River System is simply too valuable to invite disaster through chronic underfunding of basic O&M. For fiscal year 2008, O&M funding totaling \$279.41 million is needed on the Upper Mississippi River System to address ongoing needs and critical backlog items.

INLAND WATERWAYS USER FEES

In releasing the President's fiscal year 2008 budget request for the Corps of Engineers, Assistant Secretary of the Army John Woodley announced that the administration plans to propose a new inland waterways user fee. There are many important unknowns, including most notably the form and magnitude of this new fee and its relationship to the existing inland waterways fuel tax, authorized as part of the 1986 Water Resources Development Act. Given the lack of specifics, the UMRBA has not taken a position, but would urge Congress to proceed with great care in response to any such proposal. The impacts on operators and shippers are potentially profound and issues such as economic disruption, equity among waterways beneficiaries, and implications for the Nation's intermodal system must be fully understood and evaluated. The UMRBA States would be very concerned with any proposal that would undermine the vitality and efficiency of the Upper Mississippi River System, which is so central to the region's economy.

PREPARED STATEMENT OF THE MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION

My name is M.V. Williams and I reside in Germantown, Tennessee. I am the president of the West Tennessee Tributaries Association. It is also my pleasure and a privilege afforded me by the other nine members of the executive committee, to serve as chairman of that committee that has the responsibility for the management and direction of the Mississippi Valley Flood Control Association in accordance with policies duly adopted by the association. This statement on behalf of the association presents their views on the fiscal year 2008 budget for the Mississippi River and Tributaries Project and their request for \$500 million.

Since there are new members on the subcommittee and to refresh the memory of those that have served previously, I will briefly discuss the Mississippi Valley Flood Control Association which is an agency composed almost entirely of public bodies having local responsibility for flood control, drainage, bank stabilization and navigation improvements in parts of Illinois, Kentucky, Tennessee, Missouri, Arkansas, Mississippi and Louisiana. Our members are public officials who for the most part are elected by the people. The Association represents practically all of the levee and drainage districts, municipalities, port and harbor commissions and other State agencies in the Mississippi River Valley. These organizations and agencies are political subdivisions of the various States in which they are organized and function. We provide an agency through which all the people of the Mississippi River Valley may speak and act jointly on all flood control, navigation, bank stabilization and major drainage problems. We have appeared before the subcommittee and served the people in the Mississippi River Valley for over 70 years.

Our Association is comprised of a very large group of individuals who are businessmen, property owners, conservationists, farmers, attorneys, doctors, wildlife enthusiasts, engineers, accountants, environmentalists, civil servants and elected officials from all political parties. Since 1935, our president and two vice presidents have been members of the United States Congress, a fact of which we are extremely proud. Our president this year is that great public servant and one of the real heroes of the Vietnam conflict, the Congressman from the Third District of Iowa, the Honorable Leonard Boswell. Our two vice presidents are Congressmen Roger Wicker from Mississippi and Edward Whitfield from Kentucky.

The value of flood control and economic reality of the need for waterborne commerce is well known by the Congress. Therefore I will not go into details but for the sake of confirming what is already known, let me tell you that since 1928 the Nation has invested \$12 billion for the Mississippi River and Tributaries Project. For that investment the Nation has realized a return of \$425.5 billion that includes savings on transportation costs and flood damages prevented. That's a return on investment of \$35.50 for every \$1 invested. What a wonderful investment of taxpayers' dollars.

Today we find ourselves again faced with an inadequate budget from the executive department but fortunately for us and the other citizens of this great Nation, the Congress in its wisdom has always recognized the value of such an investment and has consequently, with only rare exceptions, appropriated more dollars for the Mississippi River and Tributaries Project than has been requested by the executive department. We hope that happens again this year.

We are in Washington for our 72nd Annual Spring Meeting and as improbable as it may seem we find the U.S. Army Corps of Engineers under fire from within the executive branch and of course the so-called environmentalists. This is the same Corps of Engineers that has in peace time for over 225 years built the infrastructure that is the envy of the rest of the civilized world and that has also defended our Nation in times of conflict. My war of participation was World War II which as all of you know involved numerous amphibious landings. Leading each of those landings were the U.S. Army Amphibious Engineers who were competently led by General Daniel Noce who served as District Engineer in the Memphis District during the record flood of 1937. General Noce was well aware of the training and experience that both young army officers and civilians had gained while part of the Mississippi Valley Division and he recruited the cadre of the amphibious engineers from that group. In fact the Corps of Engineers has defended our Nation from the War for Independence to the war on terror, from Bunker Hill to Baghdad. I know of no justification for the attitude that some have taken concerning the Corps of Engineers. This attitude is having and will continue to have a detrimental impact on economic development in this country.

I am well aware that the purpose of this statement is to discuss fiscal year 2008 appropriations for the Mississippi River and Tributaries Project but I believe it is appropriate to mention at this time new policies being implemented by the Federal Emergency Management Agency in their map modernization program. This program is a 5-year program that was initiated in 2004 and consists of updating the flood insurance rate maps. We've been told that 20 percent of all counties nationwide are scheduled for update.

Of great concern to us and should be of concern to everyone is a new zone designation known as Zone X (shaded) which will be all the areas outside the 100-year flood zone protected by levees. In the case of the lower Mississippi River Valley, from approximately Cape Girardeau, Missouri to the Gulf of Mexico, this is an area of some 35,000 square miles or 22,400,000 acres. A warning will be placed on the new flood insurance rate maps that will, among other things, state that within this area communities should issue evacuation plans and encourage property owners to purchase flood insurance.

This large area that is protected not only by the Mississippi River and Tributaries Levees but also by the entire Comprehensive Flood Control System consisting of not only levees but bank revetments, river cut-offs, floodways, floodwalls, diversions, flood storage reservoirs, control structures and many other improvements that have made certain that no Mississippi River Main Line Levee has failed since 1928, the year that the Congress directed the Corps of Engineers to build the system. There have been a number of floods of record proportions since then but not one failure. The design flood for the Mississippi River and Tributaries Project is to protect against a flood predicted by the weather bureau as the "maximum possible" and provides for the disposal of all water predicted as possible.

This unwarranted new Zone X on Flood Insurance Rate Maps will have a dramatic and costly burden on all the residents, businesses and industries along the lower Mississippi River and its tributaries and this economic disaster will be felt over this entire Nation. The language proposed will frighten lenders and companies looking for industrial sites, impact crop loans as well as causing millions of dollars to be spent for unnecessary flood insurance premiums. This is such a serious matter that we would suggest strongly that the appropriate congressional committees hold hearings on this matter to determine what if any engineering basis the Federal Emergency Management Agency used to develop this new policy.

Again, this statement is in support of the Mississippi River and Tributaries Appropriations and our request is being made only after careful and thoughtful considerations of the amount necessary to prevent the cancellation of on going contracts and to do the minimum amount of required maintenance work. The Mississippi River and Tributaries Project is unique in the fact that the appropriations allocated are used not only for construction but also for maintenance and not only for flood control but also for navigation and includes all environmental considerations including mitigation and restoration as well as irrigation and water supply.

It is our collective opinion that to meet the requirements outlined above, the appropriation for the Mississippi River and Tributaries Project for fiscal year 2008 should be \$500 million. In order to preserve the integrity of our flood control and navigation systems that represents a large investment of national assets and to preserve and enhance the natural environment of the Mississippi River Valley and to continue the authorized work that is underway, the appropriation request is justified and should be considered as a wise investment in the future well-being of this great Nation.

As we noted in our statement last year, of utmost importance to the overall success of the project is the completion of the work in both Louisiana and Mississippi to bring the deficient levees up to the required grade and section. Additional funds are needed here and because of the scope of the work the restrictions on reprogramming authorities and the elimination of the use of continuing contracts both need to be waived in order that this work to protect thousands of acres of valuable land and the lives of thousands of citizens can be completed as rapidly as possible. Because of these restrictions, contracts had to be shut down at considerable cost and the loss of valuable construction time. We ask the subcommittee for help in this important matter.

With the help of the Congress over the years, we have made progress in the Mississippi River Valley and for that we are extremely grateful but there is much to be done before the job is completed and the people in the valley and the entire Nation may reap the benefits of what has been done.

We have attached a sheet to this statement that reflects the Mississippi Valley Flood Control Association's request for Appropriations for the Mississippi River and Tributaries Project for fiscal year 2008.

MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION—FISCAL YEAR 2008 CIVIL WORKS REQUESTED BUDGET—MISSISSIPPI RIVER AND TRIBUTARIES APPROPRIATIONS

PROJECT AND STATE	MVFC REQUEST
SURVEYS, CONTINUATION OF PLANNING AND ENGINEERING & ADVANCE ENGINEERING & DESIGN:	
Memphis Harbor, TN .....	.....
Germantown, TN .....	.....
Lower Steele Bayou .....	.....
Homochitto River .....	.....
Fletcher Creek, TN .....	.....
Memphis Metro Storm Water Management, TN .....	.....
Bayou Meto, AR	\$2,550,000
Southeast Arkansas	800,000
Coldwater Basin Below Arkabutla Lake, MS	425,000
Quiver River, MS .....	.....
Spring Bayou, LA	500,000
Point Coupee to St. Mary Parish, LA .....	.....
Atchafalaya Basin Floodway Land Study, LA	200,000
Alexandria, LA to the Gulf of Mexico	1,950,000
Morganza, LA to the Gulf of Mexico	6,350,000
Donaldsonville, LA to the Gulf of Mexico	3,500,000
Tensas River, LA .....	.....
Donaldsonville Port Development, LA .....	.....
Collection & Study of Basic Data	495,000
TOTAL GENERAL INVESTIGATIONS	16,770,000
CONSTRUCTION:	
St. John's Bayou-New Madrid Floodway, MO	13,300,000
Eight Mile Creek, AR .....	.....
Helena & Vicinity, AR .....	.....
Grand Prairie Region, AR	37,800,000
Bayou Meto, AR	22,450,000
West Tennessee Tributaries .....	.....
Nonconnah Creek, TN	500,000
Wolf River, Memphis, TN .....	.....
August to Clarendon Levee, Lower White River, AR .....	.....
St. Francis Basin, MO & AR	7,000,000
Yazoo Basin, MS	67,125,000
Atchafalaya Basin, LA	34,000,000
Atchafalaya Basin Floodway, LA	10,894,000
MS Delta Region, LA	722,000
Channel Improvements, IL, KY, MO, AR, TN, MS & LA	64,547,000
Mississippi River Levees, IL, KY, MO, AR, TN, MS & LA	98,352,000
SUBTOTAL—CONSTRUCTION	356,690,000
SUBTOTAL—MAINTENANCE	283,669,000
SUBTOTAL—MISSISSIPPI RIVER & TRIBUTARIES	657,129,000

MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION—FISCAL YEAR 2008 CIVIL WORKS REQUESTED BUDGET—MISSISSIPPI RIVER AND TRIBUTARIES APPROPRIATIONS—Continued

PROJECT AND STATE	MVFC REQUEST
LESS REDUCTION FOR SAVINGS & SLIPPAGES	157,129,000
GRAND TOTAL—MISSISSIPPI RIVER & TRIBUTARIES	500,000,000

PREPARED STATEMENT OF THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT (LADOTD)

On behalf of LADOTD and the Association of Levee Boards of Louisiana (ALBL), we present recommendations for fiscal year 2008 appropriations for U.S. Army Corps of Engineers Civil Works Projects in Louisiana.

Hurricanes Katrina and Rita in 2005 totally devastated Louisiana and had a ripple effect throughout the Nation. Over 1,500 Louisiana residents lost their lives, over 200,000 homes were severely damaged or destroyed, and over 400,000 Louisiana citizens are still displaced. The true cost of these storms in lives, property, and wetlands loss—will never be known. Coastal Louisiana may never fully recover. All of the coastal infrastructure—ports, oil and gas pipelines, refineries (two large refineries in St. Bernard parish were out of service for months), chemical plants, production platforms, offshore supply depots, navigation channels, locks, etc.—were severely damaged whether or not they were protected by levees. The impact on Louisiana left a ripple effect on the economy of the whole country which cannot be ignored. Energy prices increased significantly because of the disruptions in production, delivery and refining. Damages to Louisiana’s deepwater ports, which export nearly 60 percent of the Nation’s grain products, disrupted agricultural markets worldwide. This was truly a national tragedy requiring a national response. The levee system intended to protect the New Orleans area completely failed. Worse yet, the project remains incomplete 40 years after authorization—due mostly to funding constraints. Ironically, one protection system, Larose to Golden Meadow, survived these two storms, but has been completely overlooked for accelerated funding. Present funding is not enough to bring it to 100 percent completion, and when complete, this would still not provide protection against the 1 percent chance of flooding.

It is equally tragic that another protection system still remains incomplete and vulnerable to a project flood. The Mississippi River and Tributaries Project (MR&T) has been underway since 1928 and isn’t scheduled for completion until beyond 2031. Flooding from the Mississippi River would produce damages of a magnitude much greater than what was experienced during Hurricanes Katrina and Rita. A far greater portion of the State would be impacted. For these reasons, we consider the administration’s proposed budget for the MR&T Project of \$260 million for fiscal year 2008 to be entirely unacceptable. This amount is not enough to adequately fund the Corps projects in the New Orleans and Vicksburg Districts, let alone the entire Mississippi River Valley. We strongly support the Mississippi Valley Flood Control Association’s request of \$500 million for the MR&T Project.

Supplemental funding has previously been received to complete numerous ongoing hurricane protection projects and the SELA project. This is not enough, however, to provide protection against the 1 percent chance, or greater, of flooding in any given year. We respectfully encourage this committee to look at newly revised cost estimates and necessary funding required to raise the system to a protection level above the original project storm. Although these projects are important, there are still numerous other projects for navigation, flood protection, and coastal restoration that either are unfunded or lack adequate funds to continue in a timely manner. In making the following funding recommendations for Louisiana projects regarding specific construction, studies, and operation and maintenance items, we would hope that Congress and the administration will honor their prior commitments to infrastructure development and continue to fund our requests. We believe these types of water resources projects are the most cost effective projects in the Federal budget, having to meet stringent economic criteria not required by other programs.

FLOOD CONTROL, NAVIGATION, HURRICANE PROTECTION & WATER RESOURCES PROJECTS SUMMARY OF RECOMMENDED APPROPRIATIONS FISCAL YEAR 2008 FOR LOUISIANA

LADOTD & ALBL requests funding for the following projects that differs from what is in the fiscal year 2008 administration budget or is a project of particular

importance for the State. Those items that have been appropriately funded have not been included.

LOUISIANA PROJECTS	ADMINISTRATION BUDGET	LOUISIANA RE-QUEST
GENERAL INVESTIGATIONS:		
STUDIES:		
Amite River—Ecosystem Restoration, LA		\$1,000,000
Amite River & Tributaries, LA Bayou Manchac		1,000,000
Atchafalaya River, Bayous Chene, Boeuf & Black		500,000
Calcasieu Lock, LA		600,000
Calcasieu River Basin, LA	\$395,000	395,000
Calcasieu River & Pass Navigation, LA		360,000
Plaquemines Parish, LA		500,000
Southwest Coastal LA Hurricane Protection, LA		2,000,000
St. Charles Parish Urban Flood Control, LA		400,000
West Baton Rouge Parish, LA		543,000
West Shore—Lake Pontchartrain, LA		778,000
Bossier Parish Levee & FC		300,000
Cross Lake Water Supply		384,000
PED:		
Bayou Sorrel Lock, LA	1,371,000	2,500,000
Port of Iberia, LA		1,500,000
Southwest, AR (AR, LA)		400,000
NEW STUDIES:		
Baptiste Collette, LA		300,000
Donaldsonville Port Development		500,000
Red River Waterway, LA—12 Foot Channel		100,000
CAP:		
Port Fourchon Enlargement, LA		1,300,000
CONSTRUCTION GENERAL:		
Comite River, LA		24,000,000
East Baton Rouge Parish, LA		2,000,000
Inner Harbor Navigation Canal Lock, LA		6,000,000
Larose to Golden Meadow		14,700,000
Southeast, LA		169,000,000
Red River Below Den Dam (AR, LA)		10,000,000
Red River Emergency (AR, LA)		6,000,000
J Bennett Johnston WW, Miss. R. to Shreveport	1,500,000	15,000,000
Ouachita River Levees		1,600,000
Ouachita River Bank Stabilization		5,000,000
OPERATIONS & MAINTENANCE GENERAL:		
Atchafalaya River, Bayous Chene, Boeuf & Black	6,717,000	42,000,000
Arataria Bay Waterway		3,800,000
Bayou Lacombe		900,000
Bayou Lafourche	1,273,000	3,500,000
Bayou Segnette		1,500,000
Bayou Teche	209,000	209,000
Calcasieu River & Pass	16,108,000	32,000,000
Calcasieu River Dredge Disposal Plan	2,000,000	2,000,000
Freshwater Bayou	5,570,000	11,000,000
Gulf Intracoastal Waterway	21,851,000	36,000,000
Houma Navigation Canal	135,000	4,200,000
Mermentau River	1,685,000	6,300,000
Mississippi River, Baton Rouge to the Gulf	59,424,000	120,000,000
Mississippi River Gulf Outlet at Veince	290,000	6,000,000
Waterway Empire to the Gulf		5,000,000
WW. IWW to Bayou Dulac		250,000
Ouachita & Black Rivers (AR, LA)	9,865,000	20,143,000
Bayou Bodcau	766,000	2,226,000
Caddo Lake	196,000	261,000
Wallace Lake	211,000	278,000
Bayou Pierre	35,000	35,000
J Bennett Johnston Waterway	10,431,000	16,471,000
Lake Providence Harbor	25,000	546,000
Madison Parish Port	4,000	81,000

MISSISSIPPI RIVER AND TRIBUTARIES PROJECT SUMMARY OF RECOMMENDED
APPROPRIATIONS FISCAL YEAR 2008 FOR LOUISIANA

LADOTD & ALBL requests funding for the following projects that differs from what is in the fiscal year 2008 administration budget or is a project of particular importance for the State. Those items that have been appropriately funded have not been included.

LOUISIANA PROJECTS	ADMINISTRATION BUDGET	LOUISIANA RE- QUEST
FC, MR&T GENERAL INVESTIGATIONS:		
Alexandria to the Gulf	\$200,000	\$1,950,000
Donaldsonville to the Gulf		3,500,000
Morganza to the Gulf, PED		6,500,000
Spring Bayou Area, LA		500,000
NEW STUDIES:		
Atchafalaya Basin Floodway System Land Study, LA	200,000	200,000
FC, MR&T CONSTRUCTION:		
Atchafalaya Basin	23,800,000	34,000,000
Atchafalaya Basin Floodway System	1,800,000	10,000,000
Channel Improvement (N.O. Dist.)	15,747,000	15,747,000
Mississippi Delta Region		722,000
Mississippi River Levees, LA (N.O. Dist.)	5,267,000	10,200,000
Mississippi River Levees (AR, LA, MS) (V. Dist.)	18,500,000	47,300,000
Morganza to the Gulf (pending authorization in WRDA)		14,000,000
Channel Improvement (AR, LA, MS) (V. Dist.)	23,585,000	29,585,000
FC, MR&T MAINTENANCE:		
Atchafalaya Basin	11,019,000	28,000,000
Atchafalaya Basin Floodway System	2,291,000	2,700,000
Baton Rouge Harbor (Devil's Swamp)	17,000	70,000
Bayou Cocardie and Tributaries	41,000	41,000
Bonnet Carre Spillway	2,367,000	5,000,000
Channel Improvement (N.O. Dist.)	12,025,000	16,500,000
Dredging (N.O. Dist.)	700,000	700,000
MS Delta Region	125,000	225,000
Old River	9,045,000	20,000,000
Mississippi River Levees (LA) (N. Dist.)	3,702,000	3,774,000
Mississippi River Levees (AR, LA, MS) (V. Dist.)	2,100,000	2,700,000
Revetments & Dikes (AR, LA, MS) (V. Dist.)	15,400,000	15,400,000
Boeuf & Tensas Rivers	2,667,000	6,047,000
Red River Backwater	2,500,000	6,550,000
Lower Red River	45,000	45,000

Please note that the needed additional funds to give the New Orleans Area that protection that is needed is not included in the above request. We believe it is proper that the funds for repairing and improving the existing hurricane protection systems continue to be provided through emergency supplemental appropriations so as not to detract from projects that must go through the normal appropriations process. We solicit your continued support in providing the supplemental funding necessary to complete the work.

PREPARED STATEMENT OF THE LITTLE RIVER DRAINAGE DISTRICT

My name is Dr. Sam M. Hunter, DVM of Sikeston, Missouri. I am a veterinarian, landowner, farmer and resident of Southeast Missouri.

I am the President of the Little River Drainage District, the largest such entity in the Nation. Our District serves as an outlet drainage and flood control District to parts of seven counties in Southeast Missouri. We provide flood control protection to a sizable area of Northeast Arkansas as well. Our District is solely tax supported by more than 3,500 private landowners in Southeast Missouri.

My remarks will be directed toward the President's budget for the Civil Works portion of the U.S. Army Corps of Engineers for fiscal year 2008. The President's budget requests of \$4.871 billion for Civil Works by the U.S. Army Corps of Engineers for the next fiscal year is totally inadequate and only represents 60 percent of the Corps capability. An amount of \$8 billion is more realistic.

Those funds when properly expended are INVESTMENTS yielding a return of substantial benefits to the American taxpayer throughout this Nation. They are

used to prevent flooding to much of our valuable farmland, to industrial sites, and to upgrade our ever aging locks and dam system on our navigable streams which will prevent unscheduled lock closures, modernize our hydro-electric plants, and restore some of our environmental assets.

Over 50 percent of our locks and dams are 50 to 60 years old. These facilities have exceeded their life expectancy by 10 to 20 years. In 10 years that percentage will have grown to almost 60 percent unless improvements are made.

We are witnessing unscheduled lock outages now and to continue as we are that number will continue to grow if we do not step forward with a specific plan to restore, rebuild and reconstruct lock and dams on our waterway systems. We already have leaking gates, crumbling lock walls and frequent unscheduled closures occurring which hurt and curtail economic growth to our Nation. Parts are actually having to be made for some repairs because manufactures no longer exist and such parts are not available.

Today our fuel needs alone are 75 percent dependent upon foreign oil sources. Waterborne transportation is far more energy efficient than truck or rail modes. Our Nation, our consumers and our producers will all benefit from more use of our river navigation upgrades. Less fuel would be needed to move mass quantities of goods, lives would be saved due to the more safer means of transportation, the many miles of highways throughout our Nation would not be adversely impacted, our environment would be enhanced because of less exhaust emissions and our farmers, manufacturers and other producers could compete with the world markets.

Further, to have a modern water transportation system would provide an excellent means to transport mass military equipment and troops throughout our Nation should such a need arise. How sad it would be to have an aging lock and dam system in place and fail during such a crisis. This Nation can construct modern infrastructure for others but seems to let its own taxpayers depend upon ancient features with no immediate plans to improve them. We can and we must set in order a program to modernize this valuable part of our infrastructure. It is past time to get this done.

Our competing nations such as Brazil and China have committed much more for fiscal year 2008. China has committed more than \$12 billion to their waterway infrastructure yet we are pleading for only two-thirds of that amount. We have a backlog within this part of our infrastructure of improvements that has grown from \$200 million in 1998 to more than \$1 billion in fiscal year 2008 just for operations and maintenance. We appreciate very much Congress stepping forward as they did in 2006 and increasing the needed funds substantially. You should not be burdened with this task each year.

We believe Congress needs to intervene and reverse the trend of OMB, and of past and present administrations. We have not seriously invested in our waterway infrastructure for decades but we must. Local economies will be affected positively by these investments. Local labor will be used as well as local businesses who will provide needed materials.

We believe the improvement and modernization and the growth of our waterway infrastructure should be done, but we believe it needs to be done with a plan. We believe the Corps of Engineers has the capability and they should and must develop a plan for construction of any new projects. We also believe they need to complete projects that are already started before we begin new ones. We also believe the backlog of operations and maintenance of the existing system needs to be done before any new starts are authorized, however, there may be some emergency new starts which would be wise to commence provided the funds are available and provided a systematic modernization is ongoing. We must get away from "knee jerk" emergency type repairs and replacements.

We must prioritize projects and eliminate projects that are not returning benefits back to this Nation. We must have our Federal Government live up to the commitments they have made to the citizens of this Nation. Private interest have made many investments based upon faith in the Federal Government following through on what it promised and what they had been told would be provided to them within a reasonable period of time. If a project is to be funded entirely by the Federal Government as directed by Congress then we must fulfill that obligation. If local interest is to provide a portion of the cost then local interest must meet that mandate as well. However, we do not need to hold any projects up because local interests are not financially able to meet their cost sharing needs provided that project returns a benefit back to this Nation. Let us move forward with a plan and let us work that plan and rebuild and bring our waterway infrastructure into the 21st Century properly.

I will now turn my comments to one specific project which the U.S. Army Corps of Engineers has been authorized by Congress to administer, namely, the Mis-

Mississippi River and Tributaries Project (MR&T) and one portion of that project which benefits the citizens of Southeast Missouri and Northeast Arkansas, namely, the St. Francis Basin Project.

The Corps of Engineers has a stated capability of \$500,000,000 for fiscal year 2008 in the MR&T Project. We ask you to give consideration to provide funding levels at \$500,000,000. This will provide some limited but needed new construction and some major maintenance. The President's budget contains only \$260,000,000 which is far from adequate.

The Mississippi River and Tributaries Project was authorized following a record flood in 1927 that inundated more than 26,000 square miles of the Mississippi River Valley. Over 700,000 people were left homeless and many lives were lost. Most, if not all, East-West commerce was stopped and it adversely effected the economy and the environment of our Nation. After that devastating event Congress in its infinite wisdom passed a bill and established the Mississippi River and Tributaries Project (MR&T) and authorized the U.S. Army Corps of Engineers to develop a plan to prevent such a disaster in the future. This project currently is a separate line item in the budget. To remove it will destroy the continuity of this much needed project.

To date the MR&T Project has prevented flood damages and provided other benefits resulting in acurrent benefit/cost ratio of \$28 to \$1. Truly this is a wise investment for our Nation. Likewise countless lives have been spared from the construction of this great project. Also our Nation receives nearly \$1 billion of navigational benefits each year due to this project. It is readily seen this project had merit from the beginning and continues to reward the citizens not only of the valley itself but of the citizens of the entire Nation. It is a wise investment for this country and it is good for our economy. It will be a vital link to the defense of our Nation in the event of an attack by our enemies. This project must be targeted for swift completion and then properly maintained. What an investment for our great Nation this project has been! Find any other project of any nature which approaches this ratio.

Further, we are very concerned and strongly opposed to the administration's recommendation in its fiscal year 2008 budget to use funds from the Inland Waterways Trust Fund to pay for part of the operation and maintenance cost of the inland waterways as well as some construction. The trust fund was established in 1978 and was to be made available for construction and rehabilitation for navigation on the inland and coastal waterways not for operations and maintenance. This is not what our Nation agreed to in 1978 and is not what was renewed under WRDA in 1986. We petition this Congress to stand up and have our Nation live up to the promises made to the contributors of that trust fund and abide by past agreements.

Investing in our waterways is a great way to stimulate the economy and at the same time be building and making investments into a system for the future which will return back more dollars than expended. We petition you to give this vital industry of our Nation a strong endorsement and do all you can to ensure our waterways systems stay competitive with our foreign competitors.

At a time when we need to stimulate our economy, at a time that safety from terrorist activities needs to be enhanced and at a time that many in our Nation are concerned about cleaner air, cleaner water, etc., we have a great opportunity to meet those needs. We must make sound investments into our infrastructure which will give back more monies to the taxpayers of this country than was invested while at the same time be increasing our defense capabilities should our Nation be attacked from an outside force.

Our District, as well as other Drainage and Levee Districts in Missouri and Arkansas, is located within the St. Francis River Basin. This is a project item of the Mississippi River and Tributaries Project.

The St. Francis Basin Project was authorized by Congress in 1928 for improvements by the U.S. Army Corps of Engineers. The initial authorization was justified by a projected benefit-cost ratio of 2.4:1. Today this ratio is 3.6:1 and the project is still not completed. As you can see this also has been a wise investment of our Federal tax dollars. Few projects, such as this one, where funds are provided by the Federal Government return more than they cost. This one does and we need to complete it in a timely fashion.

Local interests have done their part in providing rights of way, roads, utilities and the like. Our government now needs to fulfill their obligatory part of the project and bring it to completion as quickly as possible.

The amount allocated for maintenance in the St. Francis Basin Project for fiscal year 2007 was \$880,000,000. This is a funding level that permits adequate funding to maintain the features within that project on which the Corps of Engineers has made improvements and which it is the responsibility of the Federal Government to maintain. As a matter of information the Memphis District U.S. Army Corps of

Engineers was able to execute 99 percent of the available funds for maintenance within that project for fiscal year 2006.

The President's budget for fiscal year 2008 contains no monies for construction whereas the Corps of Engineers has the capability of \$7 million. We request \$7 million for construction for this project.

The President's budget has \$4.725 million for maintenance for the St. Francis Project. The Corps of Engineers has a stated capability of \$23.475 million.

We believe the Corps could adequately use \$15 million each year for maintenance within this basin. We realize there are budgetary restraints this year and respectively request Congress to approve funding for maintenance in the St. Francis Basin Project for fiscal year 2008 in the amount of \$23.475 million. This should provide funds for adequate maintenance of the features within this basin which need attention annually.

Many positive changes have occurred to and within our sector of our Nation because of this project. We who live there welcome these changes. We, local interest, in Southeast Missouri and Northeast Arkansas want this project brought to completion and adequately maintained. We have waited over 70 years and we believe it is time to complete this wise investment for our Nation.

A question that could and should be asked is where will we get the money? True, our Nation is facing record deficits but surely some of the monies planned to be sent abroad to build, restore and improve other nations' infrastructure could be reduced substantially and be used for the benefit of our taxpayers and Nation. Please give this proposal some thought.

I wish to thank you very much for your time and kind attention and for taking the time to review the above. We would be very appreciative of anything this committee can do to help us improve our environment, improve our livelihood, and improve the area in which we live and work which ultimately is good for America. We are also very appreciative of all this committee has done for us in the past. We trust you will hear our pleas once more and act accordingly.

PREPARED STATEMENT OF THE CITY OF SAN MARCOS, TEXAS

SAN MARCOS RIVER ECOSYSTEM RESTORATION PROJECT

Mr. Chairman and members of the subcommittee: on behalf of the city of San Marcos, Texas, I am pleased to submit this statement in support of our request for an earmark of \$439,000 for a U.S. Army Corps of Engineers Section 206 Ecosystem Restoration Project for the San Marcos River in the fiscal year 2008 bill.

The city of San Marcos seeks this allocation for the development of the Detailed Project Report/Integrated Environmental Assessment (DPR/EA) as the next step toward completing a \$4,520,000 project with Federal and local match to restore degraded aquatic and terrestrial habitat in the upper San Marcos River.

San Marcos is located in south central Texas in Hays County, approximately 30 miles southwest of Austin, Texas. The proposed restoration area is located within the city limits of San Marcos along and within the San Marcos River and its headwaters. The study area consists of an approximate 1.0-mile stretch of the San Marcos River and associated riparian corridor. The ecosystem restoration project will restore and enhance degraded aquatic and terrestrial habitat along and within the San Marcos River.

The spring-fed San Marcos River offers one of rarest aquatic ecosystems found in the United States. The headwaters of the river originate from underground springs from the Edwards Aquifer, producing millions of gallons of crystal clear, constant temperature water daily. The river creates a unique ecosystem supporting five threatened or endangered species that live in the San Marcos River (San Marcos salamander, fountain darter, Texas wild rice, San Marcos gambusia, and Comal Springs riffle beetle).

The San Marcos River has attracted humans to its banks for more than 12,000 years, making San Marcos one of the oldest continuously inhabited places in the United States. The city of San Marcos has strived for the past 40 years to protect the river by establishing parks along its banks and restricting intense development.

Still, the constant use of the popular river over many decades has impacted the riparian and aquatic habitat of the river, requiring restoration of this valuable waterway. The San Marcos River and associated tributaries have experienced aquatic ecosystem degradation due to a variety of human factors. Impoundment of water upstream, in its tributaries, and within the study area has altered the normal flow regime of the San Marcos River. The native aquatic plant communities within the

San Marcos River have been diminished by invasive exotic and generalist plant species.

Increased nutrient and sediment loads from overland surface flow, tributary runoff, non-point sources and storm water drainage have reduced water quality and in-stream habitat values within the river. The majority of the bottomland plant community within the study area is highly disturbed and fragmented due primarily to urban encroachment, installation of hardpan surfaces, recreational disturbance and invasion of non-native plant species.

This degradation has resulted in the loss of high quality in-stream and riparian habitat for plant and wildlife species within the study area. The proposed restoration plan will help restore aquatic and terrestrial habitat that has degraded due to human activity, including critical habitat for the federally-listed species.

The city of San Marcos applied for U.S. Army Corps of Engineers Section 206 Aquatic Restoration Grant funds in 2002 to turn around the trend toward degradation in our river corridor. A Preliminary Restoration Plan (PRP) was developed by the U.S. Army Corps of Engineers and submitted in March 2003. The PRP was approved and moved forward to the next phase, the development of a Detailed Project Report (DPR).

However, at this stage, Federal funding for this program was reduced, placing the city of San Marcos PRP on the backburner. Funding this project is essential to restore integrity to the San Marcos River, the central point of our community for tourism, recreation, and quality of life.

This project will directly benefit the environment by increasing biodiversity, carrying capacity, stability and productivity of native plant and wildlife species endemic to the area. Additional benefits include improvement of existing recreational opportunities, enhancement of water quality, and improvement of natural aesthetics.

Specifically, the project will restore and sustain approximately 22.0 acres of riparian woodland habitat, 6.0 acre of tall grass prairie habitat, 4.0 acres of emergent wetland habitat and 16.0 acres of aquatic habitat within a highly urbanized area. The total project cost is estimated at \$4,520,000, which will be cost-shared 65 percent Federal Government and 35 percent city of San Marcos. The Federal share is \$2,938,000 with a local match of \$1,582,000.

The only COE Section 206 projects that will now receive funding are those that have congressional support.

Therefore, we ask you to approve a special appropriation earmark for \$439,000 for the San Marcos River Section 206 Project to fund the restoration. Thank you for your consideration of this project.

PREPARED STATEMENT OF THE ST. FRANCIS LEVEE DISTRICT OF ARKANSAS

EXECUTIVE SUMMARY

The Mississippi Valley Flood Control Association fiscal year 2008 Civil Works budget, Mississippi River and Tributaries Appropriations—Requesting Appropriations of \$7 million for Construction and \$23.475 million for Maintenance and Operation in the St. Francis Basin Project and a total of \$500 million for the Mississippi River and Tributaries Project. The reason for this seemingly large request is to be assured that the Corps of Engineers may fully fund on-going and future construction contracts as directed in the fiscal year 2006 appropriations act. Our requests are detailed in the tables attached to this statement.

BACKGROUND INFORMATION

My name is Rob Rash, and my home is in Marion, Arkansas, located on the west side of the Mississippi River and in the St. Francis Basin. I am the CEO/Chief Engineer of the St. Francis Levee District of Arkansas. Our District is the local cooperation organization for the Mississippi River and Tributaries Project and the St. Francis Basin Project in Northeast Arkansas. Our District is responsible for the operation and maintenance of 160 miles of Mississippi River Levee and 75 miles of St. Francis River Tributary Levee in Northeast Arkansas.

The St. Francis Basin is comprised of an area of approximately 7,550 square miles in Southeast Missouri and Northeast Arkansas. The basin extends from the foot of Commerce Hills near Cape Girardeau, Missouri to the mouth of the St. Francis River, 7 miles above Helena, Arkansas, a total distance of 235 miles. It is bordered on the east by the Mississippi River and on the west by the uplands of Bloomfield and Crowley's Ridge, having a maximum width of 53 miles.

The Mississippi River and Tributaries Project and the St. Francis Basin Project provide critical flood protection to over 2,500 square miles in Northeast Arkansas alone. This basin's flood control system is the very lifeblood of our livelihood and prosperity. Our resources and infrastructure are allowing the St. Francis Basin and the Lower Mississippi Valley to develop into a major commercial and industrial area for this great Nation. The basin is quickly becoming a major steel and energy production area. The agriculture industry in Northeast Arkansas and the Lower Mississippi Valley continues to play an integral role in providing food and clothing for this Nation. This has all been made possible because Congress has long recognized that flood control in the Lower Mississippi Valley is a matter of national interest and security and has authorized the U.S. Army Corps of Engineers to implement a flood control system in the Lower Mississippi Valley that is the envy of the civilized world. With the support of Congress over the years, we have continued to develop our flood control system in the Lower Mississippi Valley through the Mississippi River and Tributaries Project and for that we are extremely grateful.

Although, at the current level of project completion, there are areas in the Lower Mississippi Valley that are subject to major flooding on the Mississippi River. The level of funding that has been included in the President's Budget for the overall Mississippi River and Tributaries Project is not sufficient to adequately fund and maintain this project. The level of funding will require the citizens of the Lower Mississippi Valley to live needlessly in the threat of major flood devastation for the next 30 years. Timely project completion is of paramount importance to the citizens of the Lower Mississippi. Ten and Fifteen Mile Bayou improvements are just one of many construction projects necessary for flood relief in the St. Francis Basin. Ten and Fifteen Mile Bayou improvements were reauthorized by Congress through the Flood Control Act of 1928, as amended. Section 104 of the Consolidated Appropriation Act of 2001 modified the St. Francis Basin to expand the project boundaries to include Ten and Fifteen Mile Bayous and shall not be considered separable elements. Total project length of 38 miles includes Ten and Fifteen Mile Bayou, Ditch No. 15 and the 10 Mile Diversion Ditch that provide flood control for West Memphis and Vicinity. Without additional funds, construction would be delayed and West Memphis and Vicinity will continue to experience record flooding as seen December 17, 2001. West Memphis and Vicinity would experience immediate flood relief when the first item of construction is completed.

Next I feel that it is imperative that I mention at this time new policies being implemented by the Federal Emergency Management Agency in their Map Modernization Program. This is a 5-year program that was initiated in 2004 and consists of updating the Flood Insurance Rate Maps. We've been told that 20 percent of all counties nationwide are scheduled for update.

Of great concern to us and should be of concern to everyone is a new Zone Designation known as Zone X (Shaded) which will be all the areas outside the 100-year flood zone protected by levees. In the case of the Lower Mississippi River Valley, from Cape Girardeau, Missouri to the Gulf of Mexico, this is an area of some 35,000 square miles or 22,400,000 acres. A warning will be placed on the new Flood Insurance Rate Maps that will, among other things, state that within this area, communities should issue evacuation plans and encourage property owners to purchase flood insurance.

This large area is protected by the Mississippi River and Tributaries Levees but also by the entire Comprehensive Flood Control System consisting of not only the well designed, well constructed, well maintained, massive levees but also bank re-ventments, river cut-offs, floodways, floodwalls, diversions, flood storage reservoirs, control structures and many other improvements that have made certain that no Mississippi River Main Line Levee has failed since 1928, the year that Congress directed the Corps of Engineers to build the system. There have been a number of floods of record proportions since 1928 but not one failure. The American Taxpayer has invested billions of dollars in this system and their money up to now has been well spent. The Federal Emergency Management Agency seems to think it has been wasted. Not so!

The Design Flood for the Mississippi River and Tributaries Project is to protect against a flood predicted by the Weather Bureau as the "Maximum Possible" and provides for the disposal of all water predicted as possible. This unwarranted new Zone X (Shaded) on Flood Insurance Rate Maps will have a dramatic and costly burden on all the residents, businesses and industries along the Lower Mississippi River and its Tributaries and this economic disaster will be felt over this entire Nation. The language proposed will frighten Lenders and Companies looking for Industrial Sites, impact Crop Loans as well as causing millions of dollars to be spent for unnecessary flood insurance premiums. This is such a serious matter that we would suggest strongly that the appropriate congressional committees hold hearings on

this matter to determine what if any engineering basis the Federal Emergency Management Agency used to develop this new policy.

PROPOSED FUNDING

We support the amount of \$500 million requested by the Mississippi Valley Flood Control Association for use in the overall Mississippi River and Tributaries Project. This is the minimum amount that the Executive Committee of the Association feels is necessary to maintain a reasonable time line for completion of the overall Mississippi River and Tributaries Project. Also, the amounts that have been included in the President's budget for the St. Francis Basin Project; construction, operation and maintenance have not been sufficient to fund critical projects. These declined amounts have resulted in a significant backlog of work within the St. Francis Basin. Therefore, our District is requesting capabilities of \$7 million for the St. Francis Basin Project construction funds and \$23.475 million for the St. Francis Basin operation and maintenance funds. The amounts requested for the St. Francis Basin Project are a part of the total amounts requested for the Mississippi River and Tributary Appropriations of the Civil Works Budget.

SUMMATION

With the tragedy that struck the Gulf Coast, we must now turn our attention to the future and attempt to make certain that at least the flooding does not take place again. We can prevent that; the Dutch, the English and the Italians have done it and so can we if we treat flood control as something that we must do. The citizens of this great Nation deserve it.

There are four anomalies of nature that cause death and destruction to our Nation. They are: (1) earthquakes; (2) hurricanes; (3) tornadoes; and, (4) floods. The first three we can do very little if anything about except to prepare for the worst. We can build protection against floods, against the "maximum probable flood," one that has an "improbable occurrence but nevertheless a remotely possible one."

In order to provide such protection we believe that three things must be done.

First, the environmental laws, or at least the way they are interpreted for flood control projects, must be changed or we stand to lose more lives and have another absolute environmental catastrophe such as the one we have witnessed in New Orleans and along the Gulf Coast. Second, cancel all cost-sharing for flood control projects unless we do intend to only protect those that can afford it and ignore those that can not. Third, relax the requirements for the benefits-to-cost ratio for flood control projects for one reason, it is impossible to assign a dollar value to a human life. It is our opinion that these things must be done, for without flood control, nothing else really matters.

Again, we thank the Congress and this committee for all your help in the past and thank you in advance for your kind considerations of our requests for fiscal year 2008.

PROJECT AND STATE	MVFC REQUEST
Wappapello Lake, MO	\$14,000,000
Mississippi River Levees	34,538,000
Mississippi River Channel Maintenance	72,549,000
Memphis Harbor, TN	2,866,000
Helena Harbor, AR	563,000
Greenville Harbor, MS	372,000
Vicksburg Harbor, MS	445,000
St. Francis River & Tribs., AR	23,475,000
White River Backwater, AR	1,440,000
North Bank, Arkansas River, AR	270,000
South Bank, Arkansas River, AR	257,000
Boeuf & Tensas Rivers, LA	7,447,000
Red River Backwater, LA	5,500,000
Yazoo Basin, Sardis Lake, MS	14,784,000
Yazoo Basin, Arkabutla Lake, MS	9,975,000
Yazoo Basin, Enid Lake, MS	10,927,000
Yazoo Basin, Grenada Lake, MS	11,299,000
Yazoo Basin, Greenwood, MS	2,438,000
Yazoo Basin, Yazoo City, MS	694,000
Yazoo Basin, Main Stem, MS	3,525,000
Yazoo Basin, Tributaries, MS	1,018,000
Yazoo Basin, Whittington Aux Channel, MS	191,000

PROJECT AND STATE	MVFA REQUEST
Yazoo Basin, Big Sunflower, MS	2,196,000
Yazoo Basin, Yazoo Backwater, MS	979,000
Lower Red River, South Bank, LA	80,000
Bonnet Carre, LA	4,857,000
Old River, LA	21,243,000
Atchafalaya Basin, LA	28,641,000
Atchafalaya Basin Floodway, LA	2,609,000
Baton Rouge Harbor Devil's Swamp, LA	717,000
Mississippi Delta Region, LA	225,000
Bayou Cocodrie & Tribs, LA	41,000
Inspection of Completed Works	1,987,000
Mapping	1,521,000
TOTAL MR&T MAINTENANCE	283,669,000
CONSTRUCTION:	
Surveying and Mapping	16,770,000
St. John's Bayou-New Madrid Floodway, MO	13,300,000
Grand Prairie Region, AR	37,800,000
Bayou Meto, AR	22,450,000
Nonconnah Creek, TN	500,000
St. Francis Basin, MO & AR	7,000,000
Yazoo Basin, MS	67,125,000
Atchafalaya Basin, LA	34,000,000
Atchafalaya Basin Floodway, LA	10,894,000
MS Delta Region, LA	722,000
Channel Improvements, IL, KY, MO, AR, TN, MS & LA	64,547,000
Mississippi River Levees, IL, KY, MO, AR, TN, MS & LA	98,352,000
SUBTOTAL—CONSTRUCTION	356,690,000
SUBTOTAL—MAINTENANCE	283,669,000
SUBTOTAL—MISSISSIPPI RIVER & TRIBUTARIES	657,129,000
LESS REDUCTION FOR SAVINGS & SLIPPAGES	157,129,000
GRAND TOTAL—MISSISSIPPI RIVER & TRIBUTARIES	500,000,000

PREPARED STATEMENT OF THE BOARD OF MISSISSIPPI LEVEE COMMISSIONERS

Mr. Chairman and members of the committee: This statement is prepared by Peter Nimrod, Chief Engineer for the Board of Mississippi Levee Commissioners, Greenville, Mississippi, and submitted on behalf of the Board and the citizens of the Mississippi Levee District. The Board of Mississippi Levee Commissioners is comprised of 7 elected commissioners representing the counties of Bolivar, Issaquena, Sharkey, Washington, and parts of Humphreys and Warren counties in the Lower Yazoo Basin in Mississippi. The Board of Mississippi Levee Commissioners is charged with the responsibility of providing protection to the Mississippi Delta from flooding of the Mississippi River and maintaining major drainage outlets for removing the flood waters from the area. These responsibilities are carried out by providing the local sponsor requirements for the congressionally authorized projects in the Mississippi Levee District. The Mississippi Levee Board and the Mississippi Valley Flood Control Association support an appropriation of \$500 million for fiscal year 2008 for the Mississippi River & Tributaries Project. This is the minimum amount that we consider necessary to allow for an orderly completion of the remaining work in the Valley and to provide for the operation and maintenance, as required, to prevent further deterioration of the completed flood control and navigation work.

It is apparent that the administration loses sight of the fact that the Mississippi River & Tributaries Project provides protection to the Lower Mississippi Valley from waters generated across 41 percent of the continental United States. These waters flow from 31 States and 2 provinces of Canada and must pass through the Lower Mississippi Valley on its way to the Gulf of Mexico. We will remind you that the Mississippi River & Tributaries Project is one of, if not the most cost effective project ever undertaken by the United States Government. The foresight of the Congress in their authorization of the many features of this project is exemplary.

The many projects that are part of the Mississippi River & Tributaries Project not only provide protection from flooding in the area, but the award of construction con-

tracts throughout the Valley provides assistance to the overall economy of this area that is also encompassed by the Delta Regional Authority. The employment of the local workforce and purchases from local vendors by the contractors help stabilize the economy in one of the most impoverished areas of our country.

Thanks to the additional funding provided by the Congress over the last several years over and above the administration's budget, work on the Mainline Mississippi River Levee Enlargement Project is continuing. Of the original 69 miles of deficient levees in the Mississippi Levee District, 12.7 miles of work has been completed, 19.3 miles are currently under contract, and another 7.9 miles will be awarded in fiscal year 2008. Right of way has been acquired and the bids for 3.4 miles of work were opened in November 2005. With the combined crippling effect of the elimination of continuing contracts and the restrictions on reprogramming authorities, this item was terminated. Of the 19.3 miles currently under contract, the Corps had to negotiate a work "slow-down" because of a lack of sufficient funds for the contractor to work at full performance. This will push completion of these deficient areas out another year! We are requesting \$98.35 million for construction on the Mainline Mississippi River Levees in the Lower Mississippi Valley Division which will allow the Vicksburg and Memphis districts to keep existing contracts on schedule and award contracts to avoid any future unnecessary delays in completing this vital project. We are all well aware that the Valley some day will have to endure a Project Flood, we just don't know when. We must be prepared.

The President's fiscal year 2008 budget did not include funding for any construction projects within the Yazoo Basin. These are all projects authorized and funded so wisely by the Congress. This action is especially difficult to understand during a time when our Nation needs an economic boost. All of these projects are encompassed in the footprint of the Delta Regional Authority, an area recognized by the Congress as requiring special economic assistance to keep pace with the rest of our great Nation. We can not lose sight of the fact that all of these projects are required to return more than \$1 in benefits for each \$1 spent. No project authorized and funded by the Congress should be indiscriminately terminated without the benefit of having the opportunity to complete the study process and subsequent construction after complying with the Corps Policy and Guidelines.

The Final Report for the Yazoo Backwater Project will be released this year. The Yazoo Backwater Project will provide economic and environmental benefits to parts of six counties in the south Mississippi Delta. This project will build a pump that will evacuate floodwater that is generated over 4,093 square miles in the Mississippi Delta. The pump will lower the 100 year flood event by 4.5 feet thereby reducing urban and rural structural damages, providing benefits to the remaining agricultural lands, and reducing the frequency and duration of floods. Reforestation easements will be purchased on up to 55,600 acres of existing agricultural land which will provide benefits in every environmental category—wetlands, terrestrial, aquatic, and waterfowl resources as well as vastly improving water quality. The recommended plan for the Yazoo Backwater Project will balance economics with the environment. This is a model project that should be the standard for future public works projects in the United States. We are requesting this project be funded by the Congress in the amount of \$15 million. These funds will allow the Corps to begin acquisition of the reforestation easements and initiate the award of the pump supply contract.

The Draft Supplemental Environmental Impact Statement for the Big Sunflower River Maintenance Project will be released later this year. This maintenance project will restore flood control capacities to 130 miles of channels by removing sediment that has built up over the past 40 years since the channels were originally improved. Our request for \$2.196 million will allow right-of-way acquisition to continue and for the award of the first dredging contract. The residents in the Mississippi Delta continue to suffer damages from flooding while they wait for this maintenance project to reach their area.

Work on the Delta Headwaters Project has proven effective in reducing sediments to downstream channels. To discontinue this project will only increase sediment in downstream channels diminishing water quality, reducing the level of protection to the citizens of the Delta and increasing required maintenance. We are requesting \$25 million to continue this project.

The Upper Yazoo Project is critical to the Delta. The Corps of Engineers operates 4 major flood control reservoirs on the bluff hills overlooking the Mississippi Delta. These reservoirs hold back heavy spring rains and must have adequate outlet channel capacity to pass this excess runoff during the summer and fall months. Without completion of the Upper Yazoo Project, the Corps is forced to hold flood water from the previous spring, thereby reducing the ability to provide protection from the current year's flood water. We urge the Congress to provide \$22.5 million allowing con-

struction to continue and the award of additional channel enlargement items. With this appropriation, work can be completed to Glendora which will provide relief to Marks, Mississippi.

Maintenance of completed works cannot be overlooked. The four flood control reservoirs overlooking the Delta have been in place for 50 years and have functioned as designed. Required maintenance must be performed to avoid any possibility of failure during a flood event. We are asking for \$10.875 million for Arkabutla Lake, \$15.042 million for Sardis Lake, \$10.927 million for Enid Lake, and \$11.38 million for Grenada Lake. Additional funding will be used to place rip rap, add needed infrastructure, and repair and upgrade existing infrastructure around all the lakes.

We are requesting \$34.5 million for Maintenance of the Mainline Mississippi River Levees in the Lower Mississippi Valley Division which will provide for repair of levee slides, slope repair, and repair of the gravel maintenance roadway which is so vital to access during high water.

I have reviewed a great deal of information regarding the needs of providing flood protection to our area. Another major feature of the Mississippi River & Tributaries Project relates to navigation interests along the Mississippi River. Several of our ports have been informed that the President's budget does not include enough funding for Critical Harbor Dredging necessary to keep these harbors opened for navigation. Our port commissioners have been notified that lack of annual dredging will cause these ports to be a hazard to navigation and be shut down. This will impact the movement of over 4.5 million tons of cargo being shipped on our waterways annually from these ports. This equates to an additional 180,000 truck loads per year of products on our highways. It is imperative that funding be made available for Critical Harbor Dredging to allow continued operation of these facilities, which are key features to the economic growth of the region.

The Conference Report for Energy & Water Development Appropriations Act, 2006 funded the MR&T Project with \$400 million. Unfortunately, the Conference Report included detrimental language that has crippled the Corps ability to get the MR&T Project done in a timely, efficient, and economically feasible way. The Conference Report eliminated the Continuing Contracts Clause that allowed the Corps to bid projects without all the funding in place before the project starts. This will significantly slow down all of our Corps projects. There have been no new starts in fiscal year 2006 or fiscal year 2007 for our critical Levee Enlargement & Berms Project because of this elimination. The Corps has used Continuing Contracts since 1922! The Corps of Engineers must be able to utilize Continuing Contracts on the MR&T Project.

The Conference Report also included Reprogramming Authorities restrictions which is limiting the Corps of Engineers ability to shift monies within the MR&T Project. Reprogramming Authorities allow money to move from one project that is behind schedule to another project that is ahead of schedule. The reprogramming authority is now very limited. Money is being wasted to "slow-down" and stop existing on-going work because of the language! The Reprogramming Authority restrictions must be relaxed for the MR&T Project in order for the Corps of Engineers to make maximum use of appropriations that Congress provides.

In conclusion, the Conference Report for 2006 was a record year for funding levels for the MR&T Project. The inclusion of the detrimental language of Reprogramming Authority restrictions and the elimination of Continuing Contracts Clause has crippled the Corps of Engineers ability to wisely spend that money that Congress has so wisely appropriated. We must remove this detrimental language in the fiscal year 2008 appropriations. The President's fiscal year 2008 budget for the MR&T Project provides only \$260 million which is terribly inadequate and will not allow the Corps to proceed in the most economical manner.

On another note, new policies are being implemented by the Federal Emergency Management Agency (FEMA) in their Map Modernization Program. A new zone designation will show a shaded "Zone X" outside the 100 year flood zone but protected by levees. The entire Mississippi Delta is protected by the levee! An attached "Warning" will be on new Flood Insurance Rate Maps (FIRM) stating that the levee could fail! This will have a dramatic & costly affect to residents, businesses & industries along the Lower Mississippi River. New businesses will be frightened to build in a "flood zone." Flood insurance rates will increase. Our Mainline Mississippi River Levee system has not failed since the Corps built the current levee system in 1928! This is a needless and reckless act by FEMA as a result of failures on some hurricane protection levees in New Orleans in 2005 during Hurricane Katrina.

As members of the Congress representing the citizens of our Nation who live with the Mississippi River everyday, you clearly understand both the benefits provided by this resource, and the destructive force that must be controlled during a flood. On behalf of the Mississippi Levee Board, I cannot express enough, our appreciation

for your efforts in providing adequate funding over the last several years that has allowed construction to continue on our much needed projects and thank you in advance for your kind considerations of our requests for fiscal year 2008.

PREPARED STATEMENT OF THE CITY OF ARLINGTON, TEXAS

Mr. Chairman and members of the subcommittee: On behalf of the city of Arlington, Texas, I am pleased to submit this statement for the record in support of our request for funding in the amount of \$9.75 million in the fiscal year 2008 Appropriation Bill for Energy and Water Development to support the city's continued efforts to reduce flood damage, improve public safety, reduce erosion and sedimentation, and enhance wildlife habitat and passive recreation within the Johnson Creek corridor through Arlington, Texas.

PROJECT EXECUTIVE SUMMARY

Johnson Creek, a tributary of the Trinity River, has been the topic of extensive study by the Corps of Engineers (Corps) and the city of Arlington, Texas (city) since the early 1980's due to a history of flooding, extensive erosion and sedimentation, recreational challenges and opportunities, and important wildlife habitat.

In 1990, the Corps proposed to address flooding by planning and allocating funds to channel and line with concrete substantial stretches of Johnson Creek. The city rejected this plan on the grounds that it provided flood relief at the expense of recreational opportunities, wildlife habitat and economic development. The city adopted in 1997 a more holistic alternative called the Johnson Creek Corridor Plan that received wide community support but was not fundable. In 1999, the Corps prepared an Interim Feasibility Report and Integrated Environmental Assessment for Johnson Creek in Arlington. The document recommended a National Economic Development (NED) Plan for flood damage reduction that also addressed the city's desires for enhanced wildlife habitat and recreation in the Johnson Creek corridor. In 2000, the city adopted the Corps' 1999 plan to purchase homes within the floodplain of Johnson Creek, create linear parks with trails, and acquire and restore open space for wildlife habitat and recreation.

In 2004, subsequent to the city's contract with the Corps, the city entered into a partnership with the Dallas Cowboys to build a new football stadium adjacent to the Texas Rangers' venue and land purchased and restored as part of the 1999 plan. In 2005, the Corps' 1999 plan was amended to remove approximately 90 acres of city-owned land north of Union Pacific Railroad tracks.

During ecological investigations associated with design and master plan development of the football stadium, a number of critical issues arose that the 1999 plan (as amended in 2005) only partially addressed. The city realized that a holistic, watershed approach, in conjunction with maximizing the use of on-site best management practices (BMPs), would be required to truly address flooding, water quality, and wildlife habitat/recreation issues at Johnson Creek. The challenge was that deviations from 1999 plan, which largely has been implemented, require explicit authorization from Congress.

In March 2006, the city prepared a watershed conservation plan entitled Johnson Creek: A Vision of Conservation that modifies the 1999/2005 authorized plan. The modified plan allows the city to: (1) implement and modify, if necessary, unfinished components of the 1999/2005 plan; (2) design and construct new bank stabilization, flood control, recreation, and habitat restoration projects on public lands and easements along Johnson Creek; (3) acquire and/or receive reimbursement for an additional 90 acres of environmental lands within Trinity River and/or Rush/Village Creek floodplain; and (4) obtain reimbursement for new acquisitions, if desired, and for the use of city parks for funded Federal projects.

Total project cost to implement the modified plan is estimated at \$79,997,666, including contingency. This includes \$30,000,000 in sunk costs for completed Johnson Creek projects.

PROJECT DESCRIPTION

The modified plan is divided into a minimum of two phases as summarized below:

Phase 1 includes property between Sanford Street and Randol Mill Road, plus a tributary of Johnson Creek south of the Dallas Cowboys stadium project. Phase 1 was selected for a variety of reasons as follow: (1) the riparian corridor has high potential for restoration to improve wildlife habitat, water quality, and recreational opportunities; (2) the property is owned by the city; (3) a significant portion of existing environmental stresses, particularly erosion and sedimentation, occur within

this area; (4) the city has identified this area as an entertainment district; and (5) this area includes the future Dallas Cowboys stadium, the existing Texas Rangers stadium, and a future Arlington, Texas town center called Glorypark. These developers have all agreed to provide matching money for the city to improve the green space within this corridor for environmental benefits listed above. Phase 1 work will provide the catalyst and inspiration for future work throughout the remainder of the watershed.

Phase 1 work is all new work and includes constructing a detention/sedimentation basin and overflow swale just west of the Stone Gate Mobile Park; bank stabilization and creek restoration including additional overflow swales; installing a pedestrian bridge across Johnson Creek; providing trails and other passive recreational amenities; and enhancing remaining green space for wildlife habitat. A regional detention/sedimentation basin proposed between Sanford Street and Division Street may be included in Phase 1 work if funding becomes available in time.

Phase 2 includes all remaining work upstream of the Phase 1 site area between Sanford Street and Vandergriff Park, and 90 acres of environmental land within Trinity River and/or Rush/Village Creek floodplain. Within the Johnson Creek corridor, Phase 2 work will occur within three main areas. At Vandergriff, Meadowbrook, and Julia Burgen Parks, proposed activities include creating a detention/sedimentation basin; restoring eroded creek banks and creek restoration; enhancing passive recreational opportunities using trails and other amenities; and enhancing wildlife habitat. Possible acquisition of three homes between Collins Street and Park Row Avenue may also occur as part of Phase 2.

The city has long recognized that the ecological health of Johnson Creek and its contributing watershed are inextricably tied to the quality of life of its residents. In this light, the city hopes to develop a stronger link between its residents and its natural surroundings by restoring the creek, and, in doing so, revitalizing the community. Immediate local benefits include flood damage protection, habitat restoration, improved water quality and public health, increased access to Johnson Creek for passive recreation, elevated community pride, and economic redevelopment. The project complements larger, regional efforts to improve water quality and maximize the function of floodplain communities in the Trinity River watershed. Nearly all local benefits also contribute to statewide water quality, stormwater management, flood control, and environmental planning efforts by the North Central Texas Council of Government, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Corps of Engineers, Texas Parks and Wildlife, and Texas Commission on Environmental Quality.

FUNDING NEEDS

The modified plan, which includes completed components of the 1999/2005 plan and new Johnson Creek projects as described above, has a total estimated cost of \$79,997,666, of which 35 percent will be provided by the city.

For fiscal year 2008, the city of Arlington, Texas is seeking \$9.75 million from the U.S. Army Corps of Engineers Programs account through your Energy and Water Development Appropriations Subcommittee.

Thank you for your consideration of our request.

PREPARED STATEMENT OF THE STATE OF ILLINOIS

The State of Illinois supports the following projects in the administration's fiscal year 2008 budget proposal:

	Amount
SURVEYS:	
Illinois River Basin Restoration	\$400,000
Great Lakes Navigation System Study	800,000
CONSTRUCTION:	
Chain of Rocks Canal	4,500,000
Chicago Shoreline	9,000,000
Des Plains River—Phase 1	6,620,000
East St. Louis Flood Protection Rehab	2,500,000
Illinois Waterway, Lockport Lock & Dam (Dam Safety)	20,445,000
McCook and Thornton Reservoir	33,500,000
Miss River Btwn. Ohio & Mo Rivers (Reg. Works)	2,100,000
Olmsted Lock & Dam	104,000,000
Upper Mississippi River Restoration	23,464,000

OPERATION AND MAINTENANCE

Illinois supports the Corps' budget for continued satisfactory maintenance and operation of navigation, flood control and multipurpose projects, as well as adequate manpower for public service activities related to the water resources in and bordering the State. Although, the administration's budget request contains nearly \$142.4 million for operation and maintenance for the Corps Districts in Illinois, the administration has modified the structure of the O&M account by shifting the funding for rehabilitation projects to this account. This skews the O&M account funds, and the disaggregated numbers from the administration's budget indicate the Corps' future viability and commitment to maintain the inland waterway system, water supply and recreational reservoirs, and to maintain an operational and forecast dependent streamgaging network, can severely be impacted. As an example, there is a need for an additional \$14.7 million to satisfy dredging needs and the backlog of maintenance for the Illinois River Waterway. Backlog of maintenance items for the Mississippi River in Rock Island and St. Louis Corps Districts is an additional \$27.5 million.

Illinois also supports the administration's funding to the Corps for Lake Michigan diversion accounting. However, we request an additional \$350,000 for the Corps to ensure that they have adequate appropriations to reconvene the Technical Committee for the accounting system to fulfill their dual measurement and accounting responsibilities.

Additionally, the contamination in the Inner Harbor area of Waukegan Harbor warrants designation of the harbor as an "Area of Concern" by the International Joint Commission. There is an ongoing USEPA Legacy Act project to identify an acceptable disposal site for a total clean up of the contaminants in the inner Harbor. The Corps of Engineers is a partner in that effort. One million dollars is the minimum needed to complete maintenance dredging of the contaminated outer harbor shoaling.

ADDITIONAL FUNDING PRIORITIES

The State of Illinois also recommends that additional funding be provided for the following projects, which are listed in the general priority order, in the fiscal year 2008 Corps of Engineers' budget:

Chicago Sanitary & Ship Canal Dispersal Barrier

The State of Illinois has been working closely with the Chicago District and other Great Lakes agencies at both the Federal and State level to keep Asian Carp from reaching the Great Lakes through the Chicago Waterway system. We entered into a Project Cooperation Agreement with the Corps to construct a second, more effective and permanent electrical barrier in the Chicago Sanitary and Ship Canal using the Corps' section 1135 program, and have contributed \$1.8 million in State funds along with \$475,000 from the other 7 Great Lakes States to match the Corps' contribution. Also, there has been unanimous agreement throughout the Great Lakes community that Congress needs to authorize and fund the U.S. Army Corps of Engineers to construct, operate and maintain a barrier control system. However, for the first time since Congress authorized the Corps to construct an aquatic nuisance species demonstration barrier in 1990 at 100 percent Federal cost, the President's proposed budget is asking the State of Illinois to contribute 25 percent of the total cost to make this barrier permanent. The President's proposed budget is also requiring the State of Illinois to contribute an additional \$1,725,000 (this is in addition to the \$1.8 million Illinois has already contributed along with \$475,000 from the other 7 Great Lakes States) to allow the Corps to complete construction of Barrier II. Finally, this budget requires Illinois to fully fund the operation and maintenance of both barriers, which the Corps has estimated could run as high as \$1.0 million per year. Therefore, the State of Illinois urges that the Corps receives \$1.1 million to start construction on making the demonstration barrier permanent, and \$6.9 million to complete Phase IIB of the Barrier II construction at full Federal expense, and an additional \$1.0 million to carry out the operation and maintenance of both Dispersal Barrier projects annually.

The Chicago Harbor Lock Rehabilitation

The Chicago River Lock Rehabilitation is an important project for the State of Illinois. It will reduce leakage of Lake Michigan water into the Chicago Sanitary and Ship Canal and thus will reduce Illinois' Lake Michigan diversion. Reducing leakage at the Chicago River Lock is specifically mentioned in the list of activities in the 1996 Memorandum of Understanding that Illinois, the other Great Lakes States and the U.S. Department of Justice signed to resolve the dispute over Illinois' alleged

over diversion of Lake Michigan water. As part of the move to lakefront diversion accounting, improved control of Lake Michigan water used at the Chicago River Lock is essential. This project is also needed to ensure the safe operation of the lock itself. This lock is the second busiest lock in the country, and while almost all of the traffic is recreational, its value and importance to Chicago and the State is enormous. Currently, no funding is included in the fiscal year 2008 budget for this purpose. To rehabilitate the lock in fiscal year 2008, Illinois requests \$7.0 million, which would primarily be used to fund the fabrication of two new gates for the west end of the lock.

Illinois River Basin Restoration

Section 519 of Water Resources Development Act 2000 authorized the Illinois River Basin Restoration. The fiscal year 2008 budget request proposes \$400,000 in General Investigations funds for a comprehensive plan. However, the State of Illinois requests that this be increased to \$2.0 million in General Investigation funds to complete much of the comprehensive plan that has been developed under other authorizations. Additionally, the State of Illinois requests \$8.5 million of Construction General funds to continue construction in fiscal year 2008 of the projects that were authorized in section 519 as providing substantial restoration and environmental benefits through the comprehensive plan.

Des Plaines River—Phase One

Section 101(b–10) of the Water Resources Development Act of 1999 authorized Phase I of the Upper Des Plaines River Flood Control Project at a total cost of \$68.3 million for the implementation of the six recommended projects. The Federal share is approximately \$44.4 million (65 percent) and the estimated non-Federal cost is \$23.9 million. While \$6.6 million is designated to the levee 37 element of this project in this year's budget request, we are requesting an additional \$3.0 million in the fiscal year 2008 budget to continue work with the remaining elements of the project.

Upper Mississippi and Illinois Waterway System Navigation Project

It has been more than 2 years since the Corps completed the feasibility phase of the Upper Mississippi and Illinois Waterway System Navigation Study, issuing the final feasibility report and Chief's Report in 2004. While Congress has not authorized construction yet, it has provided funding for Pre-construction, Engineering and Design (PED). Thus, Illinois is requesting an appropriation of \$24.0 million for the Corps of Engineers to continue PED, and if authorized for construction, we recommend construction funding of \$16.0 million. The proposed fiscal year 2008 budget contains no funding for this project.

Chouteau Island (Ecosystem Restoration)

The Corps of Engineers, St. Louis District, is continuing the feasibility study for ecosystem restoration for the Chouteau Island, Illinois, project authorized under section 514 (Missouri and Middle Mississippi Rivers Enhancement Project) of the Water Resources Development Act of 1999 (Public Law 106–53). The project is focusing on ecosystem restoration on IDNR-owned land on Chouteau, Gabaret, and Mosenthein Islands in Madison County. Illinois requests an appropriation of \$150,000 for the Corps of Engineers to complete the Feasibility Study and initiate Design for the Chouteau Island, Illinois, project. The fiscal year 2008 budget contains no specific funding for this project.

Peoria Riverfront Development

We request the addition of \$250,000 in General Investigations funds to finalize the design of the Lower Island of the Peoria Riverfront project. The fiscal year 2008 budget contains no funding for this purpose. The increase is needed to meet the design and construction schedule.

Des Plaines River Feasibility Study—Phase Two

An expansion of the Phase I Upper Des Plaines River study was authorized in section 419 of the Water Resources Development Act of 1999. The projected \$25,000,000 in average annual damages, which will remain in the tributary floodplains of the Des Plaines River after the completion of Phase I project construction, is the basis for the expanded study of Phase II. State of Illinois, Lake County, Cook County, and Kenosha County all have appropriated funds under contract for cost sharing in the Phase II study effort. Currently, the fiscal year 2008 budget contains no funding to continue the Phase II study effort. Illinois requests an appropriation of \$500,000 of General Investigation funds to continue the feasibility study in fiscal year 2008.

East St. Louis & Vicinity (Ecosystem Restoration & Flood Damage Protection)

The Corps of Engineers, St. Louis District, is continuing design of the project for ecosystem restoration and flood damage reduction at East St. Louis and Vicinity, Illinois (East Side Levee and Sanitary District), authorized by section 204 of the Flood Control Act of 27 October 1965 (Public Law 89-298). The project is focusing on ecosystem restoration within the American Bottoms area. The Water Resources Development Act of 2000 modified section 204 of the Flood Control Act of 1965, to make ecosystem restoration a project purpose. Accordingly, ecosystem restoration will be included with the flood control project. Illinois requests an appropriation of \$700,000 for the Corps of Engineers to continue the Pre-Engineering and Design and documentation of the East St. Louis and Vicinity Project. Currently, the fiscal year 2008 budget contains no funding for this purpose.

KANKAKEE STATE LINE

We urge you to include \$300,000 to fund the design and implementation phase of the State Line Kankakee Aquatic Ecosystem Restoration Act Project that was authorized under section 206 of the Water Resources Development Act of 1996, as amended. We are concerned that the funding level for section 206 Continuing Authorities Projects requested in the President's budget for fiscal year 2008 is not adequate to insure continuation of this project.

Wood River Levee

The Wood River Drainage and Levee District protects an urban and industrial area in the Mississippi River flood plain in Madison County, Illinois, upstream of the city of East St. Louis. Problems with the integrity of the flood protection system were documented during the 1993 flood including unexpected seepage problems that had to be handled as an emergency. The proposed project addresses both design deficiency and reconstruction issues. The design deficiency portion of the project has been approved; the reconstruction portion requires new authorization. The recommended actions are required to maintain the system's authorized level of protection. Illinois requests an appropriation of \$700,000 for the design deficiency portion of the project for the Corps of Engineers to execute a Project Cooperation Agreement, construct a portion of the relief wells, and continue relief well design. The fiscal year 2008 budget contains no funding for this project.

Melvin Price Lock and Dam

The State of Illinois also requests \$750,000 funding for the Corps to continue the cost-shared recreation facilities with the city of Alton and \$2,400,000 to continue design and construction of punch list items. The fiscal year 2008 budget contains no funding for this project.

Upper Mississippi River Environmental Management Plan

Section 509 of the Water Resources Development Act of 1999 reauthorized the Upper Mississippi River System Environmental Management Program (EMP). In its 20 years of existence, the EMP has become the most significant effort to restore and protect the natural resource values of the Upper Mississippi River. While \$23.64 million is in this year's budget request, we believe this level of funding is below the point that Corps can efficiently continue with the program. To pursue this program efficiently, we believe this program should be pursued at the reauthorized level of \$33.25 million as described in section 509 of the Water Resources Development Act of 1999.

Upper Mississippi River Comprehensive Plan

Section 459 of the Water Resources Development Act of 1999 authorized the Upper Mississippi River Comprehensive Plan for the Corps to develop a 3-year study to address water resource and related land resource problems and opportunities in the Upper Mississippi and Illinois River Basins. We are requesting that \$686,000 be provided in the Corps of Engineers General Investigations funding to advance the Upper Mississippi Comprehensive Plan to completion.

Sections 204, 206, and 1135 Enhancement Projects

Section 204, 206, and 1135 programs offer a wide range of opportunities to address fish and wildlife habitat needs which exist due to past Corps projects and ongoing ecosystem and dredging activities. The section 206 program provides a proactive tool for Federal participation in aquatic ecosystem restoration initiatives where the need for the aquatic restoration activity does not have to directly relate to a prior Corps sponsored project. The State of Illinois strongly urges full funding of these continuing authorities.

PREPARED STATEMENT OF THE SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY AND
THE CITY OF MESA, ARIZONA

Chairman Dorgan, Ranking Member Domenici, and distinguished members of the subcommittee, thank you for allowing us to testify on behalf of the Salt River Pima-Maricopa Indian Community (SRPMIC) and the city of Mesa in support of a fiscal year 2008 appropriation of \$1.6 million for the Va Shly'ay Akimel, Arizona, project of the U.S. Army Corps of Engineers. This project will restore a degraded stretch of the Salt River in central Arizona, and it is critically important to the environmental ecosystem for the tribe, the city, and the region.

Construction of dams on the Salt River has damaged vegetation and wetlands along the Salt River basin. The Va Shly'ay Akimel project will restore ecosystem functions and value to a 14-mile reach of the river, within the Indian Community and the City of Mesa. The restoration project will improve approximately 1,487 acres of habitat, including 883 acres of cottonwood/willow community, 380 acres of mesquite bosque, 200 acres of wetlands, and 24 acres of Sonoran Desert scrub shrub. Restoration of this resource is particularly significant within the urban setting because riparian areas in the Southwest represent only 1 percent of the landscape, yet the survival of 75-90 percent of wildlife in the West is dependant on riparian areas. In Arizona, over 90 percent of riparian areas have been lost due to impacts from European settlement and urbanization.

Mr. Chairman, because of this subcommittee's efforts, over \$4 million has been appropriated for the feasibility and preconstruction engineering and design phases of the Va Shly'ay Akimel project over the last 6 fiscal years. We are extremely grateful for the subcommittee's ongoing support of the project.

As a result of this prior funding, substantial progress is being made and the work needs to be continued. A Feasibility Study and Environmental Impact Study were completed in January 2005, determining the preferred plan for environmental restoration. Further project accomplishments in fiscal year 2006 and fiscal year 2007 included initiation of the design phase, mapping, completion of a value engineering study, initiation of Geotech Investigations, and preliminary engineering.

For fiscal year 2008, the Corps has a capability to utilize \$1.6 million for continued PED, but the President's budget proposal only includes \$658,000 for the project. Therefore, we request that the subcommittee will provide this higher level of funding in order to contain long-term costs and maintain an optimal project schedule.

As non-federal sponsors of this project, the SRPMIC and the city of Mesa fully recognize the importance of restoring the Salt River's environmental integrity as soon as possible. As a consequence, the tribe and city are committed to discharging the requisite cost-sharing obligations associated with the project at the higher funding level next year.

We also note that, as far as we know, this project is the only one in the Nation featuring a joint cost-share agreement between an Indian tribe and a local community. This makes it a unique project of the Corps of Engineers. We believe that our example of municipal-tribal cooperation can serve as a model for future joint projects of tribal communities and local governments.

In conclusion, given the progress thus far, scope, and environmental impacts, it is critically important that the Va Shly'ay Akimel project remain on an optimal schedule. Again, because the Corps has a maximum capability of fully utilizing \$1.6 million for continued PED on this project in fiscal year 2008, we ask that the subcommittee fund that amount.

Thank you for your favorable consideration.

PREPARED STATEMENT OF THE CHAMBERS COUNTY-CEDAR BAYOU NAVIGATION
DISTRICT, TEXAS

We express full support of the inclusion of the full capability of the USACE for fiscal year 2008 for construction of the project to deepen and widen Cedar Bayou, Texas.

President's budget included \$0.

Funds needed in fiscal year 2008—\$9,056,000 (Construction General).

HISTORY AND BACKGROUND

The Rivers and Harbor Act of 1890 originally authorized navigation improvements to Cedar Bayou. The project was reauthorized in 1930 to provide a 10-foot deep and 100-foot wide channel from the Houston Ship Channel to a point on Cedar Bayou 11 miles above the mouth of the bayou. In 1931, a portion of the channel was constructed from the Houston Ship Channel to a point about 0.8 miles above the mouth

of Cedar Bayou, approximately 3.5 miles in length. A study of the project in 1971 determined that an extension of the channel to project Mile 3 would have a favorable benefit-to-cost ratio. This portion of the channel was realigned from Mile 0.1 to Mile 0.8 and extended from Mile 0.8 to Mile 3 in 1975. In October 1985, the portion of the original navigation project from project Mile 3 to 11 was deauthorized due to the lack of a local sponsor.

In 1989, the Corps of Engineers, Galveston District completed a Reconnaissance Report dated June 1989, which recommended a study for an improvement to a 12-foot by 125-foot channel from the Houston Ship Channel Mile 3 to Cedar Bayou Mile 11 at the State Highway 146 Bridge. The Texas Legislature created the Chambers County-Cedar Bayou Navigation District in 1997 as an entity to improve the navigability of Cedar Bayou. The district was created to accomplish the purpose of Section 59, Article XVI, of the Texas Constitution and has all the rights, powers, privileges and authority applicable to Districts created under Chapters 60, 62, and 63 of the Water Code—Public Entity. The Chambers County-Cedar Bayou Navigation District then became the local sponsor for the Cedar Bayou Channel.

PROJECT DESCRIPTION AND REAUTHORIZATION

Cedar Bayou is a small coastal stream, which originates in Liberty County, Texas, and meanders through the urban area near the eastern portion of the City of Baytown, Texas, before entering Galveston Bay. The bayou forms the boundary between Harris County on the west and Chambers County on the east. The project was authorized in Section 349 of the Water Resources Development Act 2000, which authorized a navigation improvement of 12 feet deep by 125 feet wide from Mile 2.5 to Mile 11 on Cedar Bayou. Corps studies have indicated that the preferred plan is to widen the channel to 100 feet and deepen it to 10 feet which is the current plan of action.

JUSTIFICATION AND INDUSTRY SUPPORT

First and foremost, the channel must be improved for safety. The channel is the home to a busy barge industry. The most cost-efficient and safe method of conveyance is barge transportation. Water transportation offers considerable cost savings compared to other freight modes (rail is nearly twice as costly and truck nearly 4 times higher). In addition, the movement of cargo by barge is environmentally friendly. Barges have enormous carrying capacity while consuming less energy, due to the fact that a large number of barges can move together in a single tow, controlled by only one power unit. The result takes a significant number of trucks off of Texas highways. The reduction of air emissions by the movement of cargo on barges is a significant factor as communities struggle with compliance with the Clean Air Act. Several navigation-dependent industries and commercial enterprises have been established along the commercially navigable portions of Cedar Bayou. Several industries have docks on at the mile markers that would be affected by this much-needed improvement. These industries include: Reliant Energy, Bayer Corporation, Koppel Steel, CEMEX, U.S. Filter, Recovery Services and Dorsett Brothers Concrete, to name a few.

PROJECT COSTS AND BENEFITS

Congress appropriated \$100,000 in fiscal year 2001 for the Corps of Engineers to conduct the feasibility study to determine the Federal interest in this improvement project. The study indicated a benefit to cost ratio of the project of 2.8 to 1. The estimated total cost of the project is \$16.8 million with a Federal share estimated at \$11.9 million and the non-federal sponsor share of approximately \$4.9 million. Total annual benefits are estimated to be \$4.8 million, with a net benefit of \$3 million. Congress thus far has appropriated nearly \$1.7 million for this project.

It has also become an important project for the Port of Houston Authority—the Nation's busiest port in foreign tonnage. They hope to institute a container on barge facility as soon as this project is accomplished. We would appreciate the subcommittee's support of the required add of the \$9,056,000 for construction of this important improvement project. The users of the channel deserve to have the benefits of a safer, most cost-effective Federal waterway.

CURRENT STATUS

In July 2006, the project feasibility report was accepted and approved by Asst. Secretary of the Army John P. Woodley. The PED will be completed early fall this calendar year. The project will then be ready for construction. The USACE capa-

bility of \$9,056,000 for fiscal year 2008 represents the total Federal share of construction of the project.

PREPARED STATEMENT OF THE BRAZOS RIVER HARBOR NAVIGATION DISTRICT,
FREEPORT, TEXAS

We express full support of the inclusion in the fiscal year 2008 budget for the full capability of the USACE of \$721,000—General Investigation; \$11,738,000—O&M. President's budget included \$721,000—General Investigation; \$5,735,000 O&M. Additional funds needed for fiscal year 2008 \$4,003,000—O&M.

HISTORY AND BACKGROUND

Port Freeport is an autonomous governmental entity authorized by an act of the Texas Legislature in 1925. It is a deep-draft port, located on Texas' central Gulf Coast, approximately 60 miles southwest of Houston, and is an important Brazos River Navigation District component. The port elevation is 3 to 12 feet above sea level. Port Freeport is governed by a board of six commissioners (soon to increase to seven) elected by the voters of the Navigation District of Brazoria County, which currently encompasses 85 percent of the county. Port Freeport land and operations currently include 186 acres of developed land and 7,723 acres of undeveloped land, 5 operating berths, a 45-foot deep Freeport Harbor Channel and a 70-foot deep sink hole. Future expansion includes building a 1,300-acre multi-modal facility, cruise terminal and container terminal.

Port Freeport is conveniently accessible by rail, waterway and highway routes. There is direct access to the Gulf Intracoastal Waterway, Brazos River Diversion Channel, and, State Highways 36 and 288. Located just 3 miles from deep water, Port Freeport is one of the most accessible ports on the Gulf Coast.

PROJECT DESCRIPTION

The fiscal year 2002 Energy and Water Appropriations signed into law included a \$100,000 appropriation to allow the United States Army Corps of Engineers (USACE) to conduct a reconnaissance study to determine the Federal interest in an improvement project for Freeport Harbor, Texas. The USACE, in cooperation with the Brazos River Harbor Navigation District as the local sponsor, has completed that study. The report indicates that "transportation savings in the form of National Economic Development Benefits (NED) appear to substantially exceed the cost of project implementation," thus confirming "a strong federal interest in conducting the feasibility study of navigation improvements at Freeport Harbor." Congress has to date appropriated over \$2.6 million for this project.

Port Freeport has the opportunity to solidify significant new business for Texas with this improvement project. In addition, the improvement to the environment by taking a huge number of trucks off of the road, transporting goods more economically and environmentally sensitive by waterborne commerce is infinitely important to the community, the State, and the Nation. Moreover, the enhanced safety of a wider channel cannot be overstated. The emergence of an LNG facility at Port Freeport—a joint venture of Conoco-Philips and Cheniere Energy further solidifies the importance of keeping this critical waterway at optimum depth and width.

ECONOMIC IMPACT OF PORT FREEPORT

Port Freeport is 13th in foreign tonnage in the United States. It is responsible for augmenting the Nation's economy by over \$7 billion annually and generating over nearly 24,000 jobs in Texas, over 7,000 direct. It also augments the economy by providing annual State and local taxes of over \$150,000 and an additional of over \$300 million in Federal tax revenues. Its chief import commodities are bananas, fresh fruit and aggregate while top export commodities are rice and chemicals. The port's growth has been staggering in the past decade, becoming one of the fastest growing ports on the Gulf Coast. Port Freeport's economic impact and its future growth is justification for its budding partnership with the Federal Government in this critical improvement project.

DEFENSE SUPPORT OF OUR NATION

Port Freeport is a strategic port in times of National Defense of our Nation. It houses a critically important petroleum oil reserve—Bryan Mound. Its close proximity to State Highways 36 and 288 make it a convenient deployment port for Fort Hood. In these unusual times, it is important to note the importance of our ports

in the defense of our Nation and to address the need to keep our Federal waterways open to deep-draft navigation.

COMMUNITY AND INDUSTRY SUPPORT

This proposed improvement project has wide community and industry support. The safer transit and volume increase capability is an appealing and exciting prospect for the users of Freeport Harbor and Stauffer Channel. The anticipated positive benefit to cost ratio that was indicated from the Corps of Engineers reconnaissance study firmly solidified the Federal interest.

WHAT WE NEED FROM THE SUBCOMMITTEE IN FISCAL YEAR 2008

The administration's budget included the full Corps capability for the continuation of the feasibility study which will be conducted at a 50/50 Federal Government/local sponsor share. This will keep this project on an optimal and most cost-efficient time frame for the Federal Government and the local sponsor. We respectfully request that the full amount in the administration's budget remain in the Senate mark-up. In addition, the Corps capability for maintenance dredging for fiscal year 2008 is \$11.738 million. The administration budget included \$5.735 million. We respectfully request the addition of \$6,002,000 in O&M.

PREPARED STATEMENT OF THE RED RIVER VALLEY ASSOCIATION

Mr. Chairman and members of the committee, I am Wayne Dowd, and pleased to represent the Red River Valley Association as its president. Our organization was founded in 1925 with the express purpose of uniting the citizens of Arkansas, Louisiana, Oklahoma and Texas to develop the land and water resources of the Red River Basin, Enclosure 1.

The resolutions contained herein were adopted by the Association during its 82nd Annual Meeting in Shreveport, Louisiana, on February 22, 2007, and represent the combined concerns of the citizens of the Red River Basin area as they pertain to the goals of the Association. Enclosure 2 represents a summary of the projects and funding levels supported by the Association.

The President's budget included \$4.871 billion for the civil works programs. Even though it is \$138 million more than fiscal year 2007 it is \$458 million less than what Congress appropriated in fiscal year 2007, \$5.329 billion (9 percent reduction). The problem is also how the funds are distributed. A few projects received their full "Corps Capability" to the detriment of many projects that received no funding. The \$4.871 billion level does not come close to the real needs of our Nation. A more realistic funding level to meet the requirements for continuing the existing needs of the civil works program is \$8 billion in fiscal year 2008. The traditional civil works programs remain at the low, unacceptable level as in past years. These projects are the backbone to our Nation's infrastructure for waterways, flood prevention, water supply and ecosystem restoration. We remind you that civil works projects are a true "jobs program" in that up to 85 percent of project funding is contracted to the private sector; 100 percent of the construction, as well as much of the architect and engineering work. Not only do these projects provide jobs, but provide economic development opportunities for our communities to grow and prosper, creating permanent jobs.

There are several policy changes proposed by the administration that we have concerns with.

- Major rehabilitation and endangered species projects were moved from the CG account to the O&M account. When you take out these major rehab projects the O&M proposed budget is actually less than fiscal year 2007. They have "disguised" an actual reduction in O&M project funding.
- They also propose to continue using the Inland Waterway Trust Fund (IWTF) to fund 50 percent of the major rehab projects that were moved to O&M. The IWTF was authorized for CG projects, not O&M. If this is allowed, it will then be easy to recommend that all O&M funding be taken from the IWTF and this can never be allowed to happen.
- Another proposal allocates O&M funding by region and eliminates funding by individual project. We do not accept this concept since you will lose ownership and identity of each project; therefore, losing grass root support. If this was done, due to reprogramming constraints, then reprogramming should be addressed. Major reprogramming issues are with CG projects, not with O&M projects.

We have great concerns over the issue of “earmarks”. Civil Works projects are not earmarks! Civil Works projects go through a process; reconnaissance study, feasibility study, benefit-to-cost ratio test, EIS, peer review, review by agencies, public review and comment, final Chief of Engineer approval, authorization by all of Congress in a WRDA bill and signed by the President. Soon they may be subject to independent review. No other Federal program goes through such a rigorous approval process. Each justified project “stands alone”, are proven to be of national interest and should be funded by project. For most projects there is local sponsor cost sharing during the feasibility study, construction and for O&M. Those who have contributed, in most cases—millions of dollars—to the process, must have the ability to have a say for their projects to get funded. That voice is through their congressional delegation. If Congress provides a lump sum appropriation, to the Corps, for GI, CG and O&M, who will decide what gets funded? The answer is OMB and the administration. Congress will have given up its responsibility to provide a national budget. We believe that earmarks are not in the national interest, but it does not pertain to the civil works program. For civil works it is an issue of priorities and who will determine that, OMB or Congress! We hope Congress keeps their responsibility to set civil works priorities.

We want to express our concern for “fully funded” contracts. In our fiscal year 2007 testimony we addressed this concern stating: “It is possible that the Corps will have a carryover that exceeds \$1 billion.” In fact the Corps had a \$1.4 billion carryover. Our fear became reality and will grow to \$3 billion at the end of fiscal year 2007 if this policy is not changed. Hundreds of projects are neglected that could be funded each year and will drastically increase in cost when actually done. This is a true waste of Federal funds and unfair to local sponsors who also share the increase in cost. Another serious consequence is that it neglects the workload distribution of Corps Districts. Are we prepared to consolidate and close down Districts that do not have the workload to support their current workforce?

The inland waterway tributary rivers continue to face scrutiny on what determines a successful waterway. This has an impact on the operations and maintenance funding a waterway receives. Using criteria that only considers tons, actually moved on the waterway, neglects the main benefit that justified the original waterway project, transportation cost savings. Currently there is no criteria used to consider “water compelled rates” (competition with rail). We know that there are industries not using our waterway because rail rates were reduced, to match the waterborne rates, the same year our waterway became operational. If the operation of our waterway were terminated the rail rates would increase. Many industries have experienced great “national” transportation savings without using the waterway, which is why the project was authorized.

The main problem is that there is no “post-project” evaluation for navigation projects. We support the development of such an evaluation and volunteer the J. Bennett Johnston Waterway and our efforts to develop one. Such an evaluation could be made once every 5 years to insure the waterway continues to meet the determined criteria. We also believe any evaluation adopted must have input from and be validated by the administration, Congress and industry. Too much money has been expended to use an evaluation that is unfair and disregards the true benefits realized from these waterway projects.

I would now like to comment on some of our specific requests for the future economic well being of the citizens residing in the four State Red River Basin regions.

Navigation.—The J. Bennett Johnston Waterway is living up to the expectations of the benefits projected. We are extremely proud of our public ports, municipalities and State agencies that have created this success. This upward “trend” in usage will continue as new industries commence operations. At the Port of Shreveport-Bossier “Steelscape” became operational in April 2006 processing steel, eventually employing 250 people and moving 500,000 tons per year on the Waterway. A major power company, CLECO, is investing \$1 billion in its Rodemacher Plant near Boyce, Louisiana, on the lower Red River and is expected to move over 3 million tons of Coal and “petroleum coke”, by the Waterway, in 2009. These projects are a reality and there are many more customers considering using our Waterway.

You are reminded that the Waterway is not complete; 6 percent remains to be constructed, \$121 million. We appreciate Congress’s appropriation level in fiscal year 2006 of \$13 million; however, the President’s fiscal year 2007 budget drastically cuts that to \$1.5 million, which is unacceptable. There is a capability for \$19.5 million of work, but we realistically request \$12 million to keep the project moving toward completion.

Now that the J. Bennett Johnston Waterway is reliable year round we must address efficiency. Presently a 9-foot draft is authorized for the J. Bennett Johnston Waterway. All waterways below Cairo, Illinois are authorized at 12-foot, to include

the Mississippi River, Atchafalaya River, Arkansas River and Gulf Intracoastal Waterway. A 12-foot channel would allow an additional one-third capacity, per barge, which will greatly increase the efficiency of our Waterway and further reduce transportation rates. This one action would have the greatest, positive impact to reduce rates and increase competition, bringing more industries to use waterborne transportation. We request a 1-year reconnaissance study be funded to evaluate this proposal, at a cost of \$100,000. Fact: approximately 95 percent is already at 12-foot year round.

The feasibility study to continue navigation from Shreveport-Bossier City, Louisiana, into the State of Arkansas will be completed in calendar year 2007. There is great optimism that the study will recommend a favorable project; however, the administration must consider the benefit analysis by modern day criteria, not by 25-year-old standards. Benefit analysis is by administration policy and they can consider externality benefits that impact society today. This region of SW Arkansas and NE Texas continues to suffer major unemployment and this navigation project, although not the total solution will help revitalize the economy. We request funding of \$400,000 to initiate planning, engineering and design, PED.

Flood Prevention.—The recent events in New Orleans have demonstrated what will happen when we ignore our levee systems. We know the Red River levees in Arkansas do not meet Federal standards, which is why we have the authorized project, “Red River Below Denison Dam, TX, AR & LA”. Now is the time to bring these levees up to standards, before a major flood event, which will occur.

We continue to consider flood control a major objective and request you continue funding the levee rehabilitation projects ongoing in Arkansas. Five of 11 levee sections have been completed and brought to Federal standards. Appropriations of \$5 million will construct one more levee section in Lafayette County, AR.

The levees in Louisiana have been incorporated into the Federal system; however, they do not meet current safety standards. These levees do not have a gravel surface roadway, threatening their integrity during times of flooding. It is essential for personnel to traverse the levees during a flood to inspect them for problems. Without the gravel surface the vehicles will cause rutting, which can create conditions for the levees to fail. A gravel surface will insure inspection personnel can check the levees during the saturated conditions of a flood. Funding has been appropriated in the past and approximately 50 miles of levees in the Natchitoches Levee District were completed this year. We request \$2 million to continue this important project in Louisiana.

Bank Stabilization.—One of the most important, continuing programs, on the Red River is bank stabilization in Arkansas and North Louisiana. We must stop the loss of valuable farmland that erodes down the river and interferes with the navigation channel. In addition to the loss of farmland is the threat to public utilities such as roads, electric power lines and bridges; as well as increased dredging cost in the navigable waterway in Louisiana. These bank stabilization projects are compatible with subsequent navigation into Arkansas and we urge that they be continued in those locations designated by the Corps of Engineers to be the areas of highest priority. We appreciated the congressional funding in past fiscal years and request you fund this project at a level of \$6 million in fiscal year 2008.

Water Quality.—Nearly 3,500 tons of natural salts, primarily sodium chloride, enter the upper reaches of the Red River each day, rendering downstream waters unusable for most purposes. The Truscott Brine Lake project, which is located on the South Fork of the Wichita River in King and Knox Counties, Texas became operational in 1987. An independent panel of experts found that the project not only continues to perform beyond design expectations in providing cleaner water, but also has an exceptionally favorable benefit-to-cost ratio.

The Assistant Secretary of the Army (Civil Works), in October 1998, agreed to support a re-evaluation of the Wichita River Basin tributary of the project. The re-evaluation report was completed and the Director of Civil Works signed the Environmental Record of Decision. The plan was found to be economically justified. This year the ASA (CW) directed that construction would not proceed until a local sponsor was found to assume 100 percent of the O&M for the project. This is based on a policy decision, although legal decisions state otherwise. We strongly disagree with this position, since the current local sponsor signed a cooperation agreement that did not include responsibility for O&M, no project documents require this and the project truly benefits four States, which makes it unreasonable to place the O&M burden on one local sponsor. Since 1987 the Federal Government has funded over \$1.5 million per year for O&M. Completion of this project will reclaim Lake Kemp as a usable water source for the City of Wichita Falls, Sheppard AFB and the region. This project will provide improved water quality throughout the four States of the Red River providing the opportunity to use surface water and reduce depend-

ency on ground water. We request appropriations of \$2,500,000 to continue the Wichita River features in Texas.

Over the past year there has been a renewed interest by the Lugart-Altus Irrigation District to evaluate construction of Area VI, of the Chloride Control Project, in Oklahoma. They have obtained the support of many State and Federal legislators, as well as a letter from the Oklahoma Governor in support of a re-evaluation report. We request an appropriation of \$1,625,000 to continue with this effort. Total request for the Chloride Control Project.—\$4,125,000.

Water Supply.—Lake Kemp, just west of Wichita Falls, TX, is a major water supply for the needs of this region. Due to siltation the available storage of water has been impacted. A reallocation study is needed to determine water distribution needs and raising the conservation pool. Total O&M of \$892,000 is requested for fiscal year 2008 (\$210,000 is required for the base annual O&M, \$467,000 for the study and \$215,000 for backlog grouting & dam repair).

Operation & Maintenance.—Full O&M capability levels are not only important for our Waterway project but for all our Corps projects and flood control lakes. The backlog of critical maintenance only becomes worse and more expensive with time. We urge you to appropriate funding to address this serious issue at the expressed full Corps capability.

We are sincerely grateful to you for the past support you have provided our projects. We hope that we can count on you again to fund our needs and complete the projects started that will help us diversify our economy and create the jobs so badly needed by our citizens. We have included a summary of our requests for easy reference, Enclosure 2.

Thank you for the opportunity to present this testimony and project details of the Red River Valley Association on behalf of the industries, organizations, municipalities and citizens we represent throughout the four State Red River Valley region. The Civil Works program directly relates to national security by investing in economic infrastructure. If waterways are closed companies will not relocate to other parts of the country—they will move over seas. If we do not invest now there will be a negative impact on our ability to compete in the world market threatening our national security.

ENCLOSURE 1.—RED RIVER VALLEY ASSOCIATION

The Red River Valley Association is a voluntary group of citizens bonded together to advance the economic development and future well being of the citizens of the four-State Red River Basin area in Arkansas, Louisiana, Oklahoma and Texas.

For the past 81 years, the Association has done notable work in the support and advancement of programs to develop the land and water resources of the Valley to the beneficial use of all the people. To this end, the Red River Valley Association offers its full support and assistance to the various Port Authorities, Chambers of Commerce, Levee and Drainage Districts, Industry, Municipalities and other local governing entities in developing the area along the Red River.

The Resolutions contained herein were adopted by the Association during its 82nd Annual Meeting in Shreveport, Louisiana on February 22, 2007, and represent the combined concerns of the citizens of the Red River Basin area as they pertain to the goals of the Association, specifically:

- Economic and Community Development;
- Environmental Restoration;
- Flood Control;
- Bank Stabilization;
- A Clean Water Supply for Municipal, Industrial and Agricultural Uses;
- Hydroelectric Power Generation;
- Recreation; and,
- Navigation.

The Red River Valley Association is aware of the constraints on the Federal budget, and has kept those constraints in mind as these resolutions were adopted. Therefore, and because of the far-reaching regional and national benefits addressed by the various projects covered in the resolutions, we urge the members of Congress to review the materials contained herein and give serious consideration to funding the projects at the levels requested.

RED RIVER VALLEY ASSOCIATION FISCAL YEAR 2008 APPROPRIATIONS—CIVIL WORKS

[In thousands of dollars]

	Fiscal Year 2006 Approp.	Fiscal Year 2007 Approp.	President Fis- cal Year 2008 Budget	RRVA Fiscal Year 2008 Re- quest
Studies (GI):				
Navigation into SW Arkansas: Feasibility	150			400
Red River Waterway, LA—12' Channel, Recon				100
Bossier Parish, LA	75			300
Cross Lake, LA Water Supply Supplement	99			384
SE Oklahoma Water Resource Study: Feasibility	40			300
SW Arkansas Ecosystem Restoration: Recon Study	100			200
Cypress Valley Watershed, TX				100
Sulphur River Basin, TX	152			1,000
Washita River Basin, OK				250
Mangum Lake, OK				
Wichita River Basin, TX, Watershed Rehab: Recon	50			100
Red River Above Denison Dam, TX & OK: Recon				100
Red River Waterway, Index, AR to Denison Dam				
Mountain Fork River Watershed, OK & AR, Recon				
Construction General (CG):				
Red River Waterway:				
J. Bennett Johnston Waterway, LA	13,000		1,500	12,000
Index to Denison Reach, Bendway Weir Demo (Note.—Need language for full federal funded) ...				
Chloride Control Project, TX & OK	1,500			4,125
Wichita River, TX	1,125			2,500
Area VI, OK	375			1,625
Red River Below Denison Dam; AR & LA:				
AR & LA Levee Rehabilitation	3,000			5,000
Bowie County Levee, TX				
Red River Emergency Bank Protection	3,200			6,000
Big Cypress Valley Watershed, TX: Section 1135	530			500
Palo Duro Creek, Canyon, TX: Section 205				200
Millwood, Grassy Lake, AR: Section 1135	100			350
Little River County/Ogden Levee, AR, PED				300
McKinney Bayou, AR, PED				
Operation and Maintenance (O&M):				
J. Bennett Johnston Waterway, LA	11,804		10,431	14,000
Lake Kemp, TX—Total Need				892
Basic Annual O&M				210
Reallocation Study				467
Dam Repair/Grouting				215
Lake Texoma, TX & OK—Total Need				9,587
Basic Annual O&M				7,087
Suppl. EIS				500
Backlog Maintenance				2,000

NOTE.—Due to Continuing Resolution (CR)—Rules and funding levels for fiscal year 2007 are not known for this submission.

PREPARED STATEMENT OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

FISCAL YEAR 2008 WATER RESOURCES DEVELOPMENT APPROPRIATIONS

PROJECT	REQUEST
MURRIETA CREEK FLOOD CONTROL PROJECT: Construction General	\$13,000,000
HEACOCK AND CACTUS CHANNELS: Special Authorization under WRDA	16,000,000
FUNDING FOR CERTIFICATION OF CORPS LEVEES: Inspection of Completed Works	(¹)
NORCO BLUFFS BANK STABILIZATION PROJECT: Construction General	1,000,000
SAN JACINTO & UPPER SANTA MARGARITA RIVER WATERSHEDS SPECIAL AREA MANAGEMENT PLAN (SAMP):	
General Investigations	532,000
SANTA ANA RIVER—MAINSTEM: Construction General	67,840,000

¹ To be determined.

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT BOARD OF SUPERVISORS RESOLUTION NO. F2007-01 SUPPORTING FEDERAL APPROPRIATIONS FOR FLOOD CONTROL PROJECTS FOR FISCAL YEAR 2008

WHEREAS, the United States House of Representatives Committee on Appropriations, Subcommittee on Energy and Water Development, and the United States Senate Committee on Appropriations, Subcommittee on Energy and Water Development are holding hearings to consider appropriations for Flood Control and Reclamation Projects for fiscal year 2008 and have requested written testimony to be submitted to the committees during March 2007; and

WHEREAS, the Riverside County Flood Control and Water Conservation District supports the continuation of construction efforts on the critical flood control project on Murrieta Creek; the furtherance of construction activities on the Santa Ana River Mainstem project, including Prado Dam; the establishment of Special Legislation addressing the design and construction of the Heacock and Cactus Channels providing flood protection to March Air Reserve Base; the repair and completion of the Norco Bluffs Bank Stabilization Project; the establishment of a National Policy addressing the certification of Corps constructed levees, and the continuation of Corps efforts in completing the Special Area Management Plan for the San Jacinto and Santa Margarita River Watersheds; now, therefore,

BE IT RESOLVED by the Board of Supervisors of the Riverside County Flood Control and Water Conservation District in regular session assembled on February 6, 2007 that they support appropriations by Congress for fiscal year 2008 for the following projects:

U.S. ARMY CORPS OF ENGINEERS

PROJECT	REQUEST
Murrieta Creek Flood Control, Environmental restoration and Recreation Project: Construction—General	\$13,000,000
Heacock and Cactus Channels (MARB): Special Legislation	16,000,000
Norco Bluffs Bank Stabilization Project: Construction—General	1,000,000
Certification of Corps Constructed Levees: National Policy	(¹)
San Jacinto & Upper Santa Margarita River Watersheds (Riverside County): Special Area Management Plan (SAMP)	532,000
Santa Ana River Mainstem: Construction—General	96,500,000

¹ To be determined.

BE IT FURTHER RESOLVED that the General Manager-Chief Engineer is directed to distribute certified copies of this resolution to the Secretary of the Army, Members of the House of Representatives Committee on Appropriations and Subcommittee on Energy and Water Development, the Senate Committee on Appropriations and Subcommittee on Energy and Water Development, and the District's Congressional Delegation—Senators Dianne Feinstein and Barbara Boxer, Congressmen Ken Calvert and Darrell Issa, and Congresswoman Mary Bono.

MURRIETA CREEK FLOOD CONTROL, ENVIRONMENTAL RESTORATION AND RECREATION PROJECT

Murrieta Creek poses a severe flood threat to the cities of Murrieta and Temecula. Overflow flooding from the undersized creek with a tributary watershed area of over 220 square miles has periodically wreaked havoc on the communities—most recently in 1993 when nearly \$20 million in damages was incurred by the public and private sectors. As the area continues to develop, the potential damages (direct and indirect) will only continue to increase. In 1997 the U.S. Army Corps of Engineers initiated studies on the Creek. The final outcome of this endeavor was congressional authorization in 2000 of the \$90 million, multifaceted project known as the Murrieta Creek Flood Control, Environmental Restoration and Recreation Project.

This project is being designed and will be constructed in four distinct phases. Phases 1 and 2 include channel improvements through the city of Temecula. Phase 3 involves the construction of a 250-acre detention basin, including 160 acres of new environmental habitat and over 50 acres of recreational facilities. Phase 4 will include channel improvements through the city of Murrieta. Equestrian, bicycle and hiking trails as well as a continuous vegetated habitat corridor for wildlife are components of the entire 7-mile long project.

The Omnibus Appropriations Bill for fiscal year 2003 provided \$1 million for a new construction start for this critical public safety project and construction activities commenced in the fall of 2003 on Phase 1. Appropriations for fiscal year 2004 and additional funds allocated allowed the Corps to continue construction on Phase

1, which was completed in December 2004. Phase 2 traverses Old Town Temecula, one of the hardest hit areas during the flooding of 1993. The Corps anticipates having a Phase 2 construction contract ready to award in the winter of 2007. The District, therefore, respectfully requests the committee's support of a \$13,000,000 appropriation in fiscal year 2008 to allow the Corps to complete the Design Documentation Report, and initiate construction on Phase 2 of the long awaited Murrieta Creek Flood Control, Environmental Restoration and Recreation Project.

HEACOCK AND CACTUS CHANNELS—PROTECTION OF MARCH AIR RESERVE BASE

Heacock and Cactus Channels are undersized, earthen channels that border the eastern and northern boundary of the March Air Reserve Base (MARB). Substantial vegetation becomes established within both channels and impedes the conveyance of tributary storm flows to an existing outlet located downstream. Storm flows overtop the Cactus Channel and traverse MARB causing major disruption of the Base's operation, including the fueling of airplanes and transport of troops and supplies. The record rainfall of 2004/2005 also caused extensive erosion along Heacock Avenue jeopardizing existing utilities within the road right of way and cutting off access to approximately 700 residences within the city of Moreno Valley.

Under section 205 of the Continuing Authorities Program (CAP), the Corps received \$100,000 in fiscal year 2005 and completed an Initial Appraisal Report which determined the feasibility of proceeding with a project to provide flood protection to this sensitive area. With the \$546,000 received in fiscal year 2006 the Corps completed a Project Management Plan, executed a Feasibility Cost Sharing Agreement and is nearing completion of the Feasibility Study. However, this study found that MARB would receive approximately 85 percent of the benefits from constructing this project making the use of section 205 funds inappropriate. Therefore, the project will require Special Authorization under WRDA to approve and authorize the project and appropriate the \$16,000,000 needed to provide flood protection to the base.

The District requests support from the Committee for Special Authorization under WRDA approving the project and authorizing appropriations of \$16,000,000 to complete the design and construct the project providing this critical military installation flood protection.

CERTIFICATION OF CORPS CONSTRUCTED LEVEES

As part of the Federal Emergency Management Agency's (FEMA) Map Modernization Program, the District, as well as all other agencies, cities and counties in the Nation are being required to provide certification of the reliability of all levee structures providing flood protection to our citizens. Many of these projects were constructed by the U.S. Army Corps of Engineers and in these cases, FEMA is requesting that the certification be provided by the Corps. Certification involves an extensive amount of geotechnical analysis, including field and lab material testing, slope stability and seepage checks, hydrologic and hydraulic verification and other costly and time consuming activities, as well as the review of operation and maintenance records. These projects have an established Federal interest. Therefore, a National Policy needs to be established addressing the need for these federally constructed projects to be certified by the Corps and authorizing the Corps to perform the required analysis. Furthermore, the Corps should also be authorized to provide Federal assistance for design and construction costs associated with any necessary rehabilitation, repair or reconstruction of projects that are found not to meet the CFR 65.10 FEMA criteria. Non-conforming levees put the public at risk and should be a Federal priority. Within our District, there are three Corps constructed levees requiring this Federal certification: Santa Ana River Levees constructed in 1958, Chino Canyon Levee constructed in 1972 and San Jacinto River Levee constructed in 1982.

The District requests support from the committee for the establishment of a National Policy addressing this issue and the authorization and funding needed for the Corps to meet its obligations to the numerous local sponsors of federally constructed levees throughout the country. The Los Angeles District needs an appropriation of \$3,000,000 for fiscal year 2008 under the Inspection of Completed Works—CA Operations and Maintenance Appropriation 3123 to accomplish the needed certification work.

NORCO BLUFFS BANK STABILIZATION PROJECT

The Norco Bluffs Bank Stabilization project consists of a soil cement toe protection structure constructed to the 100-year flood level at the base of the bluff, and a stable earthen buttress fill constructed to the top of the bluff along the Santa Ana

River, in the city of Norco. The bluff stabilization work extends easterly from the Interstate 15 bridge to near Center Avenue. The estimated total cost of the project was approximately \$14 million. The Corps received a total of \$7.2 million in construction funds in the fiscal year 1998, fiscal year 1999 and fiscal year 2000 Federal budgets for the project. Since the available Federal funding fell short of that necessary to construct the entire project at once, the project was broken into two phases and Phase 1 was completed in May 2000. This included a soil cement toe protection structure along the entire length of the project, as well as construction of approximately 1,300 feet of buttress fill in the most critical reach of the bluffs, between Valley View and Corona Avenues. The Phase 2 contract involved the construction of the balance of the buttress fill and construction of most of Phase 2 was completed in December 2003, with the exception of hydroseeding the slopes, which was deferred until the appropriate season to ensure successful establishment of the native vegetation. Unfortunately, the record rainfall of the 2004/2005 season caused damages to the project that must be repaired in order to complete the project.

The District requests support from the committee for a fiscal year 2008 appropriation of \$1,000,000 to complete the repairs, hydroseed the slopes and turn the project over to the District.

SANTA ANA RIVER—MAINSTEM

The Water Resources Development Act of 1986 (Public Law 99-662) authorized the Santa Ana River—All River project that includes improvements and various mitigation features as set forth in the Chief of Engineers' Report to the Secretary of the Army. The Boards of Supervisors of Orange, Riverside and San Bernardino Counties continue to support this critical project as stated in past resolutions to Congress.

For fiscal year 2008, an appropriation of \$67,840,000 is necessary to provide funding for the following activities: \$20,000,000 for Reach 9 of the Santa Ana River immediately downstream of Prado Dam, \$2,840,000 for the Seven Oaks Dam project and \$45,000,000 for Prado Dam.

The District respectfully requests that the committee support an overall \$67,840,000 appropriation of Federal funding for fiscal year 2008 for the Santa Ana River Mainstem Project.

PREPARED STATEMENT OF THE SACRAMENTO AREA FLOOD CONTROL AGENCY

Dear Mr. Chairman and members of the subcommittee: On behalf of the Sacramento Area Flood Control Agency (SAFCA), its member agencies and the millions of people that may be directly or indirectly impacted by floods in Sacramento, we extend our sincere appreciation to the committee for the past consideration and support extended to the ongoing local, State and Federal effort to reduce flood risk in the Capital of California.

According to the U.S. Army Corps of Engineers (Corps), Sacramento's flood risk continues to be the highest of major urban areas in the country. Located at the confluence of the Sacramento and American Rivers, the Sacramento floodplain contains 165,000 homes, over 488,000 residents, 1,300 government facilities including the State Capital, and businesses providing 200,000 jobs. It is the hub of a 6-county regional economy that provides 800,000 jobs for 1.5 million people. A major flood along the American River or the Sacramento River would cripple this economy, cause between \$7.0 billion and \$16.0 billion in direct property damages and likely result in significant loss of life.

The devastating flood of February 1986 revealed that Sacramento's defenses provided less than 100-year flood protection, far less than previously thought. SAFCA was created in 1989 to work with the Corps and the State to improve the Sacramento region's flood protection as rapidly as possible. Much progress has been made since then, with a combined investment of over \$428 million in levee improvements, reservoir operations, and floodplain restoration. Nevertheless, much remains to be done. In collaboration with the Corps and the State, SAFCA is pursuing completion of levee improvements needed to achieve the minimum 100-year level of flood protection, while advancing measures which will lead to better than 200-year flood protection over the next decade.

SAFCA's Federal fiscal year 2008 Federal budget requests are shown in order of priority in Table 1. Consistent with previous years' requests, SAFCA top priority is achieving 100-year level flood protection for the Sacramento area. While this goal has now been achieved for most of the community, work along the tributaries of Morrison Creek needs to move forward at Corps capability to achieve this level of

protection for about 6,000 residential properties (about 16,000 people). Therefore the South Sacramento Streams Group Project remains the top priority.

The American River Common Features Project needs to continue at capability as well, to complete project elements needed to safely convey 160,000 cfs in the Lower American River.

The Folsom Dam Joint Federal Project relies on the authority of the Folsom Dam Modifications Project and Reclamation's Dam Safety Program for the construction of an auxiliary spillway on the south abutment of the dam. This is the cornerstone of Sacramento's 200-year flood program, for which planning and design need to proceed at Corps capability levels. SAFCA supports the continuing planning for up to a 3.5 foot raise of Folsom Dam embankments, as well as construction of the Folsom Dam Bridge through fiscal year 2008.

TABLE 1.—FEDERAL FISCAL YEAR 2008 APPROPRIATIONS REQUESTS

(In millions of dollars)

PROJECT	Proposed 2008 Federal Budget Feb 2007	SAFCA 2008 Re- quest Feb 2007	Requested In- crease
South Sacramento Streams Group: Construct levee and channel improvements to prevent flooding in south Sacramento where floodwaters from four creeks threaten 100,000 residents	8.000	11.000	3.000
American River Common Features: Raise and reinforce levees to assure 100-year flood protection for the urban Sacramento area from the American and Sacramento Rivers	12.000	34.800	22.800
Folsom Dam Outlet Modifications: Enlarge and retrofit Folsom Dam outlet gates to more efficiently manage flood storage in Folsom Reservoir	6.000	6.000	.....
American River Plan (Folsom Dam Mini-Raise): Continue design of the Folsom Mini-Raise	4.500	5.000	1.500
American River Plan (Folsom Dam Mini-Raise, Bridge Component): Construct permanent bridge to replace the Folsom Dam Road	14.000	46.700	31.700
Natomas Phase 1 Reimbursement: Previously appropriated funds, not yet received by SAFCA for federally authorized and completed work on the North Area Local Project .....	.....	4.500	4.500
Sacramento River Bank Protection: Repair critical erosion sites and mitigate for impacts throughout the Sacramento River Flood Control System, including the urban Sacramento area	21.528	64.800	43.272
TOTAL	66.028	172.800	106.772

Updates on progress on each of the referenced projects is provided in the following paragraphs.

SOUTH SACRAMENTO COUNTY STREAMS GROUP PROJECT

This project will provide a minimum of 100-year flood protection from the Morrison Stream Group, including Morrison Creek, Florin Creek, Elder Creek, and Union House Creek when completed. This project protects the existing community, as well as helps facilitate the city's economic development goals for the South Sacramento region. SAFCA, the State, and the Corps are working together to expedite construction of this project. Levee improvements around the Regional Wastewater Treatment Plant were completed in 1996. The Morrison Creek north levee from the Sacramento River east to the Union Pacific Railroad, and north to Brookfield Drive were completed in 2005–2006. In 2007 levee improvements will be constructed on Morrison Creek and tributaries as far east as Franklin Boulevard. SAFCA's goal is to implement Phase 2 levee improvements eastward to Highway 99 by 2012 to provide 100-year flood protection from Morrison Creek flooding.

AMERICAN RIVER COMMON FEATURES PROJECT

American River Levees

Construction of the Mayhew levee improvements has been a high priority and construction is planned for late summer 2007. Additional levee improvements to address gaps in the slurry walls along the American River levees on both sides of the river, and to provide levee height parity are expected to go to construction in 2008. This work will go a long way towards meeting the goal of safely conveying 160,000

cubic feet per second through Sacramento, which will be required to provide 200-year flood protection on the American River.

Natomas General Re-evaluation Report (GRR)

The Corps is studying alternatives for levee improvements needed to provide the Natomas basin with 200-year flood protection. The Corps study will proceed concurrently with SAFCA's construction of those improvements. The State Reclamation Board has requested section 104 Credit for levee improvements constructed by SAFCA, with the goal of obtaining Federal reimbursement for State and SAFCA funding for construction of these improvements over the next several years. Funding for the Corps study effort is needed to keep the Corps study on schedule for completion of the GRR in 2009, thus paving the way for Congressional reimbursement for State and SAFCA expenditures in 2010 and beyond.

Pocket General Re-Evaluation Report (GRR)

SAFCA has initiated reconnaissance planning for measures which may be needed to provide 200-year flood protection for the Sacramento River East levee south of the American River. SAFCA will request that the Corps initiate a second GRR under the American River Common Features Authority, with the goal of expediting the alternative formulation process for any levee improvements which may be needed in this reach.

FOLSOM DAM MODIFICATIONS: JOINT FEDERAL PROJECT

This project will include construction of a new auxiliary spillway on the east abutment to Folsom Dam. This new spillway will both provide sufficient release capacity to allow Folsom Dam to control the 200-year flood, as well as to safely pass a Probable Maximum Flood without overtopping the dam. Since June of 2005 the Corps, Reclamation, the State of California, and SAFCA have rapidly advanced planning for this project, including a joint EIR/EIS, a Corps Post Authorization Change (PAC) Report by the Corps, and a Reclamation Dam Safety Modifications Report. All these reports will be completed by late Spring 2007, setting the stage for excavation to begin on the auxiliary spillway and related Reclamation dam safety work in October 2007. The project will be jointly constructed by the Corps and Reclamation, with the State and SAFCA serving as non-Federal cost sharing partners. The Corps will continue to design their portion of the JFP with construction starting in following years.

FOLSOM DAM RAISE PROJECT

Based on current Corps design studies, a raise of up to 3.5 feet of the dikes and wingdams around Folsom Lake may be constructed under this project authority in conjunction with the Folsom Dam Modifications project. The Folsom Dam Bridge, an authorized part of this project, is currently under construction by the Corps, with a planned opening for traffic by the end of 2008. Ecosystem restoration is also an authorized component of this project, focusing on improving salmonid habitat in the Lower American River through improved temperature control for Folsom Dam releases.

NATOMAS PHASE I REIMBURSEMENT

SAFCA is seeking reimbursement for work completed on Natomas levees under Federal authority. A total of \$21 million in reimbursements have been authorized and appropriated, of which \$16.5 million has been paid to SAFCA, leaving about \$4.5 million which has been appropriated but not reimbursed to SAFCA. SAFCA needs the \$4.5 million to help fund SAFCA's flood control improvement efforts.

SACRAMENTO RIVER BANK PROTECTION PROJECT

During the Construction season of 2006, an impressive amount of bank protection was completed along the Sacramento River including nine critical erosion sites along the Sacramento River east levee protecting Sacramento. The work has continued in 2007, during which another three sites were under construction. This program, executed by the Corps in close collaboration with the State, has been very effective in rapidly addressing serious erosion defects in levees protecting the Sacramento area and in other parts of the central valley. Additional funding, as well as new implementation authority, will be needed to continue repairs of critical erosion issues within the river system.

PREPARED STATEMENT OF THE NATIONAL CORN GROWERS ASSOCIATION

The National Corn Growers Association (NCGA) appreciates the opportunity to share with the subcommittee our energy and water development appropriations priorities for fiscal year 2008. In general, our appropriations priorities include an overall increase in U.S. Army Corps of Engineers' funding to address the needs of our failing inland waterways system; \$24 million for pre-construction engineering and design (PED) for the project entitled "UMR-IWW System Navigation Study, IL, IA, MN, MO, & WI" (Authority: section 216, Flood Control Act of 1970 (Public Law 91-612)); and continued support for the Department of Energy's Biomass Technologies Program.

NCGA represents nearly 33,000 corn farmers from 46 States. NCGA also represents more than 300,000 farmers who contribute to corn check off programs and 26 affiliated State corn organizations across our country, working together to create new opportunities and markets for corn growers.

America's corn producers continue to make a significant and important contribution to our Nation's economy. Over the last 5 years, the Nation's corn crop has averaged 10.3 billion bushels resulting in an annual average farm gate value of almost \$22 billion. The relatively stable production over the past 10 years, made possible by innovation in production practices and technological advances, has helped to ensure ample supplies of corn for livestock, an expanding ethanol industry, new bio-based products and a host of other uses in the corn industry.

Key to our success is reliable, cost-effective and efficient transportation—whether by barge, truck or rail. Competition among these modes of transportation helps farmers receive their farm inputs, meet their customers' demand for timely delivery of products and successfully compete with foreign producers. Without a competitive transportation system, the promise of expanded trade and commercial growth is empty, job opportunities are lost, and we will be unprepared for the global challenges of this new century.

U.S. ARMY CORPS OF ENGINEERS

Our country's inland navigation system plays a critical role in our Nation's economy, moving more than a billion tons of domestic commerce valued at more than \$300 billion. Each year, more than 1 billion bushels of grain (over 60 percent of all grain exports) move to export markets via the inland waterways system. Inland waterways relieve congestion on our already over-crowded highways and railways that run through cities. One jumbo barge has the same capacity as 58 trucks or 15 rail cars. A typical 15-barge tow on our Nation's rivers is equivalent to 870 trucks.

Additionally, navigation offers transportation with unparalleled environmental benefits. Barges operate at 10 percent of the cost of trucks and 40 percent of the cost of trains, while releasing 20 times less nitrous oxide, 9 times less carbon monoxide, 7 times less hydrocarbons, and burning 10 times less high-price fuel.

Unfortunately, investment in the inland waterways system has not kept pace with its needs and is deteriorating. Funding (in constant dollars) for operations and maintenance (O&M) on America's inland navigation system has remained flat for more than two decades. During this period, an increasing amount of routine maintenance on waterways infrastructure has been deferred. This deferred maintenance has become unfunded maintenance, and the aging waterways infrastructure, combined with the growing O&M backlog, has created today's average of 30 unscheduled lock shutdowns per year.

Over the past 5 years the U.S. Army Corps of Engineers reported more than 150 emergency lock closures on America's inland navigation system. Several high-profile closures have raised reliability concerns among shippers, carriers, the U.S. Army Corps of Engineers, and ultimately consumers who pay increased costs for expensive transportation delays.

Tight O&M funding and the resultant "fix-as-fail" policy have led to a self-defeating cycle where routine maintenance dollars are now needed for emergency repairs. As critical maintenance needs grow, they become candidates for major rehabilitation—a trend that is not good for the waterways industry or for the Nation.

NCGA is appreciative of the successful efforts made by this subcommittee in recent years to increase the budget for the U.S. Army Corps of Engineers. NCGA strongly supports continuing this trend with a significant increase over last year's funding levels to address the critically needed repairs and delayed construction schedules facing the Corps. It's important to get our inland waterways infrastructure back on track so we can meet the ever-increasing demands of the global marketplace.

PRE-CONSTRUCTION ENGINEERING AND DESIGN

The Upper Mississippi River and Illinois Waterway's infrastructure was built in the 1930's with a life expectancy of 50 years. As a result, the infrastructure is approaching 80 years of age, is undersized for efficient passage of today's tows, and is deteriorating from a lack of investment in both operation and maintenance and necessary capital improvements to rehabilitate these antique structures. As with our highways and interchanges, the purpose of modernization on the Upper Mississippi and Illinois Rivers is to make the entire system more efficient.

NCGA supports funding pre-construction engineering and design as a means to accelerate the precursor to construction of 7 new 1,200 foot locks on the Upper Mississippi River and Illinois Waterway in anticipation of authorization through the Water Resources Development Act. Specifically, NCGA requests \$24 million in PED funding for Locks 20, 21, 22, 24, and 25 on the Upper Mississippi and the LaGrange and Peoria locks on the Illinois Waterway (Project: "UMR-IWW System Navigation Study, IL, IA, MN, MO, & WI" Authority: section 216, Flood Control Act of 1970 (Public Law 91-612)).

The PED program is overseen by the Navigation & Ecosystem Sustainability Program (NESP), formed with the conclusion of the navigation study. NESP continues the research and monitoring recommended under the dual purpose river plan outlined in the Corps of Engineers' November 2004 Chief's Report.

In previous years, PED funding was used for preparations of a re-evaluation report and detailed planning and design activities including 8 projects for navigation efficiency and 19 projects for ecosystem restoration. Projects included lock design, fish passage studies, detailed planning and design for mooring cells and switch boat implementation and detailed planning for ecosystem restoration projects including island building, backwater restoration, side channel restoration, wing dam alteration, island-shoreline protection and dam embankment lowering.

We strongly encourage the committee to support continued PED funding as part of an initial process to modernize our aging and deteriorating infrastructure and for much needed ecosystem restoration for the Upper Mississippi and Illinois Rivers.

BIOMASS TECHNOLOGIES PROGRAM

The United States needs to displace imported petroleum with ethanol. Corn grain ethanol is the only economically viable solution over the next decade and is one of the leading ways to start weaning the United States from imported oil. Using starch from corn grain to produce ethanol provides farmers with higher profit margins even while fuel customers pay lower prices. Over the next decade, corn grain can meet all of the growth in ethanol demand and still meet growth in the livestock feed, human food and export sectors.

The current Federal biomass technologies program is focused on long-term cellulose research. Cellulose research will not have any meaningful economic impact for a decade or more. A successful research and development (R&D) portfolio always balances near, mid and long-term goals, and biomass research should use a similar strategy.

In the near term, R&D investments in corn grain ethanol production technology could have a strongly positive economic impact while immediately decreasing dependence on imported oil. Examples of R&D investment opportunities include improving production and utilization of animal feed (DDGS), co-production of biobased chemicals, utilization of corn kernel fiber, and decreasing natural gas use in ethanol plants. Sufficient supply of affordable ethanol will ensure the markets and infrastructure will be poised for the larger impacts coming in the mid to long-term.

NCGA recommends the committee commit at least 25 percent of the fiscal year 2008 allocation for the biomass technologies program towards near-term research that enables corn grain.

Thank you for the support and assistance you have provided to corn growers over the years.

 PREPARED STATEMENT OF THE CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION

We respectfully request fiscal year 2008 appropriation of funds for two priority watershed restoration and agricultural water supply protection projects in Oregon and Washington, the Umatilla Basin Water Supply Project (previously funded under the Umatilla Basin Project Phase III, OR) and the Walla Walla General Investigation Stream Flow Restoration Feasibility Study (previously funded under the Walla Walla River Watershed, OR & WA).

- For the Umatilla Basin Water Supply Project, Oregon, we request an appropriation of \$1 million in the Bureau of Reclamation, Pacific Northwest Region, Water and Related Resources budget. This request will build upon the \$450,000 committed by the Bureau of Reclamation to the Project in fiscal year 2007.
- For the Walla Walla River Watershed, Oregon and Washington, we request an appropriation of \$650,000 in the U.S. Army Corps of Engineers, Portland Division, Walla Walla District, General Investigations budget. This project is also known as Walla Walla River Basin Feasibility Report/Environmental Impact Statement.

Both the Umatilla Basin Water Supply Project and the Walla Walla General Investigation Stream Flow Restoration Feasibility Study are ongoing projects and have had administration and/or congressional line item funding in past fiscal years.

UMATILLA RIVER BASIN, OREGON WATER SUPPLY PROJECT

By letter dated March 19, 2007, the Office of the Secretary of Interior responded favorably to the formal requests of the Washington and Oregon delegations and of the Confederated Umatilla Tribes, Westland Irrigation District and Governor Theodore Kulongoski to initiate Umatilla Basin water development projects and concurrent settlement of the Tribe's reserved water rights. Counselor to the Secretary, L. Michael Bogert, wrote "I will ask the Secretary's Indian Water Rights Office to appoint an Assessment Team . . ." and "I will also ask the Bureau of Reclamation to move forward with a concurrent appraisal level study of water supply options, including a full Phase III exchange . . . to help resolve the Tribe's water rights claims."

The Bureau of Reclamation, subsequent to issuance of the March 19 letter from Counselor Bogert, has committed \$450,000 to fiscal year 2007 work on the Umatilla Basin water supply appraisal study.

The Umatilla Basin Water Supply Project is authorized by the Reclamation Feasibility Studies Act of 1966, 80 Stat. 707, Public Law 89-561 (Sept. 7, 1966).

The fiscal year 2008 request of \$1 million to the U.S. Bureau of Reclamation will follow up the \$450,000 fiscal year 2007 work and should complete the majority of the estimated 2-year appraisal level study. It is anticipated that the full appraisal study project will be completed in 2009 in order to inform the concurrent Interior Department Indian Water Rights Assessment Team's work products. In 2009, Interior should have a clear project or suite of projects necessary to satisfy water rights of the Confederated Umatilla Tribes on the Umatilla Indian Reservation and in the Umatilla River.

This fiscal year 2008 request follows on the work of the Bureau of Reclamation, authorized by the Umatilla Basin Project Act of 1988 (Public Law 100-557; 102 Stat. 2782 Title II), to construct and operate the Phase I Exchange with West Extension Irrigation District and the Phase II Exchange with Hermiston and Stanfield Irrigation Districts. Heralded as one of the most successful stream flow restoration and salmon recovery projects in the Columbia River Basin, the Umatilla Basin Project resulted in partially restored stream flows in the Umatilla River and successful reintroduction of spring Chinook, fall Chinook and Coho salmon. After nearly a century of dry river bed in summer months and extinction of all salmon stocks, there has been an Indian and non-Indian salmon fishery nearly every year in the Umatilla River since the project was completed in the mid-1990s.

Completion of the Water Supply Study and the concurrent Tribal Water Rights Assessment is supported and endorsed by the Honorable Governor Ted Kulongoski and by local irrigation districts including specifically Westland Irrigation District, the Umatilla County Commission, and local municipalities including specifically the City of Irrigon.

WALLA WALLA BASIN, OREGON AND WASHINGTON, GI FEASIBILITY STUDY

In its sixth and final full year prior to completion, the U.S. Army Corps of Engineers' feasibility study will select the project necessary to restore stream flows in the Walla Walla River. Drained nearly dry during summer months by irrigation in Oregon and Washington, the Walla Walla River is within the aboriginal lands of the Confederated Umatilla Tribes and the complete loss of salmon violates the agreement by the United States in the Treaty of 1855 to protect these fish.

Approximately \$2.6 million of Federal funds have either been budgeted or appropriated through fiscal year 2007 (this includes an estimate \$300,000 for fiscal year 2007 based upon continuing resolution uncertainties).

The Feasibility Study Project is authorized by the Senate Committee on Public Works, July 27, 1962 (Columbia River and Tributaries), 87th Congress, House Docu-

ment No. 403 and initiated as a result of a positive Reconnaissance Report for the Walla Walla River Watershed (1997) under a General Investigation study.

The Confederated Tribes of the Umatilla Indian Reservation is the formal sponsor of the Corps of Engineers Feasibility Study and has provided over \$3.1 million in in-kind contributions. Additionally, the State of Washington Department of Ecology has provided \$400,000 to the Feasibility Study.

Support for the completion of the Feasibility Study and moving to construction of the project is strong and diverse and includes the Honorable Governor of Washington Christine Gregoire, the Honorable Governor of Oregon Ted Kulongoski, the Walla Walla Watershed Alliance, the Walla Walla Basin Watershed Council, basin irrigation districts, local State legislators and many local and regional advocacy groups.

In closing, the CTUIR appreciates the opportunity to provide this testimony in support of adding funds for the ongoing projects, Umatilla River Basin Water Supply Project, Bureau of Reclamation, and for the Army Corps of Engineers Walla Walla River Basin Watershed Restoration Feasibility Study. Both projects are critically important to protecting existing agricultural economies, completing future water supply development and concurrently restoring stream flows and recovering threatened salmon and other Columbia River Basin fish stocks.

Thank you.

PREPARED STATEMENT OF THE NATURE CONSERVANCY

Mr. Chairman and members of the Subcommittee, I appreciate the opportunity to present The Nature Conservancy's recommendations for the Army Corps of Engineers' fiscal year 2008 appropriations. We understand that the Subcommittee's ability to fund programs within its jurisdiction is limited by the tight budget constraints but appreciate your consideration of these important programs.

The Nature Conservancy is an international nonprofit organization dedicated to the conservation of biodiversity. Our mission is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. Our on-the-ground conservation work is carried out in all 50 states and in 30 countries with the support of approximately one million members. To date, we have helped conserve more than 117 million acres and 5,000 river miles around the world. The Conservancy owns and manages approximately 1,400 preserves throughout the United States—the world's largest private system of nature sanctuaries. However, we recognize that our mission cannot be achieved by protected areas alone; thus, our projects increasingly seek to accommodate compatible human uses, especially in the developing world, to address sustained human well-being.

The Conservancy has several concerns with the new starts/project advancement ban in the fiscal year 2006 Energy and Water Appropriations bill. As the largest nonfederal sponsor of ecosystem restoration projects (by number of projects, not total funding), this policy has significantly impacted the Conservancy's ecosystem restoration efforts. The ban has halted a number of restoration projects that are widely supported by local communities, that are important to biodiversity, and that have received significant prior investment of both federal and nonfederal resources. The Conservancy urges the Subcommittee not to renew the ban on new starts/project advancement.

The Conservancy urges the Subcommittee to support the following appropriation levels in the fiscal year 2008 Energy and Water Development Appropriation bill:

Construction General Priorities

Section 1135: Project Modification for the Improvement of the Environment.—The Section 1135 Program authorizes the Army Corps of Engineers (Corps) to restore areas damaged by existing Corps projects. This program continues to be in extremely high demand with needs far greater than the \$30 million appropriated in fiscal year 2006. While we recognize that the fiscal year 2006 appropriations were in excess of the authorized levels, funding shortfalls continue to hold up many important projects. The Conservancy is the nonfederal cost share partner on five ecologically significant Section 1135 projects including Spunky Bottoms (IL), a floodplain restoration/reconnection project on the Illinois River that needs \$150,000 to continue planning; Chain Bridge Flats (DC), a floodplain restoration on the Potomac River that needs \$210,000 to initiate the reconnaissance phase; Jim Woodruff Lock and Dam Fish Passage (FL), a river habitat restoration on the Apalachicola River that needs \$100,000 to initiate the reconnaissance phase; and Village of Oyster Ecosystem Restoration (VA), a restoration of intertidal wetlands and upland habitat

that needs \$99,000 to continue the feasibility study. In order to reduce the funding backlog, the Conservancy strongly encourages full funding of \$25 million for Section 1135 in fiscal year 2008, an increase over the President's \$11.2 million request.

Section 206: Aquatic Ecosystem Restoration.—Section 206 is a newer program that authorizes the Corps to restore aquatic habitat regardless of past activities. This is another popular restoration program with demand far exceeding both the authorized level and the fiscal year 2006 appropriation. The Conservancy is the nonfederal cost-share partner on four Section 206 projects that restore important habitats, including Camp Creek (OR), a headwaters stream restoration project that needs \$525,000 to continue the feasibility study; Bootheel Creek (FL), a wet flatwood and depression marsh habitat restoration project that needs \$85,000 to initiate the planning and design analysis phase; and Emiquon Preserve (IL), a floodplain reconnection and restoration project that needs \$300,000 to continue planning. To reduce the funding backlog, the Conservancy strongly encourages \$25 million for Section 206 in fiscal year 2008, an increase over the President's \$11.3 million request.

Upper Mississippi River System Environmental Management Program.—The Environmental Management Program (EMP) is an important Corps program that restores habitat and conducts long-term resource monitoring of the Upper Mississippi and Illinois Rivers. EMP is a unique federal-state partnership involving five states (IL, IA, MN, MO and WI). EMP was reauthorized in WRDA 1999 with an increased authorization of \$33.2 million. The Conservancy supports full funding of \$33.2 million for fiscal year 2008, an increase over the President's \$23.5 million request.

Estuary Habitat Restoration Program.—The Estuary Restoration Act was approved by Congress in 2000 to recognize the importance of a national strategic plan and multi-level partnerships to address problems plaguing our nation's estuaries. With a goal of restoring a million acres of estuary habitat by 2010 through the Estuary Habitat Restoration Program, the Act encourages coordination among all levels of government, and engages the strengths of the public, nonprofit and private sectors. The Conservancy supports the President's \$5.0 million request for the Estuary Habitat Restoration Program to promote restoration projects that benefit fish, shellfish and wildlife; improve surface and groundwater resources; provide flood control; and enhance recreational opportunities.

Missouri River Fish and Wildlife Recovery.—The Missouri River contains more than 500 species of mussels, fish, amphibians, reptiles, birds and mammals, five of which are either listed or candidates for listing under the Endangered Species Act. The Corps has completed 30 projects along the river in the lower four states (IA, KS, MO and NE) resulting in more than 40,000 acres of restored aquatic and floodplain habitat. This program enhances these restorations and complements protection and restoration efforts by many federal agencies. The Conservancy supports \$85.0 million in fiscal year 2008 and pending passage of the Water Resources Development Act, supports using funding basin-wide, including \$15 million for the Yellowstone River Intake project in Montana.

South Florida Everglades Ecosystem Restoration Program.—The Everglades are home to a profusion of birds and wildlife with at least 347 bird species recorded in Everglades National Park alone. For the last sixty years, the Corps has built projects that shunted water away from the Everglades. These flood control projects and agricultural and urban development have degraded the wetlands ecosystem. Restoration of this globally significant region is a priority for the Conservancy. The Conservancy requests \$249.1 million in the South Florida Everglades Ecosystem Restoration Program in fiscal year 2008, an increase over the President's \$162.4 million request. This request includes funds for five programs: Modified Water Deliveries to Everglades National Park (\$35 million), Critical Projects Construction (\$8.3 million), Kissimmee River Restoration Construction (\$50 million), Comprehensive Everglades Restoration Plan (CERP) Project Construction (\$35 million), Central & Southern Florida Project (\$120.8 million).

Puget Sound and Adjacent Waters.—Assessments of Puget Sound's nearshore habitat indicate that the ecological health of the ecosystem is in steep decline. As urban areas continue to expand, an extraordinary heritage of native species and ecosystems is at risk. The Puget Sound and Adjacent Waters Program provides funding for early action projects to restore the Puget Sound and its watershed. The Conservancy requests \$5.0 million for Puget Sound and Adjacent Waters in fiscal year 2008. Identification of these early action projects is informed by the Puget Sound Nearshore Ecosystem Restoration General Investigation, for which the Conservancy requests \$1.9 million in fiscal year 2008, an increase over the President's \$400,000 request.

General Investigation Priorities

Penobscot River Restoration.—This project involves the purchase and decommissioning of three dams on the Penobscot River, New England's second largest river. Two dams will be removed and a state-of-the-art fish bypass will be constructed around the third. Restoration of massive runs of migratory fish in the Penobscot River will expand recreational fishing opportunities and tourism resources, will provide culturally significant fishing resources to the Penobscot Indian Nation, and will greatly enhance recovery of Atlantic salmon and other ESA-listed species. The Conservancy supports \$450,000 in fiscal year 2008. This study is not included in the President's Budget.

Hamilton City Flood Damage Reduction and Ecosystem Restoration.—This project will increase flood protection for Hamilton City, CA and surrounding agricultural lands and restore over 1,500 acres of riparian habitat. Currently, the town is only marginally protected by a degraded private levee. The PED phase for this project is nearly complete. Pending fiscal year 2007 funding and passage of WRDA, the project will be ready to begin construction next year. The Conservancy supports \$1.6 million in fiscal year 2008 to complete PED and \$7.5 million to begin construction. This study is not included in the President's Budget.

Savannah Basin Comprehensive Water Resources Study—Phase II.—The Savannah River basin is experiencing tremendous growth, increasing demands on this limited water resource. Phase I of the study evaluated water management in the reservoirs based on current operations and indicated that future needs may not be met under current management practices. Phase II evaluates implementation of a new set of rules (e.g. hydropower contracts, recreation needs, ecological flows) that could meet future demands while protecting essential river habitat. Without Phase II, changes in dam operations are limited by outdated and unsustainable management rules. The Conservancy supports \$250,000 in fiscal year 2008. This study is not included in the President's Budget.

Willamette River Floodplain Study.—This project contributes to long-term restoration of floodplain habitat, an important step toward the recovery of several ESA-listed threatened fish species. The restoration goals include increasing floodplain connectivity and replanting riparian forests, which will contribute to the Corps' ability to reduce river temperatures and meet their obligations under the Clean Water Act. The Conservancy supports \$436,000 in fiscal year 2008. This study is not included in the President's Budget.

Lower Mississippi River Resource Assessment.—This study will assess management, habitat and public access issues in the Lower Mississippi River Valley (LMV). Restoring and actively managing the natural resources of the LMV will contribute to the recovery of nine ESA-listed species without impacting navigation or flood control. Restored functionality of wetlands will also help attenuate floods and capture river sediment, reducing stress on the flood control system and the amount of nutrients transported down river to the Gulf of Mexico. The Conservancy supports \$500,000 in fiscal year 2008. This study is not included in the President's Budget.

Connecticut River Watershed Study.—This project will restore 410 miles of river flow and thousands of acres of associated riparian, aquatic and floodplain natural communities in the Connecticut River Basin. The basin is a priority landscape for the Conservancy due to the high-quality tributary systems, unique natural communities and multitude of ESA-listed species. The study identifies dam management modifications for environmental benefits while maintaining beneficial human uses such as water supply, flood control and hydropower generation. The Conservancy supports \$450,000 in fiscal year 2008. This study is not included in the President's Budget.

Yellowstone River Corridor Comprehensive Study.—This study is assessing cumulative effects to the Yellowstone system and will develop conservation-based management practices for the river main stem. As the longest free-flowing river in the lower United States, the Yellowstone is a rare model of the structure and function of large western rivers. It supports a wide variety of fish, including the ESA-listed pallid sturgeon. The Conservancy supports \$1 million in fiscal year 2008, an increase over the President's \$200,000 request.

Thames River Basin.—The Thames River Basin is the second largest freshwater contributor to Long Island Sound and provides critical connective habitat between freshwater and marine systems. This study will evaluate options to restore more natural flows and improve watershed management to reduce nutrient inputs, as well as options for ecological restoration throughout the Basin. The Conservancy supports \$450,000 in fiscal year 2008. This study is not included in the President's Budget.

Operations and Maintenance Priority

Bill Williams River—Alamo Dam.—Due to the historic loss of woodland habitat in the Southwest and limited restoration ability along other portions of the Colorado River, the Bill Williams River corridor provides critical opportunities for both conserving and restoring habitat. This plus-up request will provide additional baseline information about the geomorphology and sediment transport characteristics of the Bill Williams River and continue critical long-term hydrologic and biological monitoring in order to construct a programmatic plan to support adaptive management of the river system. The Conservancy supports \$250,000 plus-up over the President's Operations and Maintenance request of \$1,783,000, for a total of \$2,033,000 in fiscal year 2008.

Thank you for the opportunity to present The Nature Conservancy's comments on the Energy and Water Appropriations bill. We recognize that you receive many worthy requests for funding each year and appreciate your consideration of these requests and the generous support you have shown for these and other conservation programs in the past. If you have any further questions, please do not hesitate to contact me or Jason Albritton, Policy Associate (703/841-4105).

 PREPARED STATEMENTS OF THE SANTA CLARA VALLEY WATER DISTRICT

STATEMENT OF SUPPORT—COYOTE CREEK WATERSHED STUDY

Background.—Coyote Creek drains Santa Clara County's largest watershed, an area of more than 320 square miles encompassing most of the eastern foothills, the city of Milpitas, and portions of the cities of San Jose and Morgan Hill. It flows northward from Anderson Reservoir through more than 40 miles of rural and heavily urbanized areas and empties into south San Francisco Bay.

Prior to construction of Coyote and Anderson Reservoirs, flooding occurred in 1903, 1906, 1909, 1911, 1917, 1922, 1923, 1926, 1927, 1930 and 1931. Since 1950, the operation of the reservoirs has reduced the magnitude of flooding, although flooding is still a threat and did cause damages in 1982, 1983, 1986, 1995, and 1997. Significant areas of older homes in downtown San Jose and some major transportation corridors remain susceptible to extensive flooding. The federally-supported lower Coyote Creek Project (San Francisco Bay to Montague Expressway), which was completed in 1996, protected homes and businesses from storms which generated record runoff in the northern parts of San Jose and Milpitas.

The proposed Reconnaissance Study would evaluate the reaches upstream of the completed Federal flood protection works on lower Coyote Creek.

Objective of Study.—The objectives of the Reconnaissance Study are to investigate flood damages within the Coyote Creek Watershed; to identify potential alternatives for alleviating those damages which also minimize impacts on fishery and wildlife resources, provide opportunities for ecosystem restoration, provide for recreational opportunities; and to determine whether there is a Federal interest to proceed into the Feasibility Study Phase.

Study Authorization.—In May 2002, the House of Representatives Committee on Transportation and Infrastructure passed a resolution directing the Corps to “. . . review the report of the Chief of Engineers on Coyote and Berryessa Creeks . . . and other pertinent reports, to determine whether modifications of the recommendations contained therein are advisable in the interest of flood damage reduction, environmental restoration and protection, water conservation and supply, recreation, and other allied purposes . . .”

Fiscal Year 2006 Administration Budget Request and Funding.—The Coyote Watershed Study was one of only three “new start” studies proposed for funding nationwide in the administration's fiscal year 2006 budget request. Congress did not include funding for the study in the final fiscal year 2006 appropriations bill.

Fiscal Year 2007 Funding.—An appropriation add-on of \$100,000 was requested in fiscal year 2007, and \$100,000 was included in the Senate Appropriation bill. No funds were appropriated in the fiscal year 2007 Corps Work Plan.

Fiscal Year 2008 Funding Recommendation.—It is requested that the Congressional Committee support an appropriation add-on of \$100,000 to initiate a multi-purpose Reconnaissance Study within the Coyote Creek Watershed.

 STATEMENT OF SUPPORT—COYOTE/BERRYESSA CREEK PROJECT, BERRYESSA CREEK PROJECT ELEMENT

Background.—The Berryessa Creek Watershed is located in northeast Santa Clara County, California, near the southern end of the San Francisco Bay. A major

tributary of Coyote Creek, Berryessa Creek drains 22 square miles in the city of Milpitas and a portion of San Jose.

On average, Berryessa Creek floods once every four years. The most recent flood in 1998 resulted in significant damage to homes and automobiles. The proposed project on Berryessa Creek, from Calaveras Boulevard to upstream of Old Piedmont Road, will protect portions of the cities of San Jose and Milpitas. The flood plain is largely urbanized with a mix of residential and commercial development. Based on the U.S. Army Corps of Engineers (Corps) 2005 report, a 1 percent or 100-year flood could potentially result in damages exceeding \$179 million. Benefit-to-cost ratios for the 6 project alternatives being evaluated range from 2:1 to 7.3:1.

Study Synopsis.—In January 1981, the Santa Clara Valley Water District (District) applied for Federal assistance for flood protection projects under section 205 of the 1948 Flood Control Act. The Water Resources Development Act of 1990 authorized construction on the Berryessa Creek Flood Protection Project as part of a combined Coyote/Berryessa Creek Project to protect portions of the cities of Milpitas and San Jose.

The Coyote Creek element of the project was completed in 1996. The Berryessa Creek Project element proposed in the Corps' 1987 feasibility report consisted primarily of a trapezoidal concrete lining. This was not acceptable to the local community. The Corps and the District are currently preparing a General Reevaluation Report which involves reformulating a project which is more acceptable to the local community and more environmentally sensitive. Project features will include setback levees and floodwalls to preserve sensitive areas (minimizing the use of concrete), appropriate aquatic and riparian habitat restoration and fish passage, and sediment control structures to limit turbidity and protect water quality. The project will also accommodate the city of Milpitas' adopted trail master plan. Estimated total costs of the General Reevaluation Report work are \$5 million, and should be completed in the spring of 2007.

Fiscal Year 2007 Funding.—\$100,000 in the fiscal year 2007 Corps Work Plan for the Coyote/Berryessa Creek Flood Protection Project to continue the General Reevaluation Report and environmental documents update.

Fiscal Year 2008 Funding Recommendation.—Based on the continuing threat of significant flood damage from Berryessa Creek and the need to continue with the General Reevaluation Report, it is requested that the Congressional Committee support an appropriation add-on of \$1.35 million, in addition to the \$950,000 in the Administration's fiscal year 2008 budget request, for a total of \$2.3 million for the Berryessa Creek Flood Protection Project element of the Coyote/Berryessa Creek Project.

STATEMENT OF SUPPORT—GUADALUPE RIVER PROJECT

Background.—The Guadalupe River is a major waterway flowing through a highly developed area of San Jose, in Santa Clara County, California. A major flood would damage homes and businesses in the heart of Silicon Valley. Historically, the river has flooded downtown San Jose and the community of Alviso. According to the U.S. Army Corps of Engineers (Corps) 2000 Final General Reevaluation & Environmental Report for Proposed Project Modifications, estimated damages from a 1 percent flood in the urban center of San Jose are over \$576 million. The Guadalupe River overflowed in February 1986, January 1995, and March 1995, damaging homes and businesses in the St. John and Pleasant Street areas of downtown San Jose. In March 1995, heavy rains resulted in breakouts along the river that flooded approximately 300 homes and business.

Project Synopsis.—In 1971, the local community requested that the Corps reactivate its earlier study. Since 1972, substantial technical and financial assistance have been provided by the local community through the Santa Clara Valley Water District in an effort to accelerate the project's completion. To date, more than \$85.8 million in local funds have been spent on planning, design, land purchases, and construction in the Corps' project reach.

The Guadalupe River Project received authorization for construction under the Water Resources Development Act of 1986; the General Design Memorandum was completed in 1992, the local cooperative agreement was executed in March 1992, the General Design Memorandum was revised in 1993, construction of the first phase of the project was completed in August 1994, construction of the second phase was completed in August 1996. Project construction was temporarily halted due to environmental concerns.

To achieve a successful, long-term resolution to the issues of flood protection, environmental mitigation, avoidance of environmental effects, and project monitoring and maintenance costs, a multi-agency "Guadalupe Flood Control Project Collabo-

native” was created in 1997. A key outcome of the collaborative process was the signing of the Dispute Resolution Memorandum in 1998, which modified the project to resolve major mitigation issues and allowed the project to proceed. Energy and Water Development Appropriations Act of 2002 was signed into law on November 12, 2001. This authorized the modified Guadalupe River Project at a total cost of \$226.8 million. Subsequent to the authorization, the project cost has been raised to \$251 million. Construction of the last phase of flood protection was completed in December 2004 and a completion celebration held in January 2005. The remaining construction consists of railroad bridge replacements and mitigation plantings. The overall construction of the project including the river park and the recreation elements is scheduled for completion in 2006.

Fiscal Year 2007 Funding.—\$5.6 million in the fiscal year 2007 Corps Work Plan to continue Guadalupe River Project construction.

Fiscal Year 2008 Funding Recommendation.—It is requested that the congressional committee support an appropriation add-on of \$8 million to continue construction of the final phase of the Guadalupe River Flood Protection Project.

STATEMENT OF SUPPORT—LLAGAS CREEK PROJECT

Background.—The Llagas Creek Watershed is located in southern Santa Clara County, California, serving the communities of Gilroy, Morgan Hill and San Martin. Historically, Llagas Creek has flooded in 1937, 1955, 1958, 1962, 1963, 1969, 1982, 1986, 1996, 1997, 1998, and 2002. The 1997, 1998, and 2002 floods damaged many homes, businesses, and a recreational vehicle park located in areas of Morgan Hill and San Martin. These are areas where flood protection is proposed. Overall, the proposed project will protect the floodplain from a 1 percent flood affecting more than 1,100 residential buildings, 500 commercial buildings, and 1,300 acres of agricultural land.

Project Synopsis.—Under authority of the Watershed Protection and Flood Prevention Act (Public Law 566), the Natural Resources Conservation Service completed an economic feasibility study in 1982 for constructing flood damage reduction facilities on Llagas Creek. The Natural Resources Conservation Service completed construction of the last segment of the channel for Lower Llagas Creek in 1994, providing protection to the project area in Gilroy. The U.S. Army Corps of Engineers (Corps) is currently updating the 1982 environmental assessment work and the engineering design for the project areas in Morgan Hill and San Martin. The engineering design is being updated to protect and improve creek water quality and to preserve and enhance the creek’s habitat, fish, and wildlife while satisfying current environmental and regulatory requirements. Significant issues include the presence of additional endangered species including the red-legged frog and steelhead, listing of the area as probable critical habitat for steelhead, and more extensive riparian habitat than were considered in 1982. Project economics are currently being updated as directed by Corps Headquarters to determine continued project economic viability.

Until 1996, the Llagas Creek Project was funded through the traditional Public Law 566 Federal project funding agreement with the Natural Resources Conservation Service paying for channel improvements and the District paying local costs including utility relocation, bridge construction, and right of way acquisition. Due to the steady decrease in annual appropriations for the Public Law 566 construction program since 1990, the Llagas Creek Project had not received adequate funding to complete the Public Law 566 project. To remedy this situation, the District worked with congressional representatives to transfer the construction authority from the Department of Agriculture to the Corps under the Water Resources Development Act of 1999 (section 501). Since the transfer of responsibility to the Corps, the District has been working with the Corps to complete the project. Efforts are underway to reauthorize the project at its current project cost in the recently introduced Water Resources Development Act of 2007.

Fiscal Year 2007 Funding.—\$250,000 in the fiscal year 2007 Corps Work Plan.

Fiscal Year 2008 Funding Recommendation.—Based upon the high risk of flood damage from Llagas Creek, it is requested that the Congressional Committee support an appropriation add-on of \$368,000 in fiscal year 2008 for planning, design, and environmental updates for the Llagas Creek Project.

STATEMENT OF SUPPORT—SAN FRANCISQUITO CREEK FLOOD DAMAGE REDUCTION AND ECOSYSTEM RESTORATION PROJECT

Background.—The San Francisquito Creek watershed comprises 45 square miles and 70 miles of creek system. The creek mainstem flows through five cities and two counties, from Searsville Lake, belonging to Stanford University, to the San Francisco Bay at the boundary of East Palo Alto and Palo Alto. Here it forms the bound-

ary between Santa Clara and San Mateo Counties, California and separates the cities of Palo Alto from East Palo Alto and Menlo Park. The upper watershed tributaries are within the boundaries of Portola Valley and Woodside townships. The creek flows through residential and commercial properties, a biological preserve, and Stanford University campus. It interfaces with regional and State transportation systems by flowing under two freeways and the regional commuter rail system. San Francisquito Creek is one of the last natural continuous riparian corridors on the San Francisco Peninsula and home to one of the last remaining viable steelhead trout runs. The riparian habitat and urban setting offer unique opportunities for a multi-objective flood protection and ecosystem restoration project.

Flooding History.—The creeks mainstem has a flooding frequency of approximately once in 11 years. It is estimated that over \$155 million in damages could occur in Santa Clara and San Mateo counties from a 1 percent flood, affecting 4,850 homes and businesses. Significant areas of Palo Alto flooded in December 1955, inundating about 1,200 acres of commercial and residential property and about 70 acres of agricultural land. April 1958 storms caused a levee failure downstream of Highway 101, flooding Palo Alto Airport, the city landfill, and the golf course up to 4-feet deep. Overflow in 1982 caused extensive damage to private and public property. The flood of record occurred on February 3, 1998, when overflow from numerous locations caused severe, record consequences with more than \$28 million in damages. More than 1,100 homes were flooded in Palo Alto, 500 people were evacuated in East Palo Alto, and the major commute and transportation artery, Highway 101, was closed.

Status.—Active citizenry are anxious to avoid a repeat of the February 1998 flood. Numerous watershed based studies have been conducted by the Corps, the Santa Clara Valley Water District, Stanford University, and the San Mateo County Flood Control District. Grassroots, consensus based organization, called the San Francisquito Watershed Council, has united stakeholders including local and State agencies, citizens, flood victims, developers, and environmental activists for over 10 years. The San Francisquito Creek Joint Powers Authority was formed in 1999 to coordinate creek activities with five member agencies and two associate members. The Authority Board has agreed to be the local sponsor for a Corps project and received Congressional authorization for a Corps reconnaissance study in May 2002. The Reconnaissance Study was completed in March 2005 and the Feasibility Study was initiated in November 2005.

Fiscal Year 2007 Funding.—\$300,000 in the fiscal year 2007 Corps Work Plan.

Fiscal Year 2008 Funding Recommendation.—It is requested the congressional committee support an appropriation add-on of \$700,000 to continue the Feasibility Study.

STATEMENT OF SUPPORT—SOUTH SAN FRANCISCO BAY SHORELINE STUDY

Background.—Congressional passage of the Water Resources Development Act of 1976, originally authorized the San Francisco Bay Shoreline Study, and Santa Clara Valley Water District (District) was one of the project sponsors. In 1990, the U.S. Army Corps of Engineers (Corps) concluded that levee failure potential was low because the existing non-Federal, non-engineered levees, which were routinely maintained by Leslie Salt Company (subsequently Cargill Salt) to protect their industrial interests, had historically withstood overtopping without failure. As a result, the project was suspended until adequate economic benefits could be demonstrated.

Since the project's suspension in 1990, many changes have occurred in the South Bay. The State and Federal acquisition of approximately 15,000 acres of South Bay salt ponds was completed in early March 2003. The proposed restoration of these ponds to tidal marsh will significantly alter the hydrologic regime and levee maintenance activities, which were assumed to be constant in the Corps' 1990 study. In addition to the proposed restoration project, considerable development has occurred in the project area. Many major corporations are now located within Silicon Valley's Golden Triangle, lying within and adjacent to the tidal flood zone. Damages from a 1 percent high tide are anticipated to far exceed the \$34.5 million estimated in 1981, disrupting business operations, infrastructure, and residences. Also, historical land subsidence of up to 6 feet near Alviso, as well as the structural uncertainty of existing salt pond levees, increases the potential for tidal flooding in Santa Clara County.

In July 2002, Congress authorized a review of the Final 1992 Letter Report for the San Francisco Bay Shoreline Study. The final fiscal year 2004 appropriation for the Corps included funding for a new start Reconnaissance Study.

Project Synopsis.—At present, large areas of Santa Clara, Alameda and San Mateo Counties would be impacted by flooding during a 1 percent high tide. The

proposed restoration of the South San Francisco Bay salt ponds will result in the largest restored wetland on the West Coast of the United States, and also significantly alter the hydrologic regime adjacent to South Bay urban areas. The success of the proposed restoration is therefore dependent upon adequate tidal flood protection, and so this project provides an opportunity for multi-objective watershed planning in partnership with the California Coastal Conservancy, the lead agency on the restoration project. Project objectives include: restoration and enhancement of a diverse array of habitats, especially several special status species; tidal flood protection; and provision of wildlife-oriented public access. A Corps Reconnaissance Study was completed in September 2004 and the Feasibility Study was initiated in September 2005.

Fiscal Year 2007 Funding.—\$1.3 million in the fiscal year 2007 Corps Work Plan to continue the Feasibility Study.

Fiscal Year 2008 Funding Request.—It is requested that the Congressional Committee support an appropriation add-on of \$2.5 million to continue the Feasibility Study to evaluate integrated flood protection and environmental restoration.

STATEMENT OF SUPPORT—UPPER GUADALUPE RIVER PROJECT

Background.—The Guadalupe River is one of two major waterways flowing through a highly urbanized area of Santa Clara County, California, the heart of Silicon Valley. Historically, the river has flooded the central district and southern areas of San Jose. According to U.S. Army Corps of Engineers (Corps) 1998 feasibility study, severe flooding would result from a 100-year flooding event and potentially cause \$280 million in damages.

The probability of a large flood occurring before implementation of flood prevention measures is high. The upper Guadalupe River overflowed in March 1982, January 1983, February 1986, January 1995, March 1995, and February 1998, causing damage to several residences and businesses in the Alma Avenue and Willow Street areas. The 1995 floods in January and March, as well as in February 1998, closed Highway 87 and the parallel light-rail line, a major commute artery.

Project Synopsis.—In 1971, the Santa Clara Valley Water District (District) requested the Corps reactivate an earlier study of Guadalupe River. From 1971 to 1980, the Corps established the economic feasibility and Federal interest in the Guadalupe River only between Interstate 880 and Interstate 280. Following the 1982 and 1983 floods, the District requested that the Corps reopen its study of the upper Guadalupe River upstream of Interstate 280. The Corps completed a reconnaissance study in November 1989, which established an economically justifiable solution for flood protection in this reach. The report recommended proceeding to the feasibility study phase, which began in 1990. In January 1997, the Corps determined that the National Economic Development (NED) Plan would be a 2 percent or 50 year level of flood protection rather than the 1 percent or 100 year level. The Corps feasibility study determined the cost of the locally preferred 100-year plan is \$153 million and the Corps NED 50-year plan is \$98 million. The District requested that the costs of providing 50-year and 100-year flood protection be analyzed during the preconstruction engineering design phase. The Corps is now proceeding with the preconstruction engineering design phase and has refined the NED Plan to address the District's comments and Endangered Species Act issues and has reevaluated the locally preferred plan for full Federal cost sharing. The findings were submitted to Corps Headquarters for approval in March 2004 in a Limited Reevaluation Report on the Proposed Project Modifications. This report contains an evaluation of the revised NED Plan project and the Locally Preferred Plan project, which costs \$165 million with a benefit-to-cost ratio of 1:1.42 and \$212 million with a benefit-to-cost ratio of 1:1.24, respectively. The Report was approved by the Corps in October 2005. The report recommended full cost-sharing on the Locally Preferred Plan project. Current efforts are underway to reauthorize the project at its current project cost in the recently introduced Water Resources Development Act of 2007.

Fiscal Year 2007 Funding.—No funds were appropriated in the fiscal year 2007 Corps Work Plan for the Upper Guadalupe River Project.

Fiscal Year 2008 Funding Recommendation.—It is requested that the congressional committee support an appropriation add-on of \$10.5 million in fiscal year 2008 to complete final design and continue construction on the Upper Guadalupe River Flood Protection Project.

STATEMENT OF SUPPORT—UPPER PENITENCIA CREEK FLOOD PROTECTION PROJECT

Background.—The Upper Penitencia Creek Watershed is located in northeast Santa Clara County, California, near the southern end of the San Francisco Bay. In the last two decades, the creek has flooded in 1980, 1982, 1983, 1986, 1995, and

1998. The January 1995 flood damaged a commercial nursery, a condominium complex, and a business park. The February 1998 flood also damaged many homes, businesses, and surface streets.

The proposed project on Upper Penitencia Creek, from the Coyote Creek confluence to Dorel Drive, will protect portions of the cities of San Jose and Milpitas. The floodplain is completely urbanized; undeveloped land is limited to a few scattered agricultural parcels and a corridor along Upper Penitencia Creek. Based on an August 2004 U.S. Army Corps of Engineers' (Corps) Economics Analysis, over 5,000 homes and businesses in the cities of San Jose and Milpitas are located in the 1 percent or 100 year flood area. Flood damages were estimated at \$455 million. Benefit to cost ratios for the 9 project alternatives range from 2:1 to 3.1:1.

Study Synopsis.—Under authority of the Watershed Protection and Flood Prevention Act (Public Law 83–566), the Natural Resources Conservation Service (formerly the Soil Conservation Service) completed an economic feasibility study (watershed plan) for constructing flood damage reduction facilities on Upper Penitencia Creek. Following the 1990 U.S. Department of Agriculture Farm bill, the Natural Resources Conservation Service watershed plan stalled due to the very high ratio of potential urban development flood damage compared to agricultural damage in the project area.

In January 1993, the Santa Clara Valley Water District (District) requested the Corps proceed with a reconnaissance study in the 1994 fiscal year while the Natural Resources Conservation Service plan was on hold. Funds were appropriated by Congress for fiscal year 1995 and the Corps started the reconnaissance study in October 1994. The reconnaissance report was completed in July 1995, with the recommendation to proceed with the feasibility study phase. The feasibility study, initiated in February 1998, is currently scheduled for completion in 2007.

Advance Construction.—To accelerate project implementation, the District submitted a section 104 application to the Corps for approval to construct a portion of the project. The application was approved in December 2000. The advance construction is for a 2,600-foot long section of bypass channel between Coyote Creek and King Road. However, due to funding constraints at the District and concerns raised by regulatory agencies, the design was stopped and turned over to the Corps to complete.

Fiscal Year 2007 Funding.—\$319,000 in the fiscal year 2007 Corps Work Plan for continued project investigation.

Fiscal Year 2008 Funding Recommendation.—It is requested that the congressional committee support an appropriation add-on of \$109,000, in addition to the \$191,000 in the administration's fiscal year 2008 budget request, for a total of \$300,000 for the Upper Penitencia Creek Flood Protection Project to continue the Feasibility Study.

PREPARED STATEMENT OF THE CALAVERAS COUNTY WATER DISTRICT

Calaveras County (County) is located in the central Sierra Nevada foothills about 25 miles east of the Sacramento-San Joaquin Delta (Delta). Ground elevations within the County increase from 200 feet above mean sea level near the northwest part of the County to 8,170 feet near Alpine County. It is a predominately rural county with a relatively sparse but rapidly developing population and limited agricultural and industrial development. Calaveras County is located within the watersheds of the Mokelumne, Calaveras, and Stanislaus Rivers.

All three of these rivers flow west, running through San Joaquin County into the Delta. Most of the County is underlain by the igneous and metamorphic rocks of the Sierra Nevada. Alluvial deposits of the Central Valley, which overlie the westward plunging Sierra Nevada, are present along an 80 square-mile area located along the western edge of the County and are part of the Eastern San Joaquin Groundwater Basin (ESJCGB).

In the fall of 1946, the Calaveras County Water District (CCWD) was organized under the laws of the State of California as a public agency for the purpose of developing and administering the water resources in Calaveras County. Therefore, CCWD is a California Special District and is governed by the California Constitution and the California Government and Water Codes. CCWD is not a part of, or under the control of, the County of Calaveras. CCWD was formed to preserve and develop water resources and to provide water and wastewater service to the citizens of Calaveras County.

Under State law, CCWD, through its board of directors, has general powers over the use of water within its boundaries. These powers include, but are not limited to: the right of eminent domain, authority to acquire, control, distribute, store,

spread, sink, treat, purify, reclaim, process and salvage any water for beneficial use, to provide sewer service, to sell treated or untreated water, to acquire or construct hydroelectric facilities and sell the power and energy produced to public agencies or public utilities engaged in the distribution of power, to contract with the United States, other political subdivisions, public utilities, or other persons, and subject to the California State Constitution, levy taxes and improvements.

COSGROVE CREEK FLOOD CONTROL PROJECT

The Cosgrove Creek Flood Control Project will address flooding that occurs along the lower reaches of the creek, as well as flooding that occurs on Spring Creek. Flooding in these areas impacts over 400 people and 100 structures located in the 100-year floodplain. Within the context of the flood control effort, the project will also address options for the beneficial use of peak flows and address other local concerns such as the need for recreational opportunities in the area.

The Calaveras County Water District respectfully requests \$100,000 for this project in fiscal year 2008 from the Corps of Engineers Construction General account.

NEW HOGAN RESERVOIR/CALAVERAS COUNTY REGIONAL WATER AND WASTEWATER FACILITY STUDY

This project will address regional water and wastewater facility needs for the region. New uses for recycled water, including wetlands creation, groundwater recharge and conjunctive use, are key elements of the project and will meet critical water use efficiency and environmental needs of the area. This project will also fund the New Hogan Lake Reoperation study to examine if operation of the project should be changed to more closely meet the contemporary needs of the area, including problems associated with downstream flooding and conjunctive use of water.

The Calaveras County Water District respectfully requests \$1,000,000 from the Corps of Engineers under section 205 in fiscal year 2008, switching to section 219 depending on WRDA.

PREPARED STATEMENT OF THE CALIFORNIA STATE COASTAL CONSERVANCY

SUMMARY

The following testimony is in support of the California State Coastal Conservancy's fiscal year 2008 Energy and Water Appropriations requests. The Conservancy respectfully requests needed funding for the following critical projects: \$7.65 million for the Hamilton Bel-Marín Keys Wetland Restoration Project, Army Corps of Engineers, Construction General; \$2.5 million for the South San Francisco Bay Shoreline Study, Army Corps of Engineers, General Investigations; \$750,000 for the Napa River Salt Marsh Restoration Project, Army Corps of Engineers, General Investigations; \$13.59 million for the Upper Newport Bay Ecosystem Restoration Project, Army Corps of Engineers, Construction General; \$3,000,000 for the Matilija Dam Ecosystem Restoration Project, Army Corps of Engineers, General Investigations and \$300,000 for the San Pablo Bay Watershed Restoration Program.

CONSERVANCY BACKGROUND

The California Coastal Conservancy, established in 1976, is a State agency that uses entrepreneurial techniques to purchase, protect, restore, and enhance coastal resources, and to provide access to the shore. We work in partnership with local governments, other public agencies, nonprofit organizations, and private landowners.

To date, the Conservancy has undertaken more than 950 projects along the 1,100 mile California coastline and around San Francisco Bay. Through such projects, the Conservancy: protects and improves coastal wetlands, streams, and watersheds; works with local communities to revitalize urban waterfronts; assists local communities in solving complex land-use problems and protects agricultural lands and supports coastal agriculture to list a few of our activities.

Since its establishment in 1976, the Coastal Conservancy has: helped build more than 300 access ways and trails, thus opening more than 80 miles of coastal and bay lands for public use; assisted in the completion of over 100 urban waterfront projects; joined in partnership endeavors with more than 100 local land trusts and other nonprofit groups, making local community involvement an integral part of the Coastal Conservancy's work and completed projects in every coastal county and all 9 San Francisco Bay Area counties. In addition, we currently have over 300 active projects that are benefiting the citizens of California.

Hamilton Bel-Marin Keys Wetland Restoration Project

In fiscal year 2008 the California Coastal Conservancy is seeking \$7.65 million, consistent with Corps of Engineers' capability, for the continued construction of this project.

This project is of critical importance as it will provide nearly 700 acres of restored tidal and seasonal wetlands at a former Army base, in Marin County, California and provide much needed habitat for several threatened and endangered species; as well as, shorebirds and waterfowl migrating along the Pacific Flyway. In addition, this project beneficially uses dredged material from the San Francisco Bay which provides for increased navigation and maritime commerce for the Bay Area, a much needed economic stimulus for the region.

The first phase of construction, which started last year, is taking place on the former Army Airfield. Miles of levees are currently under construction, after which the main runway and taxiways will be buried under millions of cubic yards of clean dredged sediment. Subsequently, the easterly levee will be breached allowing tidal waters to once again flood the site. Later in the project, the Corps will work on the adjacent Antenna field and Bel Marin Keys V property (subject to WRDA approval) resulting in a total project area of nearly 2,500 acres. This phased approach will be used to complete the design and construction tasks in conjunction with the availability of land and dredged material.

South San Francisco Bay Shoreline Study

The Conservancy is seeking \$2.5 million in funding in order to continue the Feasibility Study for this project. The study was initiated in fiscal year 2005 and has been ongoing, receiving \$600,000 in funds in fiscal year 2006.

This project is of national significance as it will create the largest restored wetland on the West Coast of the United States and will provide extensive habitat for federally endangered species and migratory waterfowl. In addition, the project is also critical to the region as it will provide tidal and fluvial flood protection for the South San Francisco Bay Area protecting approximately 42,800 acres, 7,400 homes and businesses, and significant urban infrastructure, to include major highways, hospitals and airport facilities.

In order to continue to advance this important study it is imperative that local interests and the Federal Government work together to ensure a reliable funding stream for the project. In accordance, substantial cost-sharing has already begun among the land management agencies. The U.S. Fish and Wildlife Service contributed \$8 million toward the \$100 million acquisition of the salt ponds. The State of California provided \$72 million and the Hewlett Foundation, Packard Foundation, Moore Foundation, and Goldman Fund provided \$20 million. The foundations are providing an additional \$15 million for restoration planning and \$9 million for land management. The State of California is providing \$8 million for planning and \$6 million for land management.

Napa River Salt Marsh

For fiscal year 2008, we are seeking \$750,000 in Federal funds in order to complete preconstruction engineering and design (PED) for this project which will allow construction to commence as soon as the project is authorized by Congress. Last year, \$125,000 was appropriated to the Corps of Engineers for PED activities.

The funds requested would allow the Corps of Engineers to complete design of the Napa River Salt Marsh Project. Upon authorization of the project in WRDA, the Corps will be able to construct the project. Construction of the project will provide extensive benefits to the region, to include: providing extensive wetland habitat in San Francisco Bay; the beneficial use for recycled water in the North Bay; improve open space and recreational opportunities; and resolve urgent issues associated with deterioration of the site's levee, water control structures, and water quality.

The 10,000 acre Napa River Salt Marsh was purchased by the State of California from Cargill in 1994 and is managed by the California Department of Fish and Game. The State Coastal Conservancy has been the non-Federal sponsor working with the Corps on the Feasibility Study. The Corps' Feasibility Study was completed and the Chief's Report was signed in December of 2004. Preconstruction engineering and design is currently taking place with construction commencing once the project is authorized in WRDA.

Upper Newport Bay Ecosystem Restoration

In fiscal year 2008, we are seeking \$13.59 million in funding to complete construction and avoid cost increases and project delays.

Upper Newport Bay, one of the largest remaining tidal wetlands in Southern California, provides significant habitat for numerous federally endangered species, mi-

gratory waterfowl and shorebirds along the Pacific Flyway, and anadromous fish and other aquatic species. To ensure the long-term viability of this diverse salt marsh ecosystem as well as the stability of the region's ecosystem, the Army Corps of Engineers and the County of Orange developed the Upper Newport Bay Ecological Restoration Project, which was authorized in the Water Resources Development Act of 2000.

The project will address the habitat conversion resulting from sedimentation in the upper bay, increase the quantity and quality of wetlands habitat, improve water quality by reducing sediment inflows and algal blooms and preserve both Federal and local navigational channels, which if unaddressed will require costly maintenance dredging.

A construction contract was awarded in September 2005 and construction is underway. The available funds (Federal and non-Federal) will be expended by late summer 2006. The funding request of \$18 million for fiscal year 2007 will complete construction of this project and avoid cost increases from re-mobilizing equipment and inflation.

Matilija Dam Ecosystem Restoration Project

In fiscal year 2008 we are seeking \$3 million for the Army Corps of Engineers General Investigation account to complete the U.S. Army Corps of Engineers' engineering and Design work of the project.

The Matilija Dam Ecosystem Restoration Project is a project of vital importance as the project seeks to remove the 200-foot tall Matilija Dam on a tributary to the Ventura River. This critical project is designed to reestablish runs of the endangered southern steelhead trout and to allow sand to flow to coastal beaches. This project is one of the largest dam removal projects in the Country and enjoys broad support from many local, State and Federal agencies.

In order to remove the dam, 6 million cubic yards of sediments trapped behind the dam will be moved or recontoured. A high flow sediment bypass system will be constructed at a water diversion downstream. A silt removal system will be installed along the diversion canal. In addition, levees will be built in several places along the river channel to protect property from flooding due to the expected increases in stream channel elevation in the first years after removal of the dam. The project also involves removal of invasive plants and the installation of replacement water wells

San Pablo Bay Watershed Restoration Program

We are seeking \$300,000 in fiscal year 2008 appropriations for the U.S. Army Corps of Engineers General Investigations account.

This critical program provides technical, planning and design assistance to local partners in one of the Nation's most treasured estuaries. Partnership collaboration and outreach guarantees that the program provides the services needed by local entities to improve habitat and flood protection throughout the watershed. By working with local entities, long-term water resources protection and restoration has increased.

The support of the program would facilitate technical and planning assistance that will expand wetland habitat for numerous endangered species, migratory waterfowl and shorebirds, anadromous fish and other aquatic species. The project will also improve open space and recreation opportunities as well as resolve the following; issues surrounding levees on the Sears Point project, channel restoration on Gallinas Creek, water quality issues on the Black Point Antenna Field site as well as conduct environmental restoration and flood protection surveys on Wildcat Creek.

We thank you for your consideration of these requests and look forward to working with you on these and other matters throughout the year.

PREPARED STATEMENT OF THE AMERICAN CHEMICAL SOCIETY

The American Chemical Society (ACS) would like to thank Chairman Byron Dorgan and Ranking Member Peter Domenici for the opportunity to submit testimony for the record on the Energy and Water Development Appropriations bill for fiscal year 2008. For fiscal year 2008, ACS requests the Department of Energy Office of Science be fully funded at the administration request of \$4.398 billion.

ACS is a non-profit scientific and educational organization, chartered by Congress, representing more than 160,000 individual chemical scientists and engineers. The world's largest scientific society, ACS advances the chemical enterprise, increases public understanding of chemistry, and brings its expertise to bear on State and national matters.

As Congress and the administration seek to bolster the economy, economists agree that investments in basic research boost long-term economic growth more than other areas of Federal spending. Numerous recent reports cite the growing challenges American faces from global competitors, including the National Academies of Science report *Rising Above the Gathering Storm*.

Basic physical science investments foster the new technologies and train the scientific workforce which drive the Nation's public health, defense, energy security, and environmental progress. Although industry funds the bulk of national R&D, the Federal Government provides 60 percent of basic research funding and, remarkably, 40 percent of patents cite Federal research as their source. Yet Federal research in the physical sciences and engineering has been cut in half since 1970 as a percentage of GDP. Fortunately, the President, top congressional leaders, and members of science and industry have all recognized the need to boost investment in physical sciences and engineering research. This investment has never been more important given its central role in advancing the Nation's economic, energy, and homeland security.

ACS Budget Recommendations

Current Federal efforts to advance energy efficiency, production, and new energy sources while reducing air pollution and other environmental impacts will demand increased investment in long-term energy research. By supporting people, research, and world-class science and engineering facilities, the Department of Energy's Office of Science expands the frontiers of science in areas critical to DOE's energy, environment, and national security missions.

The President's budget request represents leadership to ensure American competitiveness and innovation by providing the largest investment in DOE Office of Science in over 2 decades. Many in Congress have joined with the President in calling for expanded investment in basic physical science research. The President's request for \$4.398 billion is essential to ensuring the strength of our innovation economy.

Increases in the Office of Science will help reverse the declining Federal support for physical science and encourage more students to pursue degrees in these fields. The Office of Science is the largest Federal supporter of research in the physical sciences, funding almost 40 percent of research in these fields. The Office of Science fosters the new discoveries and technical talent that will continue to be essential to advances in coal, hydrogen, biomass, genomics, and many other technology areas. Additional funds should be directed to increase the number of grants, especially in core energy programs, and to improve research facilities. The Office is the primary source of Federal support in many research areas essential to our energy security and economy, such as catalysis, carbon cycle research, photovoltaics, combustion, and advanced computing. Increased investment is also important given the declining private support for long-term energy research.

Increase Grants in Core Programs

ACS recommends that increases for the Office of Science be directed to advancing core energy research across disciplines, which enables DOE to respond rapidly to new challenges. For example, DOE capitalized on long-term atmospheric chemistry research, particularly in aerosols, and quickly developed a single anthrax-bacterium detector. DOE must strengthen its ability to attract scientists and train the next generation of scientists and engineers by increasing the number of grants in its core programs without reducing their size and duration. Current appropriations allow the DOE Office of Science to fund one third the proposals as the National Institutes of Health and the National Science Foundation. This rate is considerably lower than those of other agencies and amounts to lost opportunities for both significant discoveries and the education of the next generation of scientists and engineers.

Within the Office of Science, ACS particularly supports the Basic Energy Sciences and Biological and Environmental Research programs. As the cornerstone of the Office, the Basic Energy Sciences (BES) program supports an array of long-term basic research to improve energy production and use and reduce the environmental impact of those activities. The BES program manages almost all of DOE's scientific user-facilities, and provides leading support for nanotechnology and advanced computing research—two priority research areas that will have important implications for energy efficiency and security. The Biological and Environmental Research (BER) program advances fundamental understanding in fields such as waste processing, bioremediation, and atmospheric chemistry to better understand potential long-term health and environmental effects of energy production and use and identify opportunities to prevent pollution. Progress in these fields is also needed to develop and advance new, effective, and efficient processes for the remediation and

restoration of DOE weapons production sites. ACS supports a strong role for DOE in Federal efforts to advance pollution prevention and climate change research.

DOE and the Scientific Workforce

As the largest supporter of research in the physical sciences, DOE can greatly affect the training and number of scientists in industry, government and academia. Inadequate investment in any research field constricts the supply of trained scientists and engineers who apply research and develop new technology. For instance, declining support for nuclear science and engineering will greatly affect the nuclear sector as a majority of today's nuclear scientists and engineers near retirement. Another example is the synergistic relationship between the need for radiochemists and NIH's ability to conduct clinical trials. Advances in diagnosis and treatment in nuclear medicine are dependent on the synthesis of highly specific radiopharmaceuticals that target biological processes in normal and diseased tissues. The Office of Science, through BER supported research, occupies a critical place in the field of radiopharmaceutical research. The NIH relies on the Office of Science's basic research to enable clinical trials.

Another way for DOE to help attract students and retain talented scientists and engineers is to renew investments in scientific infrastructure. The Office of Science operates one of the most extensive and remarkable collection of scientific user facilities in the world, providing tools for research for more than 25,000 scientists funded by DOE, other Federal agencies, and industry. Many facilities are in poor condition or have outmoded instrumentation. Additional funding would allow for increased operating time, upgrades, instrumentation, and technical support. The proposed cuts could result in established facilities lying idle, allowing taxpayer investments to go unused.

National laboratories also play an important role in providing research and training opportunities to enhance the university curriculum. ACS supports the initial plan by DOE to utilize its national laboratories to help mentor and train science teachers. Students at all levels clearly learn better when their teachers have a deep understanding of the subject, and the first-rate multidisciplinary research and scientific professionals at the national laboratories certainly could be a rich resource for science and math teachers. ACS urges stronger coordination among agencies with significant K-12 math and science programs in order to maximize the Federal investment in this area.

ACS praises the work of Department of Energy leadership, and particularly Office of Science Director Ray Orbach, to establish a vision of America's scientific future with the 20 year facilities plan and a forward thinking departmental strategic plan. ACS views these documents, along with the Secretary of Energy's Advisory Board report "Critical Choices: Science, Energy, and Security" as key elements of America's research and development portfolio. Growth in DOE Science funding is essential to realizing the goals in these documents, and ACS urges Congress to act to ensure this vision of a technologically advanced and safe America comes to fruition.

PREPARED STATEMENT OF THE NAPA COUNTY FLOOD CONTROL AND WATER
CONSERVATION DISTRICT

On behalf of the Napa County Flood Control and Water Conservation District (District), I want to thank the subcommittee for this opportunity to present our priorities for fiscal year 2008 and, at the same time, express our appreciation for your support of the District's projects in the years past. The District is the local sponsor for the Corps of Engineers award-winning Napa River Flood Control project and we are requesting the subcommittee's full support of this project to ensure that it stays on schedule. Specifically, we request the subcommittee to support our request of \$19 million from the Army Corps of Engineers Construction General account for the Napa River Flood Control Project. We are also seeking \$3.615 million for the maintenance dredging of the Napa River from the Army Corps of Engineers (Operation and Maintenance, General account). The following text outlines these projects and the need for the requested funding.

NAPA RIVER FLOOD CONTROL PROJECT

Background

In the last 50 years, 19 floods have struck the Valley region, exacting a heavy toll in loss of life and property.

The most recent flooding event, the New Years flood of 2006, to hit our area is estimated to have caused some \$70 million in damage within the city of Napa—with

the vast majority of that damage in areas that will be protected by the Project that is currently under construction.

The flood in 1986 killed three people and caused more than \$100 million in damage in 1986 dollars. Damages throughout Napa County totaled about \$85 million from the January and March 1995 floods. The floods resulted in 27 businesses and 843 residences damaged countywide. Almost all of the damages from the 1986, 1995, and 1997 floods were within the Project area.

Congress had authorized a flood control project in 1965, but due to expense, lack of public consensus on the design and concern about environment impacts, a project had never been realized. In mid-1995, Federal and State resource agencies reviewed the plan and gave notice to the Corps that this plan had significant regulatory hurdles to face.

The project is located in the city and county of Napa, California. The population in the city of Napa, approximately, 67,000 in 1994, is expected to exceed 77,000 this year. Excluding public facilities, the present value of damageable property within the project flood plain is well over \$500 million. The Napa River Basin, comprising 426 square miles, ranging from tidal marshes to mountainous terrain, is subject to severe winter storms and frequent flooding. In the lower reaches of the river, flood conditions are aggravated by local runoff. Floods in the Napa area have occurred in 1955, 1958, 1963, 1965, 1986 (flood of record), 1995, 1997 and 2005. In 1998, the river rose just above flood stage on three occasions, but subsided before major property damage occurred. In December of 2002, flooding occurred from the Napa Creek at the transition to the Napa River, resulting in damage to numerous residents and several businesses.

Approved Plan—Project Overview

In an effort to identify a meaningful and successful plan, a new approach emerged that looked at flood control from a broader, more comprehensive perspective. Citizens for Napa River Flood Management was formed, bringing together a diverse group of local engineers, architects, aquatic ecologists, business and agricultural leaders, environmentalists, government officials, homeowners and renters and numerous community organizations.

Through a series of public meetings and intensive debate over every aspect of Napa's flooding problems, the Citizens for Napa River Flood Management crafted a flood management plan offering a range of benefits for the entire Napa region. The Corps of Engineers served as a partner and a resource for the group, helping to evaluate their approach to flood management. The final plan produced by the Citizens for Napa River Flood Management was successfully evaluated through the research, experience and state-of-the-art simulation tools developed by the Corps and numerous international experts in the field of hydrology and other related disciplines. The success of this collaboration serves as a model for the Nation.

Acknowledging the river's natural state, the project utilizes a set of living river strategies that minimize the disruption and alteration of the river habitat, and maximizes the opportunities for environmental restoration and enhancement throughout the watershed.

The Corps has developed the revised plan, which provides 100-year protection, with the assistance of the community and its consultants into the Supplemental General Design Memorandum (SGDM) and its accompanying draft Environmental Impact Statement/Environmental Impact Report (SEIS/EIR). Construction of the project began 2 years ago. The coalition plan now memorialized in the Corps final documents includes the following engineered components: lowering of old dikes, marsh plain and flood plain terraces, oxbow dry bypass, Napa Creek flood plain terrace, upstream and downstream dry culverts along Napa Creek, new dikes, levees and flood walls, bank stabilization, pump stations and detention facilities, and bridge replacements. The benefits of the plan include reducing or elimination of loss of life, property damage, cleanup costs, community disruption due to unemployment and lost business revenue, and the need for flood insurance. In fact, the project has created an economic renaissance in Napa with new investment, schools and housing coming into a livable community on a living river. As a key feature, the plan will improve water quality, create urban wetlands and enhance wildlife habitats.

The plan will protect over 7,000 people and over 3,000 residential/commercial units from the 100-year flood event on the Napa River and its main tributary, the Napa Creek, and the project has a positive benefit-to-cost ratio under the Corps calculation. One billion dollars in damages will be saved over the useful life of the project. The Napa County Flood Control District is meeting its local cost-sharing responsibilities for the project. A countywide sales tax, along with a number of other funding options, was approved 4 years ago by a two-thirds majority of the county's voters for the local share. Napa is California's highest repetitive loss community.

This plan is demonstrative of the disaster resistant community initiative, as well, as the sustainable development initiatives of FEMA and EPA.

NAPA RIVER DREDGING PROJECT

The Napa River navigation project was authorized by the Rivers and Harbors Acts of 1888, 1935, and 1946.

The Napa River is a shallow draft navigation channel which serves light commercial and recreational traffic. The project is normally dredged by the Corps of Engineers on a 6-year cycle, with the most recent dredging begun completed in 1998. This dredging is 2 years overdue and is causing not only impediment to commercial activity but posing major obstacles for construction of the project from the river. Maintenance dredging is required to restore depths required for existing traffic and in anticipation of the additional boat traffic resulting from replacement of Maxwell Bridge. The Napa County Flood Control and Water Conservation District is responsible for providing a suitable disposal site for the dredged material.

PREPARED STATEMENT OF THE CITY OF ST. HELENA, CALIFORNIA

City Of St. Helena

The city of St. Helena is located in the center of the wine growing Napa Valley, 65 miles north of San Francisco. The area was settled in 1834 as part of General Vallejo's land grant. The city of St. Helena was incorporated as a city on March 24, 1876 and reincorporated on May 14, 1889.

The city of St. Helena is a General Law City and operates under the Council-City Manager form of government. St. Helena is a full service city and encompasses an area of 4 square miles. The City Council is the governing body and has the power to make and enforce all laws and set policy related to municipal affairs. The official population of the city of St. Helena as of January 1, 2003, is 6,041. Because of its size and its rural nature, St. Helena has serious infrastructure, as well as, flood protection and environmental needs that far exceed its financial capabilities.

The city from its inception has served as a rural agricultural center. Over the years, with the growth and development of the wine industry, the city has become an important business and banking center for the wine industry. The city also receives many tourists as a result of the wine industry. While, the main goal of the city is to maintain a small-town atmosphere and to provide quality services to its citizens, this is becoming increasingly difficult. Regulatory, administrative and resource requirements placed on the city through the listing of threatened and endangered species under the Endangered Species Act on the Napa River, as well as significant Clean Water Act requirements require the city with a small population base to face significant financial costs.

The Napa River flows along the east boundary of the city of St. Helena in northern Napa County. The overall Napa River Watershed historically supported a dense riparian forest and significant wetland habitat. Over the last 200 years, approximately 6,500 acres of valley floor wetlands have been filled in and 45,700 acres of overall watershed have been converted to urban and agricultural uses. This degradation of natural habitats has had a significant effect on water quality, vegetation and wildlife, and aquatic resources within the Napa River Watershed.

Surface water quality of the Napa River is dependent upon time of year, runoff from York and Sulphur Creeks, and urban area discharges. During the winter months when stream flow is high, pollutants are diluted; however, sedimentation and turbidity is high as well. During the summer months when stream flow is low, pollutants are concentrated and oxygen levels are low, thereby decreasing water quality. Agricultural runoff adds pesticides, fertilizer residue, and sometimes sediment. Discharges from urban areas can include contaminated stormwater runoff and treated city wastewater. The Napa River has been placed on the Clean Water Act 303(d) list and TMDL Priority Schedule due to unacceptable levels of bacteria, sedimentation, and nutrients. It is against this backdrop that the city of St. Helena faces its biggest challenges.

St. Helena Comprehensive Flood Control Project

The project site is in the City of St. Helena in Napa County, California (County), along the Napa River and adjacent areas. Within and adjacent to this reach of the River, the city proposes various flood control components, ranging from widening the floodplain and constructing new floodwalls and levee, to relocating homes. An additional component includes flood protection at the Wastewater Treatment Plant (WWTP) south of the city.

With this project, the city of St. Helena seeks to develop and implement a plan that will reduce damage resulting from Napa River flooding in a manner that is economically feasible, acceptable from a public policy standpoint, and environmentally sensitive. In particular, the city wishes to reduce flooding in a manner that will result in overall improvement to the health of the ecosystem in the project reach.

The project will re-connect the Napa River to its historic floodplain, thereby reducing water surface elevations through the area by several feet, avoiding large flood control structures and canalization, and would provide 100-year flood protection to the area. It will also restore habitat of the natural floodplain terraces, including riparian and aquatic habitat. Within and adjacent to this reach of the river, the city proposes various flood control components, ranging from widening the floodplain and constructing new floodwalls and levee, to relocating homes. The St. Helena Comprehensive Project will also restore native plant and tree communities through re-vegetation efforts.

The city of St. Helena respectfully requests the committee's support for \$450,000 under the Corps of Engineers General Investigations Account.

Upper York Creek Dam Removal And Restoration Project

The Upper York Creek Watershed originates at the western side of the Napa Valley watershed and the creek flows through a narrow canyon before joining the Napa River at a 225 foot elevation.

This project will improve fish passage and ecological stream function for the York Creek, a key Napa River Tributary. The project will open an additional 2 miles of steelhead habitat upstream from the current dam location by removing an earthen dam and accumulated sediment necessary to restore fish passage to provide unimpeded upstream adult and downstream juvenile fish passage.

Revegetation, as part of the project, will restore a self-sustaining native plant community that will help exclude non-native invasive species.

The city of St. Helena respectfully requests the committee's support for \$1.371 million under the Corps of Engineers section 206 Aquatic Ecosystem Restoration Program to design and initiate construction under a design build contract in fiscal year 2008.

St. Helena Napa River Restoration Project

The Napa River and its riparian corridor are considered Critical Habitat for steelhead and salmon recovery. The steelhead is one of six federally-listed threatened and endangered species within the Napa River and its adjoining tributaries which requires attention. Current conditions are such that natural habitats and geomorphic processes of the Napa River are highly confined with sediment transport and geomorphic work occurring in a limited area of the streambed and channel banks. Napa River's habitat for the steelhead is limited in its ability to provide prime spawning habitat. Limitations include urbanization removing significant amounts of shading and cover vegetation within and adjacent to the river; and a detrimental lack of pool habitat.

In an effort to address these Federal environmental issues, the St. Helena Napa River Restoration Project, a section 06 Aquatic Ecosystem Restoration Project, was identified in the Napa Valley Watershed Management Feasibility Study of April 2001 as a specific opportunity for restoration.

This project will develop riparian planting regimes to maximize habitat values for species, in particular, steelhead, California freshwater shrimp and young salmon.

This project will address the lack of shading and cover vegetation along the river which has impaired the river's ability to serve as a critical habitat for many different species of fish and wildlife. It is necessary to ensure and improve the viability of Federal and State listed species by providing rearing, resident and migratory habitat in the project's three-mile stream corridor. The project will also work to improve area habitat to benefit the migration of steelhead to high value fisheries habitat in upper watershed channel reaches.

The city of St. Helena respectfully requests \$300,000 in fiscal year 2008 funding from the Corps of Engineers section 206 Aquatic Ecosystem Restoration Program to complete the feasibility study. This study will recommend actions not only for maximizing habitat for species by removing obstacles and hard bank stabilization, but to implement improvements to in-stream habitat such as woody debris, boulders and establishment of pools.

PREPARED STATEMENT OF THE METROPOLITAN WATER RECLAMATION DISTRICT OF
GREATER CHICAGO

On behalf of the Metropolitan Water Reclamation District of Greater Chicago (District), I want to thank the subcommittee for this opportunity to present our priority for fiscal year 2008 and, at the same time, express our appreciation for your support of the District's projects in the years past. The District is the local sponsor for the Corps of Engineers priority projects of the Chicagoland Underflow Plan: the O'Hare, McCook and Thornton Reservoirs. We are requesting the subcommittee's full support for McCook and Thornton Reservoirs, as the O'Hare Reservoir has been completed. Specifically, we request the subcommittee to support the President's fiscal year 2008 budget request of \$33,500,000 from the Army Corps of Engineers Construction, General account in the fiscal year 2008 Energy and Water appropriations bill. The following text outlines these projects and the need for the requested funding.

The Chicagoland Underflow Plan

The Chicagoland Underflow Plan (CUP) consists of three reservoirs: the O'Hare, McCook and Thornton Reservoirs. These reservoirs are a part of the Tunnel and Reservoir Plan (TARP). The O'Hare Reservoir Project was fully authorized for construction in the Water Resources Development Act of 1986 (Public Law 99-662) and completed by the Corps in fiscal year 1999. This reservoir is connected to the existing O'Hare segment of the TARP. Adopted in 1972, TARP was the result of a multi-agency effort, which included officials of the State of Illinois, County of Cook, city of Chicago, and the District.

TARP was designed to address the overwhelming water pollution and flooding problems of the Chicagoland combined sewer areas. These problems stem from the fact that the capacity of the area's waterways has been overburdened over the years and has become woefully inadequate in both hydraulic and assimilative capacities. These waterways are no longer able to carry away the combined sewer overflow (CSO) discharges nor are they able to assimilate the pollution associated with these discharges. Severe basement flooding and polluted waterways (including Lake Michigan, which is the source of drinking water for millions of people) is the inevitable result. We point with pride to the fact that TARP was found to be the most cost-effective and socially and environmentally acceptable way for reducing these flooding and water pollution problems. Experience to date has reinforced such findings with respect to economics and efficiency.

The TARP plan calls for the construction of the new "underground rivers" beneath the area's waterways, connected to large CSO storage reservoirs. The "underground rivers" are tunnels up to 35 feet in diameter and 350 feet below the surface. All 109.4 miles of the tunnels have just recently been completed. The tunnels capture the majority of the pollution load by capturing all of the small storms and the first flush of the large storms.

The completed O'Hare CUP Reservoir provides 350 million gallons of storage. This Reservoir has a service area of 11.2 square miles and provides flood relief to 21,535 homes in Arlington Heights, Des Plaines and Mount Prospect. The Thornton and McCook Reservoirs are currently under construction, but until and unless they are completed, significant areas will remain unprotected. Without these reservoirs as outlets, the local drainage has nowhere to go when large storms hit the area.

Since its inception, TARP has not only abated flooding and pollution in the Chicagoland area, but has helped to preserve the integrity of Lake Michigan. In the years prior to TARP, a major storm in the area would cause local sewers and interceptors to surcharge resulting in CSO spills into the Chicagoland waterways and during major storms into Lake Michigan, the source of drinking water for the region. Since these waterways have a limited capacity, major storms have caused them to reach dangerously high levels resulting in massive sewer backups into basements and causing multi-million dollar damage to property.

Since implementation of TARP, 823 billion gallons of CSOs have been captured by TARP, that otherwise would have reached waterways. Area waterways are once again abundant with many species of aquatic life and the riverfront has been reclaimed as a natural resource for recreation and development. Closure of Lake Michigan beaches due to pollution has become a rarity. After the completion of both phases of TARP, 99 percent of the CSO pollution will be eliminated. The elimination of CSOs will reduce the quantity of discretionary dilution water needed to keep the area waterways fresh. This water can be used instead for increasing the drinking water allocation for communities in Cook, Lake, Will and DuPage counties that are now on a waiting list to receive such water. Already, these counties have received millions of gallons of additional Lake Michigan water per day, partially as a result

of the reduction in the District's discretionary diversion since 1980. Additional allotments of Lake Michigan water will be made to these communities, as more water becomes available from reduced discretionary diversion.

With new allocations of lake water, many communities that previously did not get lake water are in the process of building, or have already built, water mains to accommodate their new source of drinking water. The new source of drinking water will be a substitute for the poorer quality well water previously used by these communities. Partly due to TARP, it is estimated by IDOT that between 1981 and 2020, 283 million gallons per day of Lake Michigan water would be added to domestic consumption. This translates into approximately 2 million additional people that would be able to enjoy Lake Michigan water. This new source of water supply will not only benefit its immediate receivers but will also result in an economic stimulus to the entire Chicagoland area by providing a reliable source of good quality water supply.

The McCook and Thornton Reservoirs

The McCook and Thornton Reservoirs of the Chicagoland Underflow Plan (CUP) were fully authorized for construction in the Water Resources Development Act of 1988 (Public Law 100-676). These CUP reservoirs, as previously discussed, are a part of TARP, a flood protection plan that is designed to reduce basement flooding due to combined sewer back-ups and inadequate hydraulic capacity of the urban waterways.

These reservoirs will provide annual benefits of \$115 million. The total expected annual benefits of these projects are approximately twice as much as their total annual costs. The District, as the local sponsor, has acquired the land necessary for these projects, and will meet its cost sharing obligations under Public Law 99-662.

These projects are a very sound investment with a high rate of return. The remaining benefit/cost ratio for these 2 reservoirs together is 3.0. They will enhance the quality of life, safety and the peace of mind of the residents of this region. The State of Illinois has endorsed these projects and has urged their implementation. In professional circles, these projects are hailed for their farsightedness, innovation, and benefits.

Based on two successive Presidentially-declared flood disasters in our area in 1986 and again in 1987, and severe flooding in the last several years, we believe the probability of this type of flood emergency occurring before implementation of the critical flood prevention measure is quite high. As the public agency for the greater Chicagoland area responsible for water pollution control, and as our past sponsorship for flood control projects, we have an obligation to protect the health and safety of our citizens. We are asking your support in helping us achieve this necessary and important goal of construction completion.

We have been very pleased that over the years the subcommittee has seen fit to include critical levels of funds for these important projects. It is important that we receive a total of \$33,500,000 in construction funds in fiscal year 2008 to maintain the commitment and finish these projects. This funding is critical in order to construct the McCook Reservoir Stage 1 Grout Curtain, Stage 2 Slurry Wall, and Stage 1 Rock Wall Stabilization Contracts and to continue the engineering design of other McCook and Thornton Reservoir projects. The community has waited long enough for protection and we need these funds now to move the project in construction. We respectfully request your consideration of our request.

Summary

To emphasize the areas plight, I would like to relate a flooding event that occurred when just under 4 inches of rain fell on the greater Chicagoland area. Due to the frozen ground, almost all of the rainfall entered our combined sewers, causing sewerage back-ups throughout the area. When the existing TARP tunnels filled with approximately 1.2 billion gallons of sewage and runoff, the only remaining outlets for the sewers were our waterways. Between 9:00 p.m. and 3:00 a.m., the Chicago and Calumet Rivers rose 6 feet. For the first time since 1981 we had to open the locks at all three of the waterway control points; these include Wilmette, downtown Chicago, and Calumet. Approximately 4.2 billion gallons of combined sewage and stormwater had to be released directly into Lake Michigan.

Given our large regional jurisdiction and the severity and regularity of flooding in our area, the Corps was compelled to develop a plan that would complete the uniqueness of TARP and be large enough to accommodate the area we serve. With a combined sewer area of 375 square miles, consisting of the city of Chicago and 51 contiguous suburbs, there are 1,443,000 structures within our jurisdiction, which are subject to flooding at any given time. The annual damages sustained exceed \$150 million. With the TARP CUP Reservoirs in place, these damages could be eliminated. We must consider the safety and peace of mind of the 2 million people

who are affected as well as the disaster relief funds that will be saved when these projects are in place. As the public agency in the greater Chicagoland area responsible for water pollution control, and as the regional sponsor for flood control, we have an obligation to protect the health and safety of our citizens. We are asking your support in helping us achieve this necessary and important goal. It is absolutely critical that the Corps' work, which has been proceeding for a number of years, now proceeds on schedule through construction.

Therefore, we urgently request that a total of \$33,500,000 in construction funds be made available in the fiscal year 2008 Energy and Water Development Appropriations Act to continue construction of the McCook and Thornton Reservoir Projects.

Again, we thank the subcommittee for its support of this important project over the years, and we thank you in advance for your consideration of our request this year.

PREPARED STATEMENT OF THE WESTERN COALITION OF ARID STATES (WESTCAS)

My name is Larry Libeu, and I am President of the Western Coalition of Arid States. The Western Coalition of Arid States (WESTCAS) is submitting this testimony regarding the Presidents fiscal year 2008 budget request for the United States Army Corp of Engineers.

WESTCAS is a coalition of approximately 125 water and wastewater districts, cities and towns and professional organizations focused on water quality and water quantity issues in the States of Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon and Texas. Our mission is to work with Federal, State and regional water quality and quantity agencies to promote scientifically-sound law, regulations, appropriations and policies that protect public health in the environment of the arid West.

Providing adequate budget for the Army Corps of Engineers is crucial for the immediate and long term delivery of adequate water supplies, hydropower, flood control, and flood and coastal restoration within the arid west. As such WESTCAS supports the performance criteria established which will ensure projects are funded and completed within a timely fashion. We also believe the issue of reprogramming of funds out of projects needs to be addressed in a more thorough manner and have welcomed your interest in this area of the Corps program.

We are greatly concerned that the Corps Construction budget is down 38 percent, the General Investigations are down 45 percent and the O&M budget is ever increasing. The Corps infrastructure is one of the foundations of our Nation's economy—and the infrastructure is aging. When we look at the number of projects funded by Congress last year, it appears the Corps is only submitting a budget that funds one-quarter of that work. This is not a solution for success but a path way to cataclysmic failure which could have devastating consequences to the economy.

The Army Corps of Engineers provides funding and oversight for many projects within the WESTCAS States including but not limited to the following:

Alamogordo, New Mexico	\$4,200,000
National Dam Safety Program	10,000,000
Oakland Harbor, California	42,000,000
Sacramento River Bank Protection, CA	21,528,000
Success Dam, Tule River, California	18,000,000
Sims Bayou, Houston, Texas	24,154,000

As such, the Corps is a critical partner for WESTCAS organizations to provide quality water services both today and tomorrow. We look with interest in seeing the 5-year budget development plan that will be provided to Congress in the near future. This will provide a level of greater transparency and ability for the stakeholders of the Corps to better understand future budgetary trends.

To that end, we believe it is important for the committee to provide greater direction for the Corps to undertake an integrated water management and watershed approach that will assist in focusing on the needs of today and with projecting future needs. What we have witnessed over the years of looking at agencies budgets is the lack of intergovernmental cooperation and cooperative planning. The planning should be taking place with the States and the interested parties at the watershed level. We believe there is widespread support for such approaches throughout the West.

We note a slight increase in the Corps Regulatory program, a program to protect wetlands and other waters of the United States. Permits, and the ability to get

timely consideration of such is an important element for our agencies. We are interested in seeing greater detail with regard to the Corps request in this area since they indicate the funding is needed because of the Supreme Court's Carabell and Rapanos decisions. These cases hold the potential for greater resource allocations on our members' part and believe this request needs careful attention.

Though not in your jurisdiction, we look with interest on the current Water Resources Development Act authorization effort because of the consequences to future budgets of the agency. Reform is a good idea if it is not used as a tool for delay. With the Corps having over a \$50 billion backlog of projects it is important to recognize the need to fund this budget at a level that meets the needs in a timely manner and keeps the economy strong and protects the public.

Thank you for considering our request.

DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

PREPARED STATEMENT OF THE NEW MEXICO INTERSTATE STREAM COMMISSION

COLORADO RIVER BASIN SALINITY CONTROL PROGRAM, TITLE II, BUREAU OF RECLAMATION

SUMMARY

This statement is submitted in support of fiscal year 2008 appropriations for the Colorado River Basin salinity control program of the Department of the Interior's Bureau of Reclamation. Congress designated the Bureau of Reclamation to be the lead agency for salinity control in the Colorado River Basin by the Colorado River Basin Salinity Control Act of 1974, and reconfirmed the Bureau of Reclamation's role by passage of Public Law 104-20. A total of \$17.5 million is requested for fiscal year 2008 to implement the authorized Colorado River salinity control program of the Bureau of Reclamation. The President's appropriation request of \$7.85 million, falling again below previous appropriations for the program, is inadequate because studies have shown that the implementation of the salinity control program has fallen behind the pace needed to control damages from salinity. An appropriation of \$17.5 million for Reclamation's salinity control program is necessary to protect water quality standards for salinity and to prevent unnecessary levels of economic damage from increased salinity levels in water delivered to the Lower Basin States of the Colorado River. In addition, funding for operation and maintenance of existing projects and sufficient general investigation funding is required to identify new salinity control opportunities.

STATEMENT

The water quality standards for salinity of the Colorado River must be protected while the Basin States continue to develop their compact apportioned waters of the river. The salinity standards for the Colorado River have been adopted by the seven Basin States and approved by EPA. While currently the standards have not been exceeded, salinity control projects must be brought on-line in a timely and cost-effective manner to prevent future effects that could cause the numeric criteria to be exceeded, and would result in unnecessary damages from higher levels of salinity in the water delivered to Lower Basin States of the Colorado River.

The Colorado River Basin Salinity Control Act was authorized by Congress and signed into law in 1974. The seven Colorado River Basin States, in response to the Clean Water Act of 1972, formed the Colorado River Basin Salinity Control Forum, a body comprised of gubernatorial representatives from the seven States. The Forum was created to provide for interstate cooperation in response to the Clean Water Act and to provide the States with information necessary to comply with Sections 303(a) and (b) of the Act. The Forum has become the primary means for the Basin States to coordinate with Federal agencies and Congress to support the implementation of the salinity control program for the Colorado River Basin.

Bureau of Reclamation studies show that quantified damages from the Colorado River to United States water users are about \$330,000,000 per year. Unquantified damages are significantly greater. Damages are estimated at \$75,000,000 per year for every additional increase of 30 milligrams per liter in salinity of the Colorado River. Control of salinity is necessary for the States of the Colorado River Basin, including New Mexico, to continue to develop their compact-apportioned waters of the Colorado River.

Timely appropriations for the funding of the salinity control program are essential to comply with the water quality standards for salinity, prevent unnecessary economic damages in the United States, and protect the quality of the water that the United States is obligated to deliver to Mexico. The Basin States and Federal agencies agree that increases in the salinity of the Colorado River will result in significant increases in damages to water users in the Lower Colorado River Basin. An appropriation of only the amount specified in the President's budget request is inadequate to protect the quality of water in the Colorado River and prevent unnecessary salinity damages in the States of the Lower Colorado River Basin. Although the United States has always met the water quality standard for salinity of water delivered to Mexico under Minute No. 242 of the International Boundary and Water Commission, the United States through the U.S. Section of IBWC is currently addressing a request by Mexico for better quality water. Thus, continued strong support and adequate funding of the salinity control program is required to control salinity-related damages in the United States and Mexico.

Congress amended the Colorado River Basin Salinity Control Act in July 1995 (Public Law 104-20). The salinity control program authorized by Congress by the amendment has proven to be very cost-effective, and the Basin States are standing ready with up-front cost sharing. Proposals from public and private sector entities in response to the Bureau of Reclamation's advertisement have far exceeded available funding. Basin States cost sharing funds are available for the \$17.5 million appropriation request for fiscal year 2008. The Basin States cost sharing adds \$0.43 for each Federal \$1 appropriated.

Public Law 106-459 gave the Bureau of Reclamation additional spending authority for the salinity control program. With the additional authority in place and significant cost sharing available from the Basin States, it is essential that the salinity control program be funded at the level requested by the Forum and Basin States to protect the water quality of the Colorado River. Some of the most cost-effective salinity control opportunities occur when Reclamation improves irrigation delivery systems concurrently with on-farm irrigation improvements undertaken by the U.S. Department of Agriculture's Environmental Quality Incentives Program (EQIP). The Basin States cost-share funding is available for both parts, on-farm and off-farm, and EQIP funding appears to be adequate to accomplish needed on-farm work. Adequate funding for Reclamation off-farm work is needed to maintain timely implementation and effectiveness of salinity control measures.

Maintenance and operation of the Bureau of Reclamation's salinity control projects and general investigations to identify new cost-effective salinity control projects are necessary for the continued success of the salinity control program. Investigation of new opportunities for salinity control are critical while the Basin States continue to develop and use their compact-apportioned waters of the Colorado River. The water quality standards for salinity and the United States water quality requirements pursuant to treaty obligations with Mexico are dependent on timely implementation of salinity control projects, adequate funding to maintain and operate existing projects, and sufficient general investigation funding to determine new cost-effective opportunities for salinity control.

Continued funding primarily through Reclamation's Facility Operation activity to support maintenance and operation the Paradox Valley Unit and the Grand Valley Unit is critically needed. General Investigation funding through Reclamation's Colorado River Water Quality Improvement Program has been lacking in the recent past, and needs to be restored to a level that supports the need for identification and study of new salinity control opportunities to maintain the levels of salinity control to meet water quality standards and control economic damages in the Lower Colorado River Basin.

I urge the Congress to appropriate \$17.5 million to the Bureau of Reclamation for the Colorado River Basin salinity control program, adequate funding for operation and maintenance of existing projects and adequate funding for general investigations to identify new salinity control opportunities. Also, I fully support testimony by the Forum's Executive Director, Jack Barnett, in request of this appropriation, and the recommendation of an appropriation of the same amount by the federally chartered Colorado River Basin Salinity Control Advisory Council.

PREPARED STATEMENT OF THE JICARILLA APACHE NATION

INTRODUCTION

On behalf of the Jicarilla Apache Nation in New Mexico, I am pleased to submit this statement regarding the fiscal year 2008 proposed budget for the Bureau of

Reclamation, Department of the Interior. The Jicarilla Apache Nation (“nation”) is a federally recognized Indian Tribe, and our Reservation is located in Northern New Mexico. We have over 3,500 members and 85 percent of the population lives on our Reservation in the town of Dulce, which serves as our tribal headquarters. For the last 8 years we have been working with the Federal Government to deal with a severe problem that has been plaguing us—the failing public drinking water and wastewater systems on our Reservation.

As more described below, the Nation has worked tirelessly to take corrective action to address this public health crisis by committing significant funds and resources, and by successfully working with Congress to authorize a project to replace this dilapidated infrastructure. The nation has done everything possible to implement the statutory directive placed on the Secretary of the Interior to comply with the law and construct our project. Unfortunately, since Congress authorized the project which President Bush signed into law in December 2002, the Bush administration has repeatedly failed to include funding in its annual budget to Congress to develop and construct our project. Notably, ours is the only project Congress has authorized which is fully encompassed in an Indian reservation and which has 100 percent Indian project beneficiaries. We also understand our project is the only one that acknowledges and mandates corrective action for the Federal Government’s liability in establishing and creating a deficient and unsafe public drinking water system serving an Indian reservation population.

The nation respectfully calls upon this committee to provide funding in fiscal year 2008 for our project and see that the administration is accountable for constructing it, as set forth in our project’s authorizing statute.

BACKGROUND

The problem with the condition of the current public water system and waste water infrastructure on the Jicarilla Apache Reservation stems from generations of neglect by the Bureau of Indian Affairs (BIA), which, as creator, owner and operator of the system, did not properly design, plan for, manage, repair and upgrade portions of the system over the last 90 years. The system diverts water from the Navajo River—a pristine water source, and its initial structures served the original BIA facilities on the Reservation. As the community of Dulce became the center of activity, members began moving there from other areas of the Reservation. In response to the growth, the BIA expanded the water line to allow members to access the water from common areas. As the area grew with housing and other facilities, water lines were extended, on an ad hoc basis, with no planning or recording. By the 1990’s the community’s system had every type of water piping, including clay, asbestos lined, other metals, as even some wood piping has been unearthed.

In October 1998, the system collapsed at the river and left the nation without water for 6 days. The home of one of our elders burned down, with no water to put out the fire. The National Guard brought in bottled water and portable restrooms. The nation funded emergency efforts to restore water delivery, and received no funding from the BIA.

The BIA’s neglect and failure to manage and maintain its public water system serving our people has caused many dire health threats and circumstances including degraded water quality in the lines, obsolete and non-compliant sewage lagoon ponds which were operating without properly permits because the ponds did not meet the Federal standards, pollution from unlined sewage ponds spilling into the community and into nearby arroyo which fed back into the Navajo River towards downstream users. The most disturbing circumstance, however, is that a large number of tribal members are experiencing serious intestinal and other internal diseases, more community members have been diagnosed and are dying from stomach and other forms of cancer. We suspect this can be attributed to unsafe drinking water.

STATUTORY PROJECT AUTHORIZATION

A combination of the water outage and the dire health related circumstances led the nation’s leaders to go to Washington, DC to request assistance to repair the Federal Government’s broken system. Our first step was to approach the BIA in Washington. They told us they had no funds to address the problem. The nation sought help from other Federal agencies, who were sympathetic but generally unable to assist because the BIA owned and operated the system. They also informed us that the enormity of the problems with the system required a significant investment of resources that they would not be able to accommodate.

We then turned to our delegation from New Mexico for help. Working with them, the nation pursued the legislative route to authorize a project specifically to repair

the system. The idea was not to turn to the BIA, which was not equipped to deal with a major water system infrastructure improvement project, either as a technical or funding matter. Based on our location in the Southwest and the work of the Bureau of Reclamation (BOR) working on significant projects in the region, we decided to work toward authorizing a project through the BOR. In 2000, Congress passed a bill which directed the Department of the Interior, through the BOR, to do a feasibility study on upgrading the system. See Public Law 106-243. The nation worked directly with the agency on the study which was completed in September of 2002.

The study determined that \$45 million would be needed to replace the existing water delivery and wastewater infrastructure. The report acknowledged the nation's efforts in taking on \$15 million of debt to improve portions of the system including: replacement of the diversion structures and pipeline at the river and up to the water treatment plant; building a new water treatment plant and expanding its capacity; repairing and replacing old water towers; replacement of infrastructure on the expansion Mundo Ranch property.

Based on this completed report, in 2001, our delegation introduced legislation to direct the Secretary of the Interior to repair and replace the infrastructure based on the recommendations in the feasibility report; the legislation also authorized the Department to expend funding to undertake this project. During this timeframe, with Senator Domenici's leadership, Congress appropriated \$2.5 million in the fiscal year 2002 Energy and Water Development bill for the project's planning, design and other work needed to prepare for initiation of the project's construction.

On December 13, 2002, President Bush signed into law Public Law 107-331, which includes as Title VIII our legislation, the Jicarilla Apache Reservation Rural Water System Act, which directs the Secretary of the Interior to proceed with a project to replace the defunct infrastructure, as outlined and recommended in the feasibility report, and which authorizes the appropriations of funds (\$45 million) for our project.

INADEQUATE FEDERAL FUNDING AND FAILURE TO IMPLEMENT THE LAW

Since the law's enactment, the nation has made repeated efforts to secure funding for the development of our project through the Bureau of Reclamation's account in the Energy and Water Development Appropriations bill and through the Executive budget process. In spite of our efforts, we were unable to secure funding in the fiscal year 2003 through fiscal year 2005 appropriations cycles. Finally, in fiscal year 2006, Congress provided \$250,000 for our project in the Energy and Water Development Appropriations bill. Last year, the House bill provided \$500,000 for our project, but since Congress did not complete this and other appropriations bills, it remains unclear whether we will receive any funding this year.

Our efforts have been further stymied by the Bush administration's failure to include any funds for our project in its annual budget submission to Congress. We have visited with the Office of Management and Budget, the Assistant Secretary for Water and Science and the BOR Commissioner urging them to implement the law and take action to help us address this serious public health crisis. Unfortunately, we have been told that the Bush administration is not willing to provide funding in its budget for "new starts" for water construction projects, and we were further informed by OMB that under their philosophy, local governments should bear the burden for public water system. Contrary to these "views", the law requires the Secretary to act, and the system at issue was federally owned and operated and its defunct condition was caused exclusively by Federal neglect so the nation should not be left with the burden of the Federal Government's liability. On top of these considerations, the United States has a trust responsibility to the nation, our citizens and our trust resources. These are all compelling reasons to include funding for this project in the budget process, and the administration must act to meet its obligations.

With respect to section 104 of Public Law 109-451, we believe the committee should provide the Department with additional direction to make sure our project is funded on an expeditious and emergency basis. We have waited far too long and our people have suffered enormously while the administration refuses to address this on-going and shameful situation on our Reservation, which was created by the Federal Government itself.

In fact, this new law explicitly recognizes that such factors as the "urgent and compelling need" for a rural water supply projects that are necessary to "improve the health" and/or "meet applicable requirements established by law" are factors for assessing the priority of such projects. Both of these factors apply to this project.

On a regional level, the nation has been a good neighbor and steward of our resources. We have helped water users in both the Rio Grande and San Juan basins

to resolve delicate water issues. We have a proven record of managing our lands and water. All we are asking is for support to ensure that, pursuant to statutory directives, the Department meets its obligations and provides the people on the Jicarilla Apache Reservation a safe and reliable source of drinking water for the betterment of our citizens.

CONCLUSION

Since the legislation's enactment in December 2002, the nation has been forced to borrow millions of additional dollars on the project because of the urgency and crisis facing our people. The nation used tax exempt bonds to pay for the repairs and has reached its debt capacity. It is time for the Federal Government to step up to the plate and meet its statutory and moral obligations owed to the nation. We are asking for your help today! Please hold the Department of the Interior accountable for constructing our project, as directed in the 2002 statute, and for requesting the necessary funding from Congress to do so. We also respectfully ask that the committee grant the nation's fiscal year 2008 \$3 million funding request for our project.

Thank you for your time and consideration of our views, concerns and requests.

PREPARED STATEMENT OF THE COLORADO RIVER BOARD OF CALIFORNIA

This testimony is in support of fiscal year 2008 funding for the Department of the Interior for the Title II Colorado River Basin Salinity Control Program (Public Law 93-320). By statute, Congress designated the Department of the Interior, Bureau of Reclamation (Reclamation) to be the lead agency for salinity control in the Colorado River Basin. This successful and cost effective program is carried out pursuant to the Colorado River Basin Salinity Control Act and the Clean Water Act (Public Law 92-500). California's Colorado River water users are presently suffering economic damages in the hundreds of million of dollars per year due to the River's salinity.

The Colorado River Board of California (Colorado River Board) is the State agency charged with protecting California's interests and rights in the water and power resources of the Colorado River system. In this capacity, California and the other six Basin States through the Colorado River Basin Salinity Control Forum (Forum), the interstate organization responsible for coordinating the Basin States' salinity control efforts, established numeric criteria in June 1975 for salinity concentrations in the River. These criteria were established to lessen the future damages in the Lower Basin States, as well as, assist the United States in delivering water of adequate quality to Mexico in accordance with Minute 242 of the International Boundary and Water Commission.

To date, Reclamation has been successful in implementing projects for preventing salt from entering the River system; however, many more potential projects for salt reduction have been identified that could be implemented through Reclamation's Basin-wide Salinity Control Program. In the past, the Forum has presented testimony to Congress in which it has stated that the rate of implementation of the program beyond that which has been funded in the past is essential. This is still the case, and California urges the Congress to fully fund Reclamation's continuing implementation of this critical program.

In 2000, Congress reviewed the salinity control program as authorized in 1995. Following hearings, and with the administration's support, the Congress passed legislation (Public Law 106-459) that increased the ceiling authorization for this program from \$75 million to \$175 million. Reclamation has received proposals to move the program ahead and the seven Basin States have agreed to up-front cost sharing on an annual basis, which adds 43 cents for every Federal dollar appropriated.

In recent years, the President's requests have dropped to below \$10 million. In the judgment of the Forum, this amount is inappropriately low. Water quality commitments to downstream United States and Mexican water users must be honored while the Basin States continue to develop their Compact apportioned waters from the Colorado River. Concentrations of salts in the River cause about \$330 million in quantified damage in the United States. However significant unquantified damages also, occur. For example, damages occur from:

- A reduction in the yield of salt sensitive crops and increased water use for leaching in the agricultural sector;
- A reduction in the useful life of galvanized water pipe systems, water heaters, faucets, garbage disposals, clothes washers, and dishwashers, and increased use of bottled water and water softeners in the household sector;

- An increase in the use of water for cooling, and the cost of water softening, and a decrease in equipment service life in the commercial sector;
- An increase in the use of water and the cost of water treatment, and an increase in sewer fees in the industrial sector;
- A decrease in the life of treatment facilities and pipelines in the utility sector;
- Difficulty in meeting wastewater discharge requirements to comply with National Pollutant Discharge Elimination System permit terms and conditions, an increase in desalination and brine disposal costs due to accumulation of salts in groundwater basins, and fewer opportunities for recycling and reuse of the water due to groundwater quality deterioration; and
- Increased use of imported water for leaching and the cost of desalination and brine disposal for recycled water.

For every 30 milligram per liter increase in salinity concentrations, there are \$75 million in additional damages in the United States. The Forum, therefore, believes implementation of the program needs to be accelerated to a level beyond that requested by the administration.

Some of the most cost-effective salinity control opportunities occur when Reclamation can improve irrigation delivery systems in a coordinated fashion with the activities of the U.S. Department of Agriculture's (USDA) program through working with landowners (irrigators) to improve on-farm irrigation systems. With the USDA's Environmental Quality Incentive Program, more on-farm funds are available and adequate funds for Reclamation are needed to maximize Reclamation's effectiveness in addressing water delivery system improvements. The Forum, at its meeting in October 2006, in Scottsdale, Arizona recommended a funding level of \$17,500,000 for Reclamation's Basin-wide Salinity Control Program to continue implementation of needed projects and begin to reduce the "backlog" of projects.

In addition, the Colorado River Board recognizes that the Federal Government has made significant commitments to the Republic of Mexico and to the seven Colorado River Basin States with regard to the delivery of quality water to Mexico. In order for those commitments to be honored, it is essential that in fiscal year 2008, and in future fiscal years, that Congress provide funds to the Bureau of Reclamation for the continued operation of completed projects.

The Colorado River is, and will continue to be, a major and vital water resource to the 18 million residents of southern California, including municipal, industrial, and agricultural water users in Ventura, Los Angeles, San Bernardino, Orange, Riverside, San Diego, and Imperial counties. Preservation and improvement of Colorado River water quality through an effective salinity control program will avoid the additional economic damages to users in California and the other States that rely on the Colorado River.

PREPARED STATEMENT OF THE COLORADO RIVER BASIN SALINITY CONTROL FORUM

This testimony is in support of funding for the Title II Colorado River Basin Salinity Control Program. The Congress has designated the Department of the Interior, Bureau of Reclamation (Reclamation), to be the lead agency for salinity control in the Colorado River Basin. This role and the authorized program were refined and confirmed by the Congress when Public Law 104-20 was enacted. A total of \$17,500,000 is requested for fiscal year 2008 to implement the needed and authorized program. Failure to appropriate these funds will result in significant economic damage in the United States and Mexico.

In recent years, the President's requests have dropped to below \$10 million. In the judgment of the Colorado River Basin Salinity Control Forum (Forum), this amount is inappropriately low. Water quality commitments to downstream United States and Mexican water users must be honored while the Basin States continue to develop their Colorado River Compact-apportioned waters. Concentrations of salts in the river cause about \$330 million in quantified damage in the United States with significantly greater unquantified damages. Damages occur from:

- a reduction in the yield of salt sensitive crops and increased water use for leaching in the agricultural sector,
- a reduction in the useful life of galvanized water pipe systems, water heaters, faucets, garbage disposals, clothes washers, and dishwashers, and increased use of bottled water and water softeners in the household sector,
- an increase in the use of water for cooling, and the cost of water softening, and a decrease in equipment service life in the commercial sector,
- an increase in the use of water and the cost of water treatment, and an increase in sewer fees in the industrial sector,
- a decrease in the life of treatment facilities and pipelines in the utility sector,

- difficulty in meeting wastewater discharge requirements to comply with National Pollutant Discharge Elimination System permit terms and conditions, and an increase in desalination and brine disposal costs due to accumulation of salts in groundwater basins,
- increased use of imported water for leaching and the cost of desalination and brine disposal for recycled water.

For every 30 mg/l increase in salinity concentrations, there is \$75 million in additional damages in the United States. The Forum, therefore, believes implementation of the program needs to be accelerated to a level beyond that requested by the President.

The program authorized by the Congress in 1995 has proven to be very successful and very cost effective. Proposals from the public and private sector to implement salinity control strategies have far exceeded the available funding and Reclamation has a backlog of proposals. Reclamation continues to select the best and most cost-effective proposals. Funds are available for the Colorado River Basin States' cost sharing for the level of Federal funding requested by the Forum. Water quality improvements accomplished under Title II of the Colorado River Basin Salinity Control Act also benefit the quality of water delivered to Mexico. Although the United States has always met the commitments of the International Boundary & Water Commission's (Commission) Minute No. 242 to Mexico with respect to water quality, the United States Section of the Commission is currently addressing Mexico's request for better water quality at the International Boundary.

Some of the most cost-effective salinity control opportunities occur when Reclamation can improve irrigation delivery systems at the same time that the U.S. Department of Agriculture's (USDA) program is working with landowners (irrigators) to improve the on-farm irrigation systems. Through the USDA Environmental Quality Incentives Program, adequate on-farm funds appear to be available and adequate Reclamation funds are needed to maximize the effectiveness of the effort. These salinity control efforts have secondary water conservation benefits at the point of use and downstream at the point of reuse.

OVERVIEW

In 2000, the Congress reviewed the program as authorized in 1995. Following hearings, and with administration support, the Congress passed legislation that increased the ceiling authorized for this program by \$100 million. Reclamation has received cost-effective proposals to move the program ahead and the Basin States have funds available to cost-share up-front.

The Colorado River Basin Salinity Control Program was originally authorized by the Congress in 1974. The Title I portion of the Colorado River Basin Salinity Control Act responded to commitments that the United States made, through Minute No. 242, to Mexico concerning the quality of water being delivered to Mexico below Imperial Dam. Title II of the Act established a program to respond to salinity control needs of Colorado River water users in the United States and to comply with the mandates of the then newly legislated Clean Water Act. Initially, the Secretary of the Interior and Reclamation were given the lead Federal role by the Congress. This testimony is in support of adequate funding for the Title II program.

After a decade of investigative and implementation efforts, the Basin States concluded that the Salinity Control Act needed to be amended. The Congress revised the Act in 1984. That revision, while leaving implementation of the salinity control policy with the Secretary of the Interior, also gave new salinity control responsibilities to the USDA and to the Bureau of Land Management (BLM). The Congress has charged the administration with implementing the most cost-effective program practicable (measured in dollars per ton of salt removed). The Basin States are strongly supportive of that concept as the Basin States cost share 30 percent of Federal expenditures up-front for the salinity control program, in addition to proceeding to implement salinity control activities for which they are responsible in the Colorado River Basin.

The Forum is composed of gubernatorial appointees from Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming. The Forum has become the seven-State coordinating body for interfacing with Federal agencies and the Congress to support the implementation of the program necessary to control the salinity of the river system. In close cooperation with the Environmental Protection Agency (EPA) and pursuant to requirements of the Clean Water Act, every 3 years the Forum prepares a formal report analyzing the salinity of the Colorado River, anticipated future salinity, and the program elements necessary to keep the salinity at or below the concentrations in the river system in 1972 at Imperial Dam, and below Parker and Hoover Dams.

In setting water quality standards for the Colorado River system, the salinity concentrations at these three locations have been identified as the numeric criteria. The plan necessary for controlling salinity and reducing downstream damages has been captioned the "Plan of Implementation." The 2005 Review of water quality standards includes an updated Plan of Implementation. The level of appropriation requested in this testimony is in keeping with the agreed upon plan. If adequate funds are not appropriated, significant damages from the higher salt concentrations in the water will be more widespread in the United States and Mexico.

JUSTIFICATION

The \$17,500,000 requested by the Forum on behalf of the seven Colorado River Basin States is the level of funding necessary to proceed with Reclamation's portion of the Plan of Implementation. In July of 1995, the Congress amended the Colorado River Basin Salinity Control Act. The amended Act gives Reclamation new latitude and flexibility in seeking the most cost-effective salinity control opportunities, and it provides for utilization of proposals from project proponents, as well as more involvement from the private as well as the public sector. The result is that salt loading is being prevented at costs often less than half the cost under the previous program. The Congress recommitted its support for the revised program when it enacted Public Law 106-459. The Basin States' cost sharing up-front adds 43 cents for every Federal dollar appropriated. The federally chartered Colorado River Basin Salinity Control Advisory Council, created by the Congress in the Salinity Control Act, has met and formally supports the requested level of funding. The Basin States urge the Energy and Water Development Subcommittee to support the funding as set forth in this testimony.

ADDITIONAL SUPPORT OF FUNDING

In addition to the funding identified above for the implementation of the most recently authorized program, the Forum urges the Congress to appropriate funds requested by the administration to continue to maintain and operate salinity control facilities as they are completed and placed into long-term operation. Reclamation has completed the Paradox Valley unit which involves the collection of brines in the Paradox Valley of Colorado and the injection of those brines into a deep aquifer through an injection well. The continued operation of this project and the Grand Valley Unit will be funded primarily through the Facility Operations activity.

The Forum also supports funding to allow for continued general investigation of the Salinity Control Program as requested by the administration for the Colorado River Water Quality Improvement Program. It is important that Reclamation have planning staff in place, properly funded, so that the progress of the program can be analyzed, coordination between various Federal and State agencies can be accomplished, and future projects and opportunities to control salinity can be properly planned to maintain the water quality standards for salinity so that the Basin States can continue to develop their Colorado River Compact-apportioned waters.

PREPARED STATEMENT OF THE SAN DIEGO COUNTY WATER AUTHORITY

Dear Chairman Dorgan: your support is needed to secure adequate funding for the Department of Interior for the Colorado River Basin Salinity Control Program (Program). To continue the essential work of the Program, the Water Authority urges funding of \$17.5 million for fiscal year 2008. By statute, Congress designated the Department of Interior, Bureau of Reclamation (Reclamation) to be the lead agency for salinity control in the Colorado River Basin. The Program is carried out through the Colorado River Basin Salinity Control Act (1974) (Public Law 93-320) and the Clean Water Act.

The salinity control projects through the Program benefit water users from seven States through more efficient water management and reduced salinity concentrations in Colorado River water. The Colorado River is the primary and single most important source of drinking water for more than 3 million people in San Diego County. Excess salinity causes economic damages in the San Diego region worth millions of dollars annually.

Notably, concentrations of salts in the Colorado River annually cause about \$330 million in quantified damages in the United States. For every 30 milligrams per liter increase in salinity concentrations there are \$75 million in additional damages in the United States. Locally, impacts of excess salinity in the San Diego region include, but are not limited to, the following:

- Reduced crop yields, impacting more than \$1 billion of agricultural products in the San Diego region.
- Decreased useful life of commercial and residential water pipe systems, water heaters, faucets, garbage disposals, clothes washers, and dishwashers.
- Increased household use of expensive bottled water and water softeners.
- Increased water treatment facility costs and a decrease in the life of the treatment facilities.
- Increased treatment to meet Federal and California wastewater discharge requirements.
- Fewer opportunities for water recycling due to excess salt in the product water, which limits usefulness for commercial and agricultural irrigation.

To date, Reclamation has been successful in implementing projects for preventing salt from entering the River system; however, many potential projects for salt reduction have been identified that could be implemented through the Program. The rate of implementation of the Program beyond that which has been funded in the past is essential, and the Water Authority urges Congress to fully fund Reclamation's continuing implementation of this critical program.

Some of the most cost-effective salinity control opportunities occur when Reclamation can improve irrigation delivery systems in a coordinated fashion with the activities of the U.S. Department of Agriculture's Environmental Quality Incentive Program through working with landowners (irrigators) to improve on-farm irrigation systems. Adequate funds from Reclamation are needed to maximize this coordinated effort and effectiveness in addressing water delivery system improvements.

The Program has proven to be a very cost-effective approach to mitigate the impacts of increased salinity in the Colorado River, which is an investment that avoids millions of dollars in economic damages caused by excess salinity. In addition, the Program assists the delivery of quality water to Mexico in accordance with Minute 242 of the 1944 Water Treaty.

The Colorado River Basin Salinity Control Forum (California and the other six Basin States) has recommended that a funding level of \$17.5 million for Reclamation's Basin-wide Salinity Control Program is necessary and appropriate to continue implementation of needed projects.

The Water Authority supports the recommendation for funding and urges this subcommittee to support this level of funding for fiscal year 2008. The Water Authority appreciates your assistance in securing adequate funding for this vital water resource.

PREPARED STATEMENT OF THE MNI WICONI PROJECT

Fiscal Year 2008 Request

The Mni Wiconi Project beneficiaries respectfully request appropriations totaling \$41.113 million for fiscal year 2008. The request consists of \$30.909 million for construction and \$10.204 million for operation and maintenance (OMR) activities) in fiscal year 2008:

[In millions of dollars]

	Fiscal Year—		
	2007 House	2008 Budget	2008 Request
Construction	22.914	.....	30.909
OMR	9.256	.....	10.204
Total .....	.....	.....	41.113

Construction Funds

Construction funds would be utilized as follows:

Project area	Millions
Ogjala Sioux Rural Water Supply System:	
Core	\$5.400
Distribution	11.085
West River/Lyman-Jones RWS	6.842
Rosebud RWS	6.482
Lower Brule RWS .....	.....

Project area	Millions
Reclamation Oversight	1.100
Total	30.909

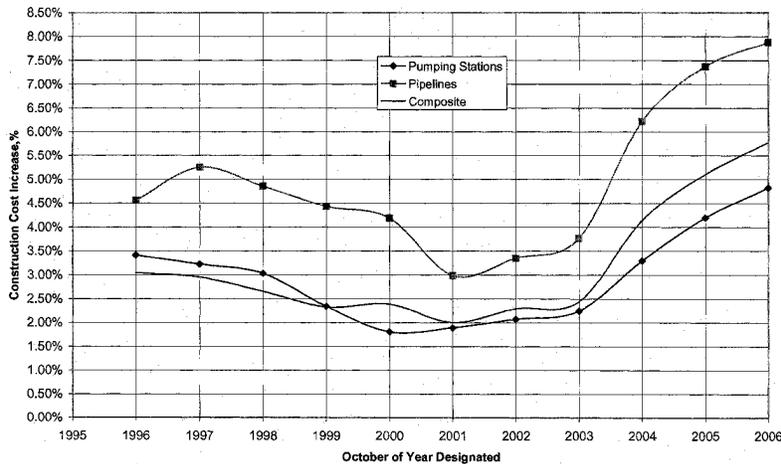
As shown on the table below, the Project will be 73 percent complete at the end of fiscal year 2007. Construction funds remaining to be spent after fiscal year 2007 will total \$119.184 million.

Amendment of the Project authorization is proposed for the first session of the 110th Congress to extend the construction completion date from fiscal year 2008 through fiscal year 2012. Additional administrative, overhead and other costs of the extension are projected at \$14.635 million, bringing total remaining costs at the end of fiscal year 2007 to \$133.820 million (in October 2006 dollars).

Cost indexing over the last 5 years has averaged from 4.83 percent for pumping plants to 7.88 percent for pipelines, which are the notable Project components yet to be completed (see chart below). Assuming an average 5 percent inflation in construction costs during the remaining 5 years necessary to complete the Project, average funding of \$30.909 million is required to complete the Project by fiscal year 2012. Costs of extending the Project and cost indexing from fiscal year 2008 through fiscal year 2012 increase the remaining costs to \$154.545 million. Therefore, the funding request for fiscal year 2008 is based on the annual average of \$30.909 million necessary to complete the Project by the end of fiscal year 2012.

	Amount
Total Federal Construction Funding (Oct 2006)	\$445,718,000
Estimated Federal Spent Through Fiscal Year 2007	\$326,533,882
Percent Spent Through Fiscal Year 2007	73.26
Amount Remaining after 2007:	
Total Authorized (Oct 2006)	\$119,184,118
Overhead Adjustment for Extension to Fiscal Year 2012	\$133,819,527
Adjustment for 5 percent Annual Inflation	\$154,544,690
Completion Fiscal Year (Statutory Fiscal Year 2008; Public Law 107-367)	2012
Years to Complete	5
Average Annual Required for Finish	\$30,908,938

5-YEAR RUNNING AVERAGE OF CONSTRUCTION COST INCREASES
RECLAMATION INDICES



Oglala Sioux Rural Water Supply System

All of the Pine Ridge Indian Reservation, parts of the Rosebud Indian Reservation and parts of West River/Lyman-Jones remain without delivery of Missouri River

water from the Oglala Sioux Rural Water Supply System (OSRWSS) core pipeline, the central element of the Mni Wiconi Project. The OSRWSS core pipeline will supply four rural water systems, including three Indian Reservations.

The fiscal year 2008 funding level will connect Missouri River water to the central portion of the Pine Ridge Indian Reservation at Kyle where it can deliver water to OSRWSS distribution systems built previously. This will be the first opportunity to serve a significant portion of the population on the Pine Ridge Indian Reservation with Missouri River water and discontinue use of inadequate and unsafe groundwater supplies. Only 31 percent of the distribution system on the Pine Ridge Indian Reservation is complete and 69 percent remains to be completed.

OSRWSS will use \$5,600,000 in fiscal year 2007 funds to begin construction of the pipeline link between the OSRWSS North core and South core. When completed, this essential pipeline will permit the delivery of water to the Pine Ridge Indian Reservation and parts of West River/Lyman-Jones by alternative pipeline routes, according to the original strategy in the Final Engineering Report.

The Oglala Sioux Tribe supports the funding request of West River/Lyman-Jones for fiscal year 2008 which focuses on building the OSRWSS North Core between Hayes toward Phillip in the West River/Lyman-Jones service area. The intent is to complete the OSRWSS North Core and all other OSRWSS core facilities in fiscal year 2008. West River/Lyman-Jones is acting as the Tribe's contractor on the OSRWSS North Core.

The fiscal year 2008 funding request will complete the OSRWSS core. Earlier stages of the OSRWSS core facilities served the Lower Brule Indian Reservation, Rosebud Indian Reservation and eastern regions of West River/Lyman-Jones beginning in year 2000. Missouri River water was delivered to the northeastern corner of the Pine Ridge Indian Reservation for the first time in fiscal year 2007 but only the far northeastern corner of the Reservation was reachable. Fiscal year 2008 funding of \$11.085 million will permit construction of the main or "backbone" pipeline within the Reservation to Kyle and delivery of Missouri River water to distribution systems built in advance.

West River/Lyman-Jones Rural Water System

Proposed fiscal year 2008 construction for WR/LJ includes Phase 2 of the North Core and distribution pipelines from existing core pipeline to WR/LJ members between Ft. Pierre and the city of Philip. Phase 1 of the North Core was constructed in fiscal year 2006 and distribution pipelines are being extended to 200 WR/LJ members with fiscal year 2006 & fiscal year 2007 funding. Funding provided in fiscal year 2008 will complete construction of distribution pipelines that can be served by Phase 1 of the North Core and initiate construction of Phase 2.

The North Core pipeline is the permanent water source for half of the WR/LJ membership. That membership includes the cities of Wall and Philip which are presently served from wells. Construction of Phase 2 of the North Core remains a high priority because extended drought conditions in Western South Dakota threaten production from these groundwater sources. Upon completion the North Core will also provide an alternate source of water to the South Core pipeline serving the Oglala Sioux Tribe.

WR/LJ members proposed to be served in fiscal year 2008 are in desperate need of water. Recent surveys indicate that most of those members haul water for domestic use and half of them haul water for livestock. Completion of a reliable supply of water meeting Safe Drinking Water Act (SDWA) standards offers immediate relief and economic assistance to this drought affected area.

Rosebud Rural Water System (Sicangu Mni Wiconi)

The Rosebud Sioux Tribe and the Sicangu Mni Wiconi have made great strides in improving the quality of life for people connected to the Mni Wiconi Project. The progress made has not been without sacrifice and many people remain to be served. Our plans for fiscal year 2008 address both these situations.

The major initiative for the Sicangu Mni Wiconi is the completion of the Surface Water Improvements. The history of the Surface Water Improvements goes back to 1998 when the Tribe agreed to export groundwater from the Rosebud Well Field, in Southern Todd County to drought stricken Mellette County as an interim source of supply. A 12-inch pipeline was constructed from near the Well Field to the town of White River with the understanding that a second pipeline and pump stations would follow and the facilities would bring high quality surface water to Todd County.

Providing high quality groundwater to WR/LJ and their customers in Mellette County was not part of the original plan for the Sicangu Mni Wiconi. In addition, the city of Mission has come to rely on water from the Rosebud Well Field to meet

their demands during periods of peak use in the summer months. The combination of these two factors has resulted in an immense burden on the Well Field. In summer months during periods of peak demands the wells pump constantly and do not have adequate time to recover.

The easements for the parallel pipeline were obtained in 1998 and construction of the new pipeline will soon begin. However, available funds in fiscal year 2007 are not sufficient for completion and the majority of the Tribe's fiscal year 2008 request will go towards completion of the pipeline and the two pump stations required to bring the water to Todd County. These improvements will eliminate the stress to the Rosebud Well Field and provide high quality surface water from Mni Wiconi to Eastern Mellette and Todd County.

The remainder of the funding request is for service lines and connections. The availability of high quality water has allowed people to inhabit lands that were allotted to their grandparent or great grandparent. People are anxious to live on their land and new homes are "sprouting up" around the Sicangu Mni Wiconi pipelines after they are completed.

These smaller pipelines are also used to provide water to livestock. The livestock business on range lands is an economic pillar for the Rosebud Reservation. By providing water, the Mni Wiconi Project helps improve the utilization of these lands, thereby improving the situation for the livestock operator, the landowner and the reservation economy.

Mni Wiconi means "Water is Life" and we see that this is true on the Rosebud Reservation. Help us improve the quality of life for the people that are still waiting.

Lower Brule Rural Water System—Distribution

The Lower Brule Rural Water System (LBRWS) has gained the support of the other sponsors to complete its portion of the Project prior to the completion of the other portions of the Project. This agreement to complete the LBRWS first is due to the relatively small portion of the Project that the LBRWS represents as well as the ability to save \$1.5 million to the Project as a whole by doing so. As a result, LBRWS will be completing its portion of the Project during 2007.

The LBRWS continues to be grateful to the other sponsors and Congress for their cooperation and support in completing the funding of the LBRWS in this manner, and especially the South Dakota delegation past and present, for their continued support of this truly needed project. It should be noted, however, that this will not end LBRWS's involvement in the Project. LBRWS will continue to work with and support the other sponsors in seeing the entire Project come to fruition.

Operation, Maintenance and Replacement Budget

The sponsors will continue to work with the Bureau of Reclamation to ensure that budgets are adequate to properly operate, maintain and replace (OMR) the core and distribution systems. The sponsors will also continue to manage OMR expenses to achieve a balance between construction and OMR. The Project has been treating and delivering more water each year from the OSRWSS Water Treatment Plant near Fort Pierre. Completion of significant core and distribution pipelines has resulted in more deliveries to more communities and rural users. The need for sufficient funds to properly operate and maintain the functioning system throughout the Project has grown as the Project has now reached 73 percent completion. The OMR budget must be adequate to keep pace with the system that is placed in operation.

The Mni Wiconi Project tribal beneficiaries (as listed below) respectfully request appropriations for OMR in fiscal year 2008 in the amount of \$10,204,000:

System	Fiscal year 2008
OSRWSS Off-Reservation Core	\$2,300,000
OSRWSS Distribution	2,500,000
RRWS	2,350,000
LBRWS	1,450,000
Reclamation	1,604,000
Total, Mni Wiconi	10,204,000

PREPARED STATEMENT OF THE MNI WICONI PROJECT

Senator Dorgan: We, the Mni Wiconi Project sponsors submit this letter to you in order to supplement our fiscal year 2008 Mni Wiconi Project Formal Testimony. Hopefully, this Supplemental Testimony will assist all members of the sub-

committee on Energy and Water Development to further understand the truly unique needs of the Mni Wiconi Project.

This Project covers much of the area of western South Dakota that is the Great Sioux Reservation established by the Treaty of 1868. Since the separation of the Reservation in 1889 into smaller more isolated reservations, including Pine Ridge, Rosebud and Lower Brule, relations between the Lakota population and the non-Lakota settlers on Great Sioux Reservation lands have been improving in successive generations. The Mni Wiconi Project is perhaps the most significant opportunity in more than a century to bring the diverse cultures of the two societies together for a common good. After all, "Mni Wiconi" is a Lakota phrase meaning "water is life." Much progress has been made due to the good faith and genuine efforts of both the Lakota and non-Lakota sponsors. The Project is an historic basis for renewed hope and dignity among the Lakota people. It is a basis for substantive improvement in relationships.

Each year the Mni Wiconi Project sponsor testimony addresses the fact that the project beneficiaries, particularly the three Indian Reservations, have the lowest income levels in the Nation. The health risks to our people from drinking unsafe water are compounded by reductions in health programs. We respectfully submit that our Project is unique and that no other project in the Nation has greater human needs. Poverty in our service areas is consistently deeper than elsewhere in the Nation. Health effects of water borne diseases are consistently more prevalent than elsewhere in the Nation, due in part to (1) lack of adequate water in the home and (2) poor water quality where water is available. Higher incidences of impetigo, gastroenteritis, shigellosis, scabies and hepatitis-A are well documented on the Indian Reservations of the Mni Wiconi Project area. Progress has been made in reducing the occurrence of these diseases.

At the beginning of the third millennium one cannot find a region in our Nation in which social and economic conditions are as deplorable. These circumstances are summarized in Table 1.¹ Mni Wiconi builds the dignity of many, not only through improvement of drinking water, but also through direct employment and increased earnings during planning, construction, operation and maintenance and from economic enterprises supplied with Project water. We urge the subcommittee to address the need for creating jobs and improving the quality of life on the Pine Ridge, Lower Brule and Rosebud Indian Reservations of the project area.

TABLE 1.—PROFILE OF SELECTED ECONOMIC CHARACTERISTICS—2000

Indian Reservation/State	2000 population	Change from 1990 (percent)	Income		Families below poverty (percent)	Unemployment (percent)
			Per capita (dollars)	Median household (dollars)		
Pine Ridge Indian Reservation	15,521	27.07	6,143	20,569	46.3	16.9
Rosebud Indian Reservation	10,469	7.97	7,279	19,046	45.9	20.1
Lower Brule Indian Reservation	1,353	20.48	7,020	21,146	45.3	28.1
State of South Dakota	754,844	8.45	17,562	35,282	9.3	3.0
Nation	281,421,906	13.15	21,587	41,994	9.2	3.7

Employment and earnings among the Lakota people of the Project area are expected to positively impact the high costs of health-care borne by the United States and the Tribes. Our data suggest clear relationships between income levels and Federal costs for heart disease, cancer and diabetes. During the life of the Mni Wiconi Project, mortality rates among the Lakota people in the Project area for the three diseases mentioned will cost the United States and the Tribes more than \$1 billion beyond the level incurred for these diseases among comparable populations in the non-Lakota community within the Project area.

While this Project alone will not raise income levels to a point where the excessive rates of heart disease, cancer and diabetes are significantly diminished, the employment and earnings stemming from the Project will, nevertheless, reduce mortality rates and costs of these diseases. Please note that between 1990 and 2000 per capita income on Pine Ridge increased from \$3,591 to \$6,143, and median household income increased from \$11,260 to \$20,569, due in large part to this Project, albeit not sufficient to bring a larger percentage of families out of poverty (Table 1).

¹Table 1 was based on census data that understates population and poverty on the reservations and overstates income when compared with Interior sources. The purpose of Table 1 is to compare statistics from a single source between decades, namely the United States Census, but use of the data does not imply acceptance of census statistics by the Tribes.

Financial support for the Lakota membership has already been subjected to drastic cuts in funding programs through the Indian Health Service and the Bureau of Indian Affairs. This Project is a source of strong hope that helps off-set the loss of employment and income in other programs and provide for an improvement in health and welfare. Tribal leaders have seen that Welfare Reform legislation and other budget cuts nation-wide have created a crisis for tribal government because tribal members have moved back to the reservations in order to survive.

The Mni Wiconi Project Act (Public Law 100-516, as amended) provides that the United States will work with us:

—the United States has a trust responsibility to ensure that adequate and safe water supplies are available to meet the economic, environmental, water supply and public health needs of the Pine Ridge, Rosebud and Lower Brule Indian Reservations . . .

Lakota support for this project from the Oglala, Rosebud and Lower Brule Sioux Tribes has not come easily because the historical experience of broken commitments to the Lakota people by the Federal Government is difficult to overcome. The argument was that there is no reason to trust the Federal Government and that the respective Sioux Tribal Governments are being used to build the non-Lakota segments of the project and the Lakota segments would linger to completion. These arguments have been overcome by better planning, an amended authorization and hard fought agreements among the parties. The subcommittee is respectfully requested to take the steps necessary to complete the critical elements of the Project proposed for fiscal year 2008.

PREPARED STATEMENT OF THE COLORADO RIVER COMMISSION OF NEVADA

As a Nevada representative of the Colorado River Basin Salinity Control Forum, the Colorado River Commission of Nevada (CRC) supports funding the fiscal year 2008 budget request for \$17,500,000 for the Bureau of Reclamation's Colorado River Basin Salinity Control Program. The CRC urges the Congress to appropriate funds requested by the Administration to continue to maintain and operate salinity control facilities as they are completed and placed into long-term operations. Reclamation has completed the Paradox Valley unit which involves the collection of brines in the Paradox Valley of Colorado and the injection of those brines into a deep aquifer through an injection well. The continued operation of this project and the Grand Valley Unit will be funded primarily through the Facility Operations activity. The CRC also supports funding to allow for continued general investigation of the Salinity Control Program as requested by the Administration for the Colorado River Water Quality Improvement Program.

Salinity remains one of the major problems in the Colorado River. Congress has recognized the need to confront this problem with its passage of Public Law 93-320 and Public Law 98-569. Your support of the Forum's current funding recommendations in support of the Colorado River Basin Salinity Control Program is essential to move the program forward so that the congressionally directed salinity objectives embodied in Public Law 93-320 and Public Law 98-569 are achieved.

PREPARED STATEMENT OF THE WESTERN COALITION OF ARID STATES (WESTCAS)

The Western Coalition of Arid States (WESTCAS) would like to submit the following statement concerning the fiscal year 2008 Budget Request for the Department of the Interior's Bureau of Reclamation. My name is Larry Libeu and I am the President of the organization.

WESTCAS is a coalition of approximately 125 water and wastewater agencies, cities and towns, and professional associated focused on water quality and quantity issues in the States of Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon and Texas.

The Bureau's overall Budget for fiscal year 2008 is \$958.4 million. The portion of the Budget that WESTCAS has interest in, the Water and Related Resources Account has \$816.1 million dollars, which represents a decrease of \$17,227,000 from fiscal year 2007. It is within this account that Water Reclamation/Reuse Title XVI is funded. The proposed funding level for fiscal year 2008 is \$10.1 million. The Title XVI program was authorized by Public Law 102-575. This program provides a central focus for Reclamation's efforts and expertise in planning, environmental review and construction of new projects.

The Title XVI water recycling program within the BOR provides a excellent cost-share mechanism for helping to drought proof the West. Projects developed by this program allow agencies to reduce their dependence on the scarce imported supplies

from the Colorado River and other western watersheds. WESTCAS believes that increased funding for the program is needed to begin reducing the ever increasing backlog of authorized, but unfunded projects as well as assist in addressing the serious drought conditions throughout Reclamation states. We believe that funding this at least at the level of \$50 million a year is necessary to clear the approximate backlog of \$350 million for this program.

We have two caveats in this regard. We believe the Committee should provide directive language to the Bureau of Reclamation to convene a meeting of all of the project sponsors for authorized projects in this program, ask them to bring their construction schedules and financing information so a 5 year schedule for completion can be worked out consistent with increased levels of funding for the program. We would be pleased to lend our expertise and experience to such a meeting. We further believe, and we are just as disappointed as the Committee, that the Bureau should have already produced an overall 5 year funding program consistent with the directive in last years Committee report.

Our second caveat is for the Appropriations Committee to have a dialogue with the authorizing Committees regarding this program indicating that any new project for the Title 16 program will not be funded until after the backlog of all ready authorized projects is complete. Further, in order to receive funding, the priority should be set by those projects that are consistent with the individual State's Water Plan, and recommended and supported by that State's Governor and shall not have elements funded by other Federal agency programs. Priority shall be placed on cost effectiveness of the water and technology being developed and how the project fits into the comprehensive water plan for the area.

Another program that WESTCAS would recommend increased funding is the Colorado River Salinity Control Program, Title II. Increased agricultural use and drainage as well as continued degradation caused by natural elements such as shale and return flows from urban centers are creating an increased salinity content to the waters of the Colorado River. WESTCAS firmly believes that this element of the Bureau's budget should be funded at the \$26 million level. This would represent an increase of \$13 million over the proposed fiscal year 2008 budget amount.

WESTCAS supports increased funding for the CAL-FED program. The fiscal year 2008 budget indicates a decrease from prior years. WESTCAS strongly recommends that this item in the Bureau's budget be increased to \$40.52 million. The current proposed budget has funding set at \$31.75 million. WESTCAS would recommend the following adjustments in the BOR CAL-FED funding proposal: Los Vaqueros Storage Study, + \$3.27 million, Lower San Joaquin River Fish Screen Projects, + \$3.50 million, Refuge Water Supply Diversification, + \$.50 million, Environmental Water Account + \$3.0 million, and Administration - \$1.50 million. With these adjustments the new budget amount would be \$40.52 million.

WESTCAS also would recommend increased funding for the Middle Rio Grande Project to \$24 million and the Lower Colorado River Operations Program to \$17 million.

We would like to be able to support funding for the Bureau's Water 2025 program, but absent authorization we withhold our support at this time. We do believe greater integrated resource planning and water resource planning is need for the West. We would hope the Committee would consider using the information that is being developed by the Western States Water Council report in this area as a tool for evaluation future budget requests.

We also believe the Bureau of Reclamation should be doing more with regard to drought preparedness. The title XVI program is important in this regard, but it is not intended to be used throughout the West. Relying on an "emergency" approach to drought is not an effective way to address this issue. There are emergencies associated with drought, but better planning and an ongoing well funded program in each of the states is needed. We recommend at least \$1 million per state to address this ongoing issue.

We believe that overall a \$150 million increase for the Bureau's Water and Related Resources Account would be helpful in addressing the water resource needs of the West before water quality and quantity issues become a greater crisis as the infrastructure ages, the population grows and environmental needs continue to be addressed.

PREPARED STATEMENT OF THE GARRISON DIVERSION CONSERVANCY DISTRICT

Mr. Chairman, members of the committee: My name is Dave Koland; I serve as the general manager of the Garrison Diversion Conservancy District. The mission of Garrison Diversion is to provide a reliable, high quality and affordable water sup-

ply to the areas of need in North Dakota. Over 77 percent of our state residents live within the boundaries of the District. I would like to comment on the impact the President's fiscal year 2008 budget request for the Garrison Diversion Unit (GDU) has on the effort to provide reliable, high quality and affordable water supplies to the citizens of North Dakota.

The President's fiscal year 2008 budget request was pitifully inadequate in meeting the commitments the Federal Government has made to North Dakota. In return for accepting a permanent flood on 500,000 acres of prime North Dakota river valley the Federal Government promised the State and tribes that they would be compensated as the dams were built. The dams were completed over 50 years ago and still we wait for the promised compensation. At the rate of payment the President's budget proposes the Federal Government will not even be able to stay current with the indexing applied by law on their commitment to North Dakota.

The Municipal Rural & Industrial (MR&I) program was started in 1986 after the Garrison Diversion Unit (GDU) was reformulated from a million-acre irrigation project into a multipurpose project with emphasis on the development and delivery of municipal and rural water supplies. The statewide MR&I program has focused on providing grant funds for water systems that provide water service to previously unserved areas of the State. The State has followed a policy of developing a network of regional water systems throughout the State. Every rural water system that has been built in North Dakota is still operating. They are providing safe, clean water to their members, paying 100 percent of the operation and maintenance costs, reducing their debt, putting money in reserve, complying with every State and Federal regulation, and doing so with a stable, affordable rate structure.

North Dakota's Success Story

Rural water systems are being constructed using a unique blend of local expertise, state financing, rural development loans, MR&I grant funds to provide an affordable rate structure, and the expertise of the Bureau of Reclamation (BOR) to deal with design and environmental issues. The projects are successful because they are driven by a local need to solve a water quantity or quality problem. The solution to the local problem is devised by the community being affected by the problem. The early, local buy-in helps propel the project through the tortuous pre-construction stages.

The MR&I program has been so successful and so important to North Dakota that the North Dakota Legislature loaned the program \$18 million to help deal with the severe lag time that has developed in the Federal appropriations process.

The desperate need for clean, safe water is evidenced by the willingness of North Dakota's rural residents to pay water rates well above the rates EPA considers affordable. The EPA Economic Guidance Workbook states that rates greater than 1.5 percent of the median household income (MHI) are not only unaffordable, but also "may be unreasonable."

The average monthly cost on a rural water system for 6,000 gallons of water is currently \$48.97. The water rates in rural North Dakota would soar to astronomical levels without the 75 percent grant dollars provided by the MR&I program. For instance, current rates would have to average a truly unaffordable \$134.19/month or a whopping 3.8 percent of the MHI. Rates would have ranged as high as \$190.80/month or a prohibitive 5.3 percent of MHI without the assistance of the MR&I program.

The people waiting for water in our rural communities are willing to pay far more than what many consider an affordable, or even reasonable, price for clean, safe water. But there is a limit to how much they should be expected to pay.

Budget Impacts On Garrison Diversion Unit

Let me begin by reviewing the various elements within the current budget request and then discuss the impacts that the current level of funding will have on the program.

The President's budget request for fiscal year 2008 is \$20.22 million. This year, Garrison Diversion Conservancy District is asking the Congress to appropriate a total of \$65 million for the GDU. Attachment 1 is a breakdown of the elements in Garrison Diversion's request. To discuss this in more detail, I must first explain that the GDU budget consists of several different program items. For ease of discussion, I would like to simplify the breakdown into three major categories. The first I would call the base operations portion of the budget request. This amount is nominally \$23 million annually when you include underfinancing. However, as more Indian MR&I projects are completed, the operation and maintenance costs for these projects will increase and create a need that will need to be addressed.

The second element of the budget is the MR&I program. This consists of both Indian and non-Indian funding. The Dakota Water Resources Act contains an addi-

tional \$200 million authorization for each of these programs. It is our intent that each program reaches the conclusion of the funding authorization at the same time. We believe this is only fair.

The MR&I program consists of a number of projects that are independent of one another. They are generally in the \$20 million category. Some are, of course, smaller and others somewhat larger, but one that is considerably larger is the Northwest Area Water Supply Project (NAWS). The first phase of that project is under construction. The optimum construction schedule for completion of the first phase has been determined to be 5 years. The total cost of the first phase is \$125 million. At a 65 percent cost share, the Federal funding needed to support that project is \$81 million. On the average, the annual funding needed for that project alone is over \$16 million. Several other projects have been approved for future funding and numerous projects on the reservations are ready to begin construction. These requests will all compete with one another for funding. It will be a delicate challenge to balance these projects. Nevertheless, we believe that once a project is started, it needs to be pursued vigorously to completion. If it is not, we simply run the cost up and increase the risk of incompatibility among the working parts.

An example of the former would be the certain impact of the increased cost of construction over time through inflation but also by protracting the engineering and administration costs.

The third element of the budget is the Red River Valley Water Supply Project (RRVWSP) construction phase. The Dakota Water Resources Act authorized \$200 million for the construction of facilities to meet the water quality and quantity needs of the Red River Valley communities. Over 42 percent of North Dakota's citizens rely on the drought-prone Red River of the North as their primary or sole source of water. It is my belief that the final plans and authorizations, if necessary, should be expected in approximately 3 years. This will create an immediate need for greater construction funding.

This major project, once started, should also be pursued vigorously to completion. The reasons are the same as for the NAWS project and relate to good engineering and construction management. Although difficult to predict at this time, it is reasonable to plan that the RRVWSP features, once started, should be completed in approximately 3 years. This creates the need for additional funding of \$30 million/year starting in fiscal year 2009.

Using these two projects as examples frames the argument for a steadily increasing budget. There is a need to accelerate the MR&I program now to assure the timely completion of the NAWS project and then to accommodate the need for additional construction funds when the RRVWSP construction is underway.

It is simply good management to blend these needs to avoid drastic hills and valleys in the budget requests. By accelerating the construction of NAWS and other projects which are ready for construction during the next few years, some of the pressure will be off when the RRVWSP construction funding is needed. A smoother, more efficient construction funding program over time will be the result.

Attachment 2 shows such a program. It begins with a \$65 million budget this year and gradually builds over time to over \$140 million when the RRVWSP construction could be in full swing (fiscal year 2010). Mr. Chairman, this is why we believe it is important that the budget resolution recognize that a robust increase in the budget allocation is needed for the Bureau of Reclamation. We hope this testimony will serve as at least one example of why we fully support the efforts to increase the overall allocation in the Bureau of Reclamation Water and Related Resources Account in fiscal year 2008 to a total of \$1 billion.

The Bureau of Reclamation, Rural Development, Garrison Diversion Conservancy District, North Dakota State Water Commission and local rural water districts have formed a formidable alliance to deal with the lack of a high quality, reliable water source throughout much of North Dakota. This cost-effective partnership of local control, state-wide guidance and Federal support has provided safe, clean, potable water to hundreds of communities and thousands of homes across North Dakota.

ATTACHMENT 1—GARRISON DIVERSION UNIT (GDU) JUSTIFICATION FOR \$65 MILLION
APPROPRIATION FISCAL YEAR 2008

North Dakota's Municipal, Rural and Industrial (MR&I) water supply program funds construction projects state-wide under the joint administration of the Garrison Diversion Conservancy District (GDCD) and the State Water Commission (SWC).

Northwest Area Water Supply Project (NAWS) is under construction after 16 years of study and diplomatic delay. Construction costs (Federal) are estimated to be \$81 million. Designs are based on a 5-year construction period; thus, over \$16 million is needed for NAWS alone.

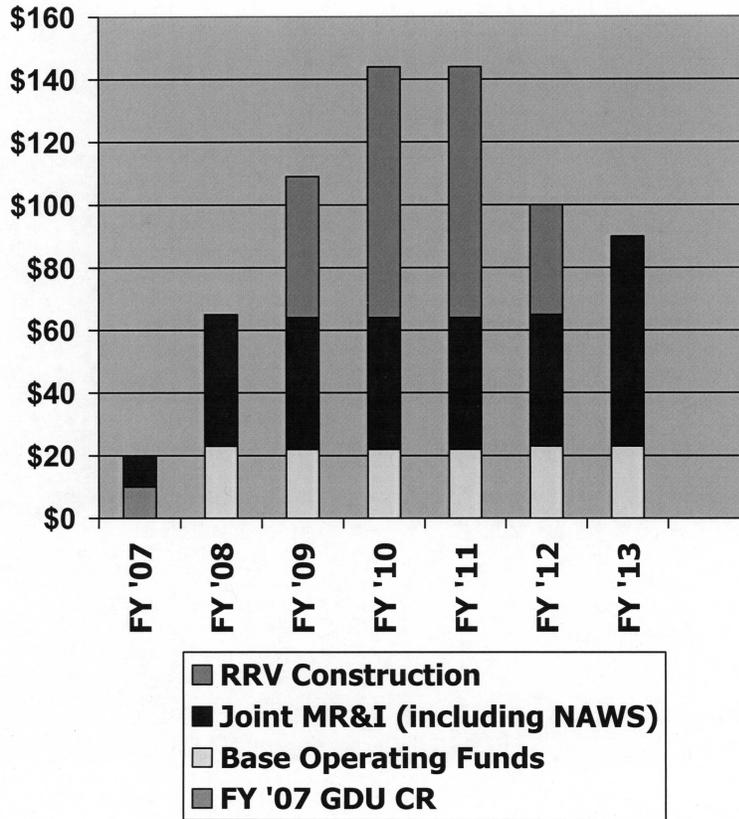
Indian MR&I programs on four reservations are also under construction. Tribal and State leaders have agreed to split the Indian and non-Indian MR&I allocation on a 50/50 basis.

The SWC has advanced the MR&I program \$18 million to allow construction to continue on several critical projects. One project is the \$22 million Williston Water Treatment Plant upgrade.

[In millions of dollars]

	Amount
OPERATION AND MAINTENANCE OF INDIAN MR&I SYSTEMS AND JAMESTOWN DAM	4.76
BREAKDOWN OF \$51.29 MILLION CONSTRUCTION REQUEST:	
Operation and Maintenance of existing GDU system	5.16
Wildlife Mitigation & Natural Resources Trust	3.49
Red River Valley Special Studies and EIS	5.51
Indian and non-Indian MR&I	42.00
Oakes Test Area and Miscellaneous	1.28
Under financing 5 percent	2.80
Total for Construction	60.24
Grand Total	65.0

GDU Annual Appropriations



PREPARED STATEMENTS OF THE SANTA CLARA VALLEY WATER DISTRICT

STATEMENT OF SUPPORT—SAN JOSE AREA WATER RECLAMATION AND REUSE PROGRAM
(SOUTH BAY WATER RECYCLING PROGRAM)

Background.—The San Jose Area Water Reclamation and Reuse Program, also known as the South Bay Water Recycling Program, will allow the city of San Jose and its tributary agencies of the San Jose/Santa Clara Water Pollution Control Plant to protect endangered species habitat, meet receiving water quality standards, supplement Santa Clara County water supplies, and comply with a mandate from the U.S. Environmental Protection Agency and the California Water Resources Control Board to reduce wastewater discharges into San Francisco Bay.

The Santa Clara Valley Water District (District) collaborated with the city of San Jose to build the first phase of the recycled water system by providing financial support and technical assistance, as well as coordination with local water retailers. The

design, construction, construction administration, and inspection of the program's transmission pipeline and Milpitas 1A Pipeline was performed by the District under contract to the city of San Jose.

Status.—The city of San Jose is the program sponsor for Phase 1, consisting of almost 60 miles of transmission and distribution pipelines, pump stations, and reservoirs. Completed at a cost of \$140 million, Phase 1 began partial operation in October 1997. Summertime 2004 deliveries averaged 10.6 million gallons per day of recycled water. The system now serves over 517 active customers and delivers approximately 7,200 acre-feet of recycled water per year.

Phase 2 is now underway. In June 2001, San Jose approved an \$82.5 million expansion of the program. The expansion includes additional pipeline extensions into the cities of Santa Clara and Milpitas, a major pipeline extension into Coyote Valley in south San Jose, and reliability improvements of added reservoirs and pump stations. The District and the city of San Jose executed an agreement in February 2002 to cost share on the pipeline into Coyote Valley and discuss a long-term partnership agreement on the entire system. Phase 2's near-term objective is to increase deliveries by the year 2010 to 15,000 acre-feet per year.

Funding.—In 1992, Public Law 102-575 authorized the Bureau of Reclamation to work with the city of San Jose and the District to plan, design, and build demonstration and permanent facilities for reclaiming and reusing water in the San Jose metropolitan service area. The city of San Jose reached an agreement with the Bureau of Reclamation to cover 25 percent of Phase 1's costs, or approximately \$35 million; however, Federal appropriations have not reached the authorized amount. To date, the program has received \$26.62 million of the \$35 million authorization.

Fiscal Year 2007 Funding.—No funds were appropriated in fiscal year 2007.

Fiscal Year 2008 Funding Recommendation.—It is requested that the congressional committee support an appropriation add-on of \$8.8 million, in addition to the \$200,000 in the administration's fiscal year 2008 budget request, for a total of \$9 million to fund the Program's work.

STATEMENT OF SUPPORT—SAN LUIS RESERVOIR LOW POINT IMPROVEMENT PROJECT

Background.—San Luis Reservoir is one of the largest reservoirs in California, and is the largest "off-stream" water storage facility in the world. The Reservoir has a water storage capacity of more than 2 million acre-feet and is a key component of the water supply system serving the Federal Central Valley Project (CVP) and California's State Water Project. San Luis is used for seasonal storage of Sacramento-San Joaquin delta water that is delivered to the reservoir via the California Aqueduct and Delta-Mendota Canal. The San Luis Reservoir is jointly owned and operated by the U.S. Bureau of Reclamation and the California Department of Water Resources.

The San Luis Reservoir provides the sole source of CVP water supply for the San Felipe Division contractors—Santa Clara Valley Water District (District), San Benito County Water District and, in the future, Pajaro Valley Water Management Agency. When water levels in San Luis Reservoir are drawn down in the spring and summer, high water temperatures result in algae blooms at the reservoir's water surface. This condition degrades water quality, making the water difficult or impractical to treat and can preclude deliveries of water from San Luis Reservoir to San Felipe Division contractors. In order to avoid the "low point" problem, the reservoir has been operated to maintain water levels above the critical low elevation—the "low point"—resulting in approximately 200,000 acre-feet of undelivered water to south of the Delta State and Federal water users.

Project Goals and Status.—The goal of the project is to increase the operational flexibility of storage in San Luis Reservoir and ensure a high quality, reliable water supply for San Felipe Division contractors. The specific project objectives are to: (1) Avoid supply interruptions when water is needed by increasing the certainty of meeting the requested delivery schedule throughout the year to south of Delta contractors dependent on San Luis Reservoir; (2) Increase the reliability and quantity of yearly allocations to south of Delta contractors dependent on San Luis Reservoir; (3) Announce higher allocations earlier in the season to south of Delta contractors dependent on San Luis Reservoir without sacrificing accuracy of the allocation forecasts. In addition to the above objectives, identify opportunities to provide for ecosystem restoration.

Preliminary studies by the District have identified six potential alternatives to solve the problem. More funding is needed to fully explore these alternatives.

The passage of H.R. 2828 in 2004 reauthorized Federal participation in the CALFED Bay-Delta Program. The San Luis Reservoir Low Point Improvement Project was one of six new projects, studies or water management actions authorized

in the bill to receive a share of up to \$184 million authorized under the conveyance section of the bill.

Fiscal Year 2007 Funding.—\$1.485 million was appropriated in the fiscal year 2007 under the CALFED appropriation.

Fiscal Year 2008 Funding Recommendation.—It is requested that the congressional committee support the administration's fiscal year 2008 budget request of \$1.4 million for the San Luis Reservoir Low Point Improvement Project. The San Luis request is included in the \$50 million CALFED Bay-Delta appropriation request.

STATEMENT OF SUPPORT—CALFED BAY-DELTA PROGRAM

Background.—In an average year, half of Santa Clara County's water supply is imported from the San Francisco Bay/Sacramento-San Joaquin Delta estuary (Bay Delta) watersheds through three water projects: The State Water Project, the Federal Central Valley Project, and San Francisco's Hetch Hetchy Project. In conjunction with locally developed water, this water supply supports more than 1.7 million residents in Santa Clara County and the most important high-tech center in the world. In average to wet years, there is enough water to meet the county's long term needs. In dry years, however, the county could face a water supply shortage of as much as 100,000 acre feet per year, or roughly 20 percent of the expected demand. In addition to shortages due to hydrologic variations, the county's imported supplies have been reduced due to regulatory restrictions placed on the operation of the State and Federal water projects.

There are also water quality problems associated with using Bay Delta water as a drinking water supply. Organic materials and pollutants discharged into the Delta, together with salt water mixing in from San Francisco Bay, have the potential to create disinfection by products that are carcinogenic and pose reproductive health concerns.

Santa Clara County's imported supplies are also vulnerable to extended outages due to catastrophic failures such as major earthquakes and flooding.

Project Synopsis.—The CALFED Bay Delta Program is an unprecedented, cooperative effort among Federal, State, and local agencies to restore the Bay Delta. With input from urban, agricultural, environmental, fishing, and business interests, and the general public, CALFED has developed a comprehensive, long term plan to address ecosystem and water management issues in the Bay Delta.

Restoring the Bay Delta ecosystem is important not only because of its significance as an environmental resource, but also because failing to do so will stall efforts to improve water supply reliability and water quality for millions of Californians and the State's trillion dollar economy and job base.

The passage of HR 2828 (Public Law 108-361) in 2004 reauthorized Federal participation in the CALFED Bay-Delta Program and provided \$389 million in new and expanded funding authority for selected projects, including the San Luis Reservoir Low Point Improvement Project. The San Luis Project is one of six new projects, studies or water management actions authorized to receive a share of up to \$184 million under the conveyance section of the bill. It is critical that Federal funding be provided to implement the actions authorized in the bill in the coming years.

Fiscal Year 2007 Funding.—\$33.6 million was appropriated for CALFED activities in fiscal year 2007.

Fiscal Year 2008 Funding Recommendation.—It is requested that the committee support an appropriation add-on of \$18.2 million, in addition to the \$31.8 million in the administration's fiscal year 2008 budget request, for a total of \$50 million for California Bay-Delta Restoration.

PREPARED STATEMENT OF THE CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION

Honorable Chairman Byron Dorgan and members of the committee: We respectfully request fiscal year 2008 appropriation of funds for two priority watershed restoration and agricultural water supply protection projects in Oregon and Washington, the Umatilla Basin Water Supply Project (previously funded under the Umatilla Basin Project Phase III, OR) and the Walla Walla General Investigation Stream Flow Restoration Feasibility Study (previously funded under the Walla Walla River Watershed, OR & WA).

—For the Umatilla Basin Water Supply Project, Oregon, we request an appropriation of \$1 million in the Bureau of Reclamation, Pacific Northwest Region, Water and Related Resources budget. This request will build upon the \$450,000 committed by the Bureau of Reclamation to the Project in fiscal year 2007.

—For the Walla Walla River Watershed, Oregon and Washington, we request an appropriation of \$100,000 in the U.S. Army Corps of Engineers, Portland Division, Walla Walla District, General Investigations budget—to initiate Pre-engineering and Design (PED) phase after fiscal year 2008 completion of Feasibility Study. This project is also known as Walla Walla River Basin Feasibility Report/Environmental Impact Statement.

Both the Umatilla Basin Water Supply Project and the Walla Walla General Investigation Stream Flow Restoration Feasibility Study are ongoing projects and have had administration and/or congressional line item funding in past fiscal years.

Umatilla River Basin, Oregon Water Supply Project

By letter dated March 19, 2007, the Office of the Secretary of Interior responded favorably to the formal requests of the Washington and Oregon delegations and of the Confederated Umatilla Tribes, Westland Irrigation District and Governor Theodore Kulongoski to initiate Umatilla Basin water development projects and concurrent settlement of the Tribe's reserved water rights. Counselor to the Secretary, L. Michael Bogert, wrote "I will ask the Secretary's Indian Water Rights Office to appoint an Assessment Team . . ." and "I will also ask the Bureau of Reclamation to move forward with a concurrent appraisal level study of water supply options, including a full Phase III exchange . . . to help resolve the Tribe's water rights claims."

The Bureau of Reclamation, subsequent to issuance of the March 19 letter from Counselor Bogert, has committed \$450,000 to fiscal year 2007 work on the Umatilla Basin water supply appraisal study.

The Umatilla Basin Water Supply Project is authorized by the Reclamation Feasibility Studies Act of 1966, 80 Stat. 707, Public Law 89-561, (Sept. 7, 1966).

The fiscal year 2008 request of \$1 million to the U.S. Bureau of Reclamation will follow-up the \$450,000 fiscal year 2007 work and should complete the majority of the estimated 2 year appraisal level study. It is anticipated that the full appraisal study project will be completed in 2009 in order to inform the concurrent Interior Department Indian Water Rights Assessment Team's work products. In 2009, Interior should have a clear project or suite of projects necessary to satisfy water rights of the Confederated Umatilla Tribes on the Umatilla Indian Reservation and in the Umatilla River.

This fiscal year 2008 request follows on the work of the Bureau of Reclamation, authorized by the Umatilla Basin Project Act of 1988 (100 Public Law 557; 102 Stat. 2782 Title II), to construct and operate the Phase I Exchange with West Extension Irrigation District and the Phase II Exchange with Hermiston and Stanfield Irrigation Districts. Heralded as one of the most successful stream flow restoration and salmon recovery projects in the Columbia River Basin, the Umatilla Basin Project resulted in partially restored stream flows in the Umatilla River and successful re-introduction of spring Chinook, fall Chinook and Coho salmon. After nearly a century of dry river bed in summer months and extinction of all salmon stocks, there has been an Indian and non-Indian salmon fishery nearly every year in the Umatilla River since the project was completed in the mid-1990s.

Completion of the Water Supply Study and the concurrent Tribal Water Rights Assessment is supported and endorsed by the Honorable Governor Ted Kulongoski and by local irrigation districts including specifically Westland Irrigation District, the Umatilla County Commission, and local municipalities including specifically the City of Irrigon.

Walla Walla Basin, Oregon and Washington, GI Feasibility Study

In its sixth and final full year prior to completion, the U.S. Army Corps of Engineers' feasibility study will select the project necessary to restore stream flows in the Walla Walla River. Drained nearly dry during summer months by irrigation in Oregon and Washington, the Walla Walla River is within the aboriginal lands of the Confederated Umatilla Tribes and the complete loss of salmon violates the agreement by the United States in the Treaty of 1855 to protect these fish.

Approximately \$3 million of Federal funds have either been budgeted or appropriated through fiscal year 2007 (this includes a estimate of \$797,000 for fiscal year 2007 based upon recent communication with Corps of Engineers). As a result of the allocation of \$797,000 in fiscal year 2007, the Corps will finish the Feasibility Study in 2008 without additional appropriations and CTUIR's request for \$100,000 will enable the initiation of the next PED phase.

The Feasibility Study Project is authorized by the Senate Committee on Public Works July 27, 1962 (Columbia River and Tributaries), 87th Congress, House Document #403 and initiated as a result of a positive Reconnaissance Report for the Walla Walla River Watershed (1997) under a General Investigation study.

The Confederated Tribes of the Umatilla Indian Reservation is the formal sponsor of the Corps of Engineers Feasibility Study and has provided over \$3.1 million in in-kind contributions. Additionally, the State of Washington Department of Ecology has provided \$400,000 to the Feasibility Study.

Support for the completion of the Feasibility Study and moving to construction of the project is strong and diverse and includes the Honorable Governor of Washington Christine Gregoire, the Honorable Governor of Oregon Ted Kulongoski, the Walla Walla Watershed Alliance, the Walla Walla Basin Watershed Council, basin irrigation districts, local State legislators and many local and regional advocacy groups.

In closing, the CTUIR appreciates the opportunity to provide this testimony in support of adding funds for the ongoing projects Umatilla River Basin Water Supply Project, Bureau of Reclamation, and for the Army Corps of Engineers Walla Walla River Basin Watershed Restoration Feasibility Study. Both projects are critically important to protecting existing agricultural economies, completing future water supply development and concurrently restoring stream flows and recovering threatened salmon and other Columbia River Basin fish stocks.

PREPARED STATEMENT OF THE OREGON WATER RESOURCES CONGRESS

I am Anita Winkler, Executive Director, Oregon Water Resources Congress. This testimony is submitted to the United States Senate Appropriations Committee, Energy and Water Development Subcommittee, regarding the fiscal year 2008 Budget for the Bureau of Reclamation and Oregon Projects. The Oregon Water Resources Congress (OWRC) was established in 1912 as a trade association to support member needs to protect water rights and encourage conservation and water management statewide. OWRC represents non-potable agriculture water suppliers in Oregon, primarily irrigation districts, as well as member ports, other special districts and local governments. The association represents the entities that operate water management systems, including water supply reservoirs, canals, pipeline and hydropower production.

BUREAU OF RECLAMATION

OWRC continues to support an increase in funding for the Bureau of Reclamation's Water and Related Resources program above the administration's proposed fiscal year 2008 budget request for the Bureau of Reclamation's programs west-wide. The administration's current budget proposal is approximately \$150 million less than what we in the water community feel is necessary to carryout an effective 21st Century water program for the West.

Water 2025

As our membership works to meet water-related challenges, we have found the Water 2025 program of the Bureau beneficial in providing the extra financial assistance necessary for the proper planning and actions to help prevent future crisis.

OWRC supports the \$11 million fiscal year 2008 budget request for the Water 2025 program. Funding this program will support our member districts' efforts to improve water delivery systems, conserve water, and implement innovative projects to meet the water needs in our State.

With many Western States confronting significant budget deficits, increased emphasis is being placed on targeted Federal aid. In addition, we continue to be confronted by looming shortages associated with the on going drought in the West. While we appreciate the administration's request for \$11 million for the Water 2025 program, we believe this seriously under represents the need for this program and the financial assistance in provides Western States to address water supply needs. We support a larger appropriation for the program once it is reauthorized and will provide a recommended dollar amount at that time.

OREGON NEEDS

We are concerned with the overall reduction in the fiscal year 2008 request for Oregon projects in the Bureau of Reclamation's fiscal year 2008 budget compared to the fiscal year 2007 request. With the exception of the Crooked River Project and the Savage Rapids Dam Removal, every project is down in requested dollars. Given the aging infrastructure, the surging population and environmental requirements we feel this is shortsighted given the needs in the State. We recognize that the Rural Water Supply Act passed in the last Congress instituting a new loan guarantee program for the Bureau of Reclamation. We believe this may prove to be an

important new tool in the Reclamation Tool Box. However, it should not be viewed as a substitute for a robust Water And Related Resources Budget.

We are disappointed that Reclamation has not come forward with their 5-year budgeting plan as requested by the committee. This absence, coupled with not having the spending plan for the fiscal year 2007 funding provided make it difficult to provide more thorough judgments and recommendations on the fiscal year 2008 budget request

Conservation Implementation

The largest need for funding for OWRC's members is to implement water conservation projects. Irrigation districts in Oregon continue to line and pipe open waterways to enhance both water supply and water quality. But the ability to continue this work depends on some public investment in return for the public benefits. Districts have conserved water and provided some of the saved or conserved water to benefit the fishery in-stream while also building reservoir supplies.

While some of these districts will continue to benefit from the funding requested in the fiscal year 2008 Bureau budget request, others are going through a reauthorization process or new authorizations for projects in their districts that will continue this conservation ethic.

Rogue River Basin

Medford Irrigation District
Rogue River Valley Irrigation District
Talent Irrigation District
Grants Pass Irrigation District

Three contiguous districts in the Rogue Project (Medford, Rogue River and Talent irrigation districts) are members of OWRC. We support their ongoing program request in this area.

The Grants Pass Irrigation District (GPID) continues to address the eventual removal of the Savage Rapids Dam. The \$15 million in the fiscal year 2008 budget is an important continuation of the effort to address the agreements made in this area. OWRC supports the GPID request.

Deschutes Basin

Tumalo Irrigation District
Deschutes Resource Conservancy
Ochoco Irrigation District

The Tumalo Irrigation District and the Deschutes Resource Conservancy are currently working on new program and project authorizations. We appreciated the committee efforts to add \$1 million in last years appropriation bill for the DRC.

The Ochoco Irrigation District (Prineville, Oregon) has worked with the Bureau of Reclamation, along with the North Unit Irrigation District (Madras, Oregon) for the better part of a decade to determine the use of unallocated water in the district's reservoir. It is important that this type of approach continues to address the needs in these areas.

Umatilla/Columbia Basins

Stanfield Irrigation District
Westland Irrigation District
Hermiston Irrigation District
West Extension Irrigation District
East Valley Water District
East Fork Irrigation District

The Umatilla districts draw their water supply from the Umatilla and Columbia Rivers. The districts have been in the process of completing boundary changes and seeking supplemental contracts as part of the conclusion of the boundary process. This process has taken nearly a decade. The districts recognize the need to move forward with Phase III of the project and support the \$374,000 in the fiscal year 2008 Budget for project conservation assistance and water quality improvements.

Eastern Basins

Burnt, Malheur, Owyhee and Powder River Basins Water Optimization Study.

The irrigation districts in these basins continue to seek support for this optimization study to seek alternatives for more effective water management through conservation projects and enhancement of water supply. This project has been identified by the Bureau of Reclamation as a regional need.

OWRC supports the fiscal year 2008 Oregon Investigations program request that contains \$810,000 to continue studies for these basins as well as several other basins in the State.

In addition, we support ongoing State of Oregon efforts on Water Supply Investigations in the State. As districts and the State continue their efforts at better planning, there is a fundamental need for better information. This would help with assessing existing and future water needs in Oregon, completing a comprehensive inventory of above and below ground storage and quantify surplus winter water.

Klamath Basin

The Klamath Project districts continue to require support for the work in their area. We appreciate the \$25 million request for the collaborative efforts of all involved and recommend continued scrutiny by the committee to make sure the needs and issues of the water community are met in this area. We continue to encourage the administration and in particular, the various Department of the Interior agencies, to work closely with the districts in the project area on the overall funding and planning necessary for ongoing solutions.

CONCLUSION

Thank you for the opportunity to provide testimony regarding the fiscal year 2008 Federal Bureau of Reclamation budget. While we support existing proposals, we feel that given the record-setting droughts we have suffered in the past few years and in anticipation of another drought this year, we need to support an increased budget to stabilize the Nation's water supply for the many needs it must meet. Providing a stable water supply feeds the economy locally and at the national level. The needs in this area should not have to rely on emergency approaches and funding to be addressed in a timely manner. There is a storing need for integrated water management and systems and watershed approaches. An emphasis on improved intergovernmental cooperation, working with State, regional and local organizations can make for better collaborative planning models for everyone to benefit. We would encourage the subcommittee to request a briefing from the Western States Water Council on the study they have underway in this policy area.

PREPARED STATEMENT OF THE FORT PECK ASSINIBOINE AND SIOUX TRIBES AND DRY PRAIRIE RURAL WATER

BUREAU OF RECLAMATION

Fiscal Year 2008 Budget Request

The Fort Peck Assiniboine and Sioux Tribes and Dry Prairie Rural Water respectfully request fiscal year 2008 appropriations in the amount of \$36,851,000 for the Bureau of Reclamation from the Subcommittee on Energy and Water Development. Funds will be used to construct critical elements of the Fort Peck Reservation Rural Water System, Montana, (Public Law 106-382, October 27, 2000). The amount requested is based on need to build critical project elements and is well within capability to spend the requested funds as set out below:

FISCAL YEAR 2008 WORK PLAN—FORT PECK RESERVATION RURAL WATER SYSTEM (PUBLIC LAW 106-382)

	Amount
Fort Peck Tribes:	
Water Treatment Plant:	
Phase I, Clear Well Wash Water Recover	\$3,504,000
Phase II, Main Treatment	22,475,000
FP OM Buildings	765,000
Total	26,744,000
Dry Prairie:	
Branch Pipelines:	
St. Marie to Nashua and St. Marie to Opheim:	
Federal	10,107,000
State and Local	3,192,000
Total	13,299,000
Total:	
Federal	36,851,000

FISCAL YEAR 2008 WORK PLAN—FORT PECK RESERVATION RURAL WATER SYSTEM (PUBLIC LAW 106-382)—Continued

	Amount
State and Local	3,192,000

The sponsor Tribes and Dry Prairie greatly appreciate the previous appropriations from the subcommittee that have permitted building the Missouri River intake, the critical water source, elements of the water treatment plant, the Culbertson to Medicine Lake Pipeline Project and branches serving rural users outside the Fort Peck Indian Reservation. Without funds to complete the water treatment plant, service to tribal users and communities has not been possible within the Fort Peck Indian Reservation.

The request is comparable to the average annual appropriations needed to complete the project in fiscal year 2012 (\$35,110,000), as provided by the authorizing legislation, but is within our capability to use:

	Fiscal Year 2008
Total Federal Funds authorized (October 2005 \$)	\$258,977,000
Federal Funds Expended Through fiscal year 2006	\$48,318,000
Percent Complete	18.66
Amount Remaining	\$210,659,000
Average Annual Required for fiscal year 2012 Finish (Public Law 106-382)	\$35,110,000
Fiscal year 2008 Amount Requested	\$36,851,000
Years to Complete	5

Note that cost indexing from last year due to inflation increased the cost of the project from \$247 million to \$259 million, an increase of \$12 million. Increases in the level of appropriations are needed to outpace inflation.

Proposed Activities

Public Law 106-382 (October 27, 2000) authorized this project, which includes all of the Fort Peck Indian Reservation in Montana and the Dry Prairie portion of the project outside the Reservation.

FORT PECK INDIAN RESERVATION

On the Fort Peck Indian Reservation the Tribes have used appropriations from previous years to construct the Missouri River raw water intake, a critical feature of the regional water project. The raw water pump station has also been constructed, and the raw water pipeline between the Missouri River and the water treatment plant has been constructed to within 2 miles of the water treatment plant. The sludge lagoons at the water treatment plant are completed.

The critical Missouri River water treatment plant will begin construction in spring 2007 and will use \$15.3 million of funds on hand to build the first two phases of the facility. An additional \$3.5 million in fiscal year 2008 funds is needed to Complete Phase I and an additional \$22.475 million is needed to complete the main water treatment plant process building in Phase II.

This project was delayed a year due to the reduction in level of appropriations in fiscal year 2007 (from \$16 million in fiscal year 2006 to \$6 million in fiscal year 2007) and the uncertainty of adequate funding to complete the project. The project was bid in fiscal year 2006 as a complete unit, combining Phase I and Phase II, but bidders increased prices significantly to reflect the uncertainty of funding to complete the project. The project has now been separated into the two phases to accommodate the funding setback, but the separation into two phases has increased the total cost of the facility.

The request for fiscal year 2008 does not provide for construction of essential pipelines from the water treatment plant to the communities of Poplar and Wolf Point. These are the principal core pipelines that extend east and west of the water treatment plant to serve the Fort Peck Indian Reservation and to eventually connect to Dry Prairie facilities on the east and west boundaries of the Reservation. The funds needed for the pipeline projects to Poplar and Wolf Point are \$11.0 and \$4.0 million, respectively, in addition to the fiscal year 2008 funding request. These are critical elements of the work plan for fiscal year 2009.

The pipeline project from the water treatment plant to Poplar will provide a replacement water supply for the community of Poplar and a rural section of the Fort Peck Indian Reservation contaminated by brine from oil drilling operations, which

is the subject of EPA orders against the responsible oil company. There is urgency in completing the pipeline to Poplar before the advancing plume of contamination reaches existing community wells in Poplar. Projections of the date that contamination will reach the Poplar community wells are variable, but the anxiety of the Tribes' leadership and membership can be overcome by completing the water treatment plant and connecting the pipeline to Poplar in fiscal year 2009. This is a critical time frame for the Tribes. The staff and members of the subcommittee are urged to review this matter with the Tribes and Bureau of Reclamation to clarify the urgency of the completing necessary project facilities and alleviating the threat of contamination of the public water supply for the Tribes' headquarters community of Poplar.

The Tribes will also use \$765,000 for an administration, operation and maintenance building. The Bureau of Reclamation can confirm that the use of funds proposed for fiscal year 2008 is well within the project's capability to spend.

DRY PRAIRIE

Dry Prairie has used previous appropriations to construct core pipelines and a booster pump station from the community of Culbertson to serve the communities of Froid and Medicine Lake. This project represents a significant portion of the main core pipeline for the eastern half of the Dry Prairie Project. Pipelines were sized to serve the area north of the Missouri River, south of the Canadian border and between the Fort Peck Indian Reservation and the North Dakota border.

The project relies on interim water supplies. The regional water treatment plant will provide finished water when pipelines are constructed to the interconnection point for Dry Prairie between Poplar and Culbertson, scheduled for completion in fiscal year 2012. The project between Culbertson, Froid and Medicine Lake is in full operation and serves the last two mentioned communities.

In fiscal year 2006 in first quarter fiscal year 2007, Dry Prairie built branch pipelines and connected nearly 200 rural services to the Culbertson to Medicine Lake pipeline in the eastern half of the Dry Prairie Project. Bainville, McCabe and Dane Valley residents can be served with the existing system capacity that is now constructed and in operation.

The request for fiscal year 2008 funds of \$10,107,000, supplemented by a non-Federal cost share of \$3,192,000, will be used to begin construction of pipelines to rural services on the west side of the Dry Prairie project between the communities of St. Marie and Nashua. An existing water treatment plant owned by the Boeing Co., at the former Glasgow Air Force Base will provide an interim water supply to serve the west side project until the regional water treatment plant of the Tribes is completed and pipelines from Wolf Point to Nashua can be completed as scheduled in fiscal year 2012. The facilities constructed on the west side of the project are the same facilities required after connection of the regional water treatment plant. Therefore, no duplication of facilities or increases in costs are associated with the interim project.

Master Plan

The project master plan is provided for review as an attachment. The request for fiscal year 2008 is shown in relation to the project components that remain to be completed by 2012.

Administration's Support

The Tribes and Dry Prairie worked extremely well and closely with the Bureau of Reclamation prior to and following the authorization of this project in fiscal year 2000. The Bureau of Reclamation has heavily reviewed and commented on the Final Engineering Report, and all comments were incorporated into the report and agreement was reached on final presentation. OMB reviewed the Final Engineering Report prior to its submission to Congress in the final step of the approval process. The Commissioner, Regional and Area Offices of the Bureau of Reclamation have been consistently in full agreement with the need, scope, total costs, and the ability to pay analysis that supported the Federal and non-Federal cost shares. There have been no areas of disagreement or controversy in the formulation of the project.

The Bureau of Reclamation collaborated with the Tribes and Dry Prairie to conduct and complete value engineering investigations of the Final Engineering Report (planning), the Culbertson to Medicine Lake pipeline (design), the Poplar to Big Muddy River pipeline (design), the Missouri River intake (design) and on the regional water treatment plant (design). Each of these considerable efforts has been directed at ways to save construction and future operation, maintenance and replacement costs as planning and design proceeded. Agreement with Reclamation has

been reached in all value engineering sessions on steps to take to save Federal and non-Federal costs in the project.

The Bureau of Reclamation conducted independent review of the final plans and specifications for the Missouri River raw water intake, the regional water treatment plant and the Culbertson to Medicine Lake Project. The agency participated heavily during the construction phases of those projects and concurred in all aspects of construction from bidding through the completion of construction. (The regional water treatment plant has not yet been constructed).

Cooperative agreements have been developed and executed from the beginning phases to date between the Bureau of Reclamation and the Tribes and between Bureau of Reclamation and Dry Prairie. Those cooperative agreements carefully set out goals, standards and responsibilities of the parties for planning, design and construction. All plans and specifications are subject to levels of review by the Bureau of Reclamation pursuant to the cooperative agreements. The sponsors do not have the power to undertake activities that are not subject to oversight and approval by the Bureau of Reclamation. Each year the Tribes and Dry Prairie, in accordance with the cooperative agreements, develop a work plan setting out the planning, design and construction activities and the allocation of funding to be utilized on each project feature.

Clearly, the Fort Peck Reservation Rural Water System is well supported by the Bureau of Reclamation. Congress authorized the project with a plan formulated in full cooperation and collaboration with the Bureau of Reclamation, and major project features are under construction with considerable oversight by the agency.

DEPARTMENT OF ENERGY

PREPARED STATEMENT OF THE STATE TEACHERS' RETIREMENT SYSTEM

Summary

Acting pursuant to congressional mandate, and in order to maximize the revenues for the Federal taxpayer from the sale of the Elk Hills Naval Petroleum Reserve by removing the cloud of the State of California's claims, the Federal Government reached a settlement with the State in advance of the sale. The State waived its rights to the Reserve in exchange for fair compensation in installments stretched out over an extended period of time.

The State respectfully requests an appropriation of at least \$9.7 million in the subcommittee's bill for fiscal year 2008, in order to meet the Federal Government's obligations to the State under the Settlement Agreement.

Background

Upon admission to the Union, States beginning with Ohio and those westward were granted by Congress certain sections of public land located within the State's borders. This was done to compensate these States having large amounts of public lands within their borders for revenues lost from the inability to tax public lands as well as to support public education. Two of the tracts of State school lands granted by Congress to California at the time of its admission to the Union were located in what later became the Elk Hills Naval Petroleum Reserve.

The State of California applies the revenues from its State school lands to assist retired teachers whose pensions have been most seriously eroded by inflation. California teachers are ineligible for Social Security and often must rely on this State pension as the principal source of retirement income. Typically the retirees receiving these State school lands revenues are single women more than 75 years old whose relatively modest pensions have lost as much as half or more of their original value to inflation.

State's Claims Settled, as Congress Had Directed

In the National Defense Authorization Act for Fiscal Year 1996 (Public Law 104-106) that mandated the sale of the Elk Hills Reserve to private industry, Congress reserved 9 percent of the net sales proceeds in an escrow fund to provide compensation to California for its claims to the State school lands located in the Reserve.

In addition, in the Act Congress directed the Secretary of Energy on behalf of the Federal Government to "offer to settle all claims of the State of California . . . in order to provide proper compensation for the State's claims." (Public Law 104-106, § 3415). The Secretary was required by Congress to "base the amount of the offered settlement payment from the contingent fund on the fair value for the State's claims, including the mineral estate, not to exceed the amount reserved in the contingent fund." (Id.)

Over the year that followed enactment of the Defense Authorization Act mandating the sale of Elk Hills, the Federal Government and the State engaged in vigorous and extended negotiations over a possible settlement. Finally, on October 10, 1996 a settlement was reached, and a written Settlement Agreement was entered into between the United States and the State, signed by the Secretary of Energy and the Governor of California, under which the State would receive 9 percent of the sales proceeds in annual installments over an extended period.

The Settlement Agreement is fair to both sides, providing proper compensation to the State and its teachers for their State school lands and enabling the Federal Government to maximize the sales revenues realized for the Federal taxpayer by removing the threat of the State's claims in advance of the sale.

Federal Revenues Maximized by Removing Cloud of State's Claim in Advance of the Sale

The State entered into a binding waiver of rights against the purchaser in advance of the bidding for Elk Hills by private purchasers, thereby removing the cloud over title being offered to the purchaser, prohibiting the State from enjoining or otherwise interfering with the sale, and removing the purchaser's exposure to treble damages for conversion under State law. In addition, the State waived equitable claims to revenues from production for periods prior to the sale. The Reserve thereafter was sold for a winning bid of \$3.53 billion in cash, a sales price that substantially exceeded earlier estimates.

The Money Is There to Pay the State

The funds necessary to compensate the State have been collected from the sales proceeds remitted by the private purchaser of Elk Hills and are now being held in the Elk Hills School Lands Fund for the express purpose of compensating the State. Taking into account the 1 percent government-wide rescission in the fiscal year 2006 Defense Appropriations Act, the Elk Hills School Lands Fund should have a positive balance of at least \$18.18 million.

Congress Should Appropriate \$9.7 Million for the Fiscal Year 2008 Installment of Elk Hills Compensation

As noted above, the State's 9 percent share of the adjusted Elk Hills sales price of \$3.53 billion is \$317.70 million. To date, Congress has appropriated seven installments of \$36 million and one installment of \$48 million that was reduced to \$47.52 million by the 1 percent across-the-board rescission under the fiscal year 2006 Defense Appropriations Act, for total appropriations to date of \$299.52 million of Elk Hills compensation owed to the State. Accordingly, the Elk Hills School Lands Fund should have a positive balance of at least \$18.18 million.

We understand that Department of Energy personnel have proffered 3 purported grounds for suspending further payments of Elk Hills compensation to the State. Each of these is a "red herring."

Red Herring No. 1: Finalization of respective equity shares of Federal Government and ChevronTexaco as selling co-owners of Elk Hills oil field still not completed.—The President's fiscal year 2008 budget request says that "the timing and levels of any future budget request [for Elk Hills compensation] are dependent on the schedule and results of the equity finalization process" between the Federal Government and ChevronTexaco to determine the relative production over the years from their respective tracts in the Elk Hills field (Fiscal Year 2008 Budget Appendix, at p. 373). But DOE already has held back \$67 million, including \$6.03 million from the State's share, to protect the Federal Government's interests in a "worst case scenario" for this equity process, which is in its final stages after nearly a decade. The State has agreed to a "hold-back" of that amount to protect the Federal Government's interest. This reduces the available balance in the Elk Hills School Lands Fund to \$12.15 million. Remaining uncertainty in the equity process thus provides no basis for withholding further payment of the State's Elk Hills compensation.

Red Herring No. 2: No payment can be made to the State because of pending litigation between ChevronTexaco and DOE.—DOE has pointed to pending litigation brought by ChevronTexaco against DOE in the U.S. Court of Federal Claims (Docket No. 04-1365C) as a reason to suspend further payments to the State. This litigation alleges DOE personnel committed misconduct in the equity finalization process by having improper ex parte contacts and having the same DOE staff serve as both advocate for DOE's position and advisor preparing the decision documents for the decisionmaker. However, the California State Attorney General has analyzed this litigation and advised that this litigation is a claim for money damages for DOE staff misconduct that has no effect on the Federal Government's equity share, and so there is no effect on the State's share of compensation. (See Memorandum of the California State Attorney General, dated May 16, 2006). Indeed, under the gov-

erning agreement between DOE and Chevron, Chevron had waived any right to contest the final equity determination in court. Hence this litigation provides no basis for withholding the rest of the State's compensation.

Red Herring No. 3: No payment can be made to the State because the State's share must be reduced by the equity finalization costs and environmental remediation costs and the final amount of such costs is not yet known.—The State's share of compensation is properly reduced by the "direct costs of sale" as required by Congress. Since the sale took place nearly a decade ago, those costs are fixed and known. The State has agreed to bear its share of these sales expenses. However, DOE is seeking to charge against the State's share two additional categories of costs—costs of determining the equity ownership and environmental remediation—that constitute ongoing costs of operating the oil field, not sales expenses. The California State Attorney General advises that these do not properly constitute sales expenses chargeable against the State's share.

More specifically, the Settlement Agreement between the Federal Government and the State provides that the Federal Government shall pay the State "nine percent of the proceeds from the sale of the Federal Elk Hills Interests that remain after deducting from the sales proceeds the costs incurred to conduct such sale." This reflects the congressional direction that, "In exchange for relinquishing its claim, the State will receive seven [nine in the final legislation] percent of the gross sales proceeds from the sale of the Reserve that remain after the direct expenses of the sale are taken into account." (House Rept. No. 104-131, Defense Authorization Act for Fiscal Year 1996, Public Law 104-106).

The State agrees that the \$27.13 million incurred for appraisals, accounting expenses, reserves report, and brokers' commission are appropriate sales expenses. (See Letter of the California Attorney General to DOE, dated February 10, 2005). Accordingly, the State's 9 percent share of these proper sales expenses reduces the available balance of the Elk Hills School Lands Fund by \$2.44 million to \$9.7 million.

Costs of conducting the equity adjustment are properly viewed as ongoing costs incurred due to the joint operation of the Elk Hills oil field by the Federal Government and ChevronTexaco, since the equity adjustment already was required under their joint operating agreement and related to pre-sale production revenues. Similarly, costs of environmental remediation of the Elk Hills field was a cost attributable to the prior operation of the field, which created any environmental problems that exist. The ongoing operational nature of this cost is underscored by the fact that the Federal Government is currently engaged in the phased environmental remediation of a Naval Petroleum Reserve that it is not selling—NPR-3 (Teapot Dome), as evidenced by its fiscal year 2006 budget request.

Conclusion

Therefore, of the current Elk Hills School Lands Fund balance of \$18.18 million, taking into account the "hold-back" for worst case scenario under equity finalization and deducting the appropriate direct costs of conducting the sale, the State respectfully requests the appropriation of at least \$9.7 million for Elk Hills compensation in the subcommittee's bill for the fiscal year 2008 installment of compensation, in order to meet the Federal Government's obligations to the State under the Settlement Agreement.

PREPARED STATEMENT OF THE CONSORTIUM FOR FOSSIL FUEL SCIENCE (CFFS) PRODUCTION OF TRANSPORTATION FUELS FROM COAL AND BIOMASS WITH REDUCED CARBON DIOXIDE EMISSIONS

Chairman Dorgan and members of the subcommittee: We request \$3 million in funding for a congressionally directed project in the Fuels Program of the Office of Fossil Energy budget to initiate a program of research to produce transportation fuels from coal and biomass. The focus of this program will be to minimize the amount of carbon dioxide emitted by both the fuel conversion process and by fuel utilization to achieve overall emissions comparable to or less than emissions resulting from the production and utilization of similar transportation fuels from petroleum.

OVERVIEW

Traditional petroleum fuels and vehicles will remain our dominant transportation mode for at least the next 20 years. The United States imports over 10 million barrels of oil per day at a cost exceeding \$220 billion/year, most of it from unstable

regions of the world. Expert testimony has been presented to the Congress showing that the true cost of imported petroleum goes far beyond the price of a barrel of crude oil, with some estimates reaching to \$825 billion for 2006. Increasing global demand, coupled with an expected peaking in the world oil supply, will cause shortages and markedly increased prices in the future, which could lead to economic recessions due to "oil shock."

It is essential that we produce transportation fuels from our own national resources, especially focusing on our most abundant energy resource, coal. It is equally essential, however, that we do so without harming the environment. The National Research Center for Coal and Energy (NRCCE, West Virginia University) and the Consortium for Fossil Fuel Science (CFFS, University of Kentucky) have formed an integrated team of fuels experts from five universities (West Virginia University, University of Kentucky, University of Pittsburgh, University of Utah, and Auburn University) to conduct a basic research program focused on producing Fischer-Tropsch fuels using mixtures of coal and biomass as the feedstock. We believe that costs can be reduced, a superior transportation fuel can be produced, and carbon emissions can be minimized through such research.

The NRCCE and the CFFS have extensive experience and broad expertise in research on the conversion of coal into clean liquid transportation fuels and the conversion of coal into hydrogen. We have made significant breakthroughs in such areas as: (1) catalysis of coal conversion reactions; (2) C1 chemistry processes (including Fischer-Tropsch (F-T) synthesis) to produce transportation fuels from coal-derived syngas; (3) co-processing of coal with waste materials, including plastic, rubber, and cellulose (biomass); (4) development of novel processes to produce hydrogen from fossil fuels; and, (5) environmental research.

We are now proposing a research program focused on development of processes that use biomass as a co-feed with coal for the production of clean transportation fuels with reduced carbon emissions.

The motivations for this approach include: First, co-feeding coal with biomass will extend the lifetime of the Nation's coal resources; second, we can make use of biomass wastes that are not currently utilized; and, third, combined coal and biomass processes have the potential to yield a significant net reduction in carbon dioxide emissions compared to coal-only processes.

Recent studies indicate that the total carbon dioxide emissions from a liquid fuel produced by F-T synthesis of syngas derived from mixtures of coal and biomass may be reduced by as much as 60–80 percent relative to those from the same fuel produced from coal alone.

GOALS OF THE PROGRAM

The primary goal of the NRCCE–CFFS research program is to develop technology that will enable the United States to produce clean liquid transportation fuel from its largest domestic energy resource, coal, in a manner that is both sustainable and environmentally friendly. Incorporating biomass into the feedstock can help to achieve these objectives. A short summary of more specific goals is given below.

- Investigate the pyrolysis and gasification of coal-biomass mixtures to determine the role that hydrogen from biomass can play in the production of syngas with the optimum composition for the production of liquid fuels (gasoline, diesel fuel, and jet fuel). Improvements in the gasification step will have a great impact on the ultimate cost of the liquid fuels produced from syngas derived from coal-biomass mixtures, since gasification costs are 60–70 percent of the total cost.
- Develop catalysts and thermochemical processes that will yield transportation fuel products from coal-biomass mixtures with properties better than those produced from petroleum, while reducing the total carbon dioxide emissions from both production and use of the fuels.
- Develop computational models to simulate catalytic chemical reactions by quantum mechanics, thereby reducing the need for experimental testing and decreasing the cost of the on-going research program.
- Utilize systems analysis modeling to simulate plant performance and cost factors in order to determine whether or not processes developed in the laboratory are commercially viable.
- Produce hydrogen and synthetic natural gas from coal-biomass mixtures while reducing the carbon dioxide footprint.
- Establish a more active collaboration with scientists at the National Energy Technology Laboratory (NETL) who are focused on this and related areas of research. Develop an exchange program in which professors and graduate students from the five participating universities conduct research at NETL and

NETL scientists have access to facilities and expertise available at the universities.

Legislation introduced in both houses of the 110th Congress includes tax credits and loan guarantees to hasten the deployment of plants which produce alternative fuels from coal. Widespread deployment of such plants will require a large number of fuel scientists and engineers. An ancillary benefit of our program will include educating the U.S.-based human resource pool needed to meet personnel demands for a coal-to-liquids industry.

SUMMARY

We request your support for \$3 million in funding for this program to the National Research Center for Coal and Energy (West Virginia University) from the Fossil Energy budget for fiscal year 2008. The funding will be shared with the other four CFFS universities (Kentucky, Pittsburgh, Auburn, and Utah) to support the first year of a proposed three-year research program for producing liquid transportation fuels from coal and biomass. The NRCCE-CFFS consortium will provide \$750,000 in cost-sharing.

Achievement of our program goals will accelerate the development of a domestic industry for the production of clean liquid transportation fuels using our own natural resources, thereby strengthening the energy and economic security of our Nation. An alternative fuels industry will also provide many new jobs in the mining industry, fuel synthesis plants, and biomass processing.

Thank you for the opportunity to offer testimony to the subcommittee.

PREPARED STATEMENT OF THE COALITION OF NORTHEASTERN GOVERNORS

The Coalition of Northeastern Governors (CONEG) is pleased to provide this testimony to the Senate Subcommittee on Energy and Water Development regarding fiscal year 2008 appropriations for the Energy Conservation and Renewable Energy programs of the U.S. Department of Energy (DOE). The Governors recognize the difficult funding decisions which confront the subcommittee this year. We appreciate the subcommittee's continued support for energy efficiency, energy conservation, and renewable energy programs—all of which promote sound energy management and improve the Nation's energy security. Consistent with this thinking, the CONEG Governors request that funding for the State Energy Program be increased to \$74 million, and funding for the Weatherization Assistance Program be provided at a level of \$300 million in fiscal year 2008. The Governors support the President's request to fund the Northeast Home Heating Oil Reserve at \$7 million and the Energy Information Administration at \$105 million in fiscal year 2008. At this time of heightened interest in expanded use of indigenous renewable energy resources, we request that the subcommittee require the Department of Energy to again provide modest funding of \$7.5 million to continue the critical networks and market development work of the National Biomass Partnership (previously known as the Regional Biomass Energy Program).

These very successful energy programs take on new significance as the Nation strives to strengthen the security and reliability of domestic energy supplies and to reduce dependence on foreign sources of energy. Energy efficiency, conservation and renewable energy, which offer near-term opportunities and results, are important complements to longer-term Federal investments in domestic production and emerging technologies. Federal resources for research and program implementation must also emphasize programs that can bring alternative energy and energy saving technologies quickly to the marketplace. The State Energy Program, the Weatherization Assistance Program, and the Regional Biomass Partnership provide established networks and Federal-State-local government and private sector partnerships which can achieve timely energy savings and encourage renewable energy development. Modest Federal investment in these programs provides substantial energy, economic and environmental returns to the Nation, leveraging additional State and private sector investment, and contributing to sound energy management. These resources are undisputed clear winners when compared to conventional energy technologies.

State Energy Program (SEP).—The State Energy Program (SEP) is the major State-Federal partnership program addressing energy efficiency and conservation in all sectors of the economy. It assists States' work in support of the national goals of greater energy efficiency, reduced energy costs, and development of alternative and renewable energy resources. The State Energy Program also helps States improve the security of the energy infrastructure and prepare for natural disasters. SEP programs increase the awareness of the opportunities available in States to improve energy efficiency, reduce energy costs, create jobs, and diversify energy use.

Their transformative effects in the market have been repeatedly demonstrated and proven.

Working with DOE, States tailor their renewable energy and energy efficiency programs in a way that makes the most sense for their market opportunities, thus maximizing the effectiveness of the program's resources. For example, the Northeast States have used SEP supported projects to provide technical assistance and financial incentives that have spurred building designers and owners to adopt energy-efficient design features in the commercial, institutional, multifamily, and industrial sectors. Our States have also used SEP resources in programs that monitor and enhance the reliability of the energy supply and delivery infrastructures, support the timely updating of energy emergency preparedness plans, and promote the use of alternative fuels in the transportation sector and other initiatives that will lead to a lowering of fuel consumption and cleaner air.

The modest Federal funds provided to the SEP are an efficient Federal investment, as they are leveraged by non-federal public and private sources. According to the most recent data from the Department of Energy, for every \$1 of Federal investment, \$3.58 is leveraged by State and local governments, and private companies and results in \$7.23 in reduced energy bills. In its evaluation of the program, Oak Ridge National Laboratory estimated that the program results in annual cost savings of \$256 million while providing environmental and public health benefits through reduced energy use and emission reductions.

Weatherization Assistance Program (WAP).—Weatherization is taking on an increased importance as an immediate, effective tool to manage energy use, particularly at a time of high energy prices. Through a network of more than 900 local weatherization service providers, the Weatherization Assistance Program (WAP) improves the energy efficiency of more than 100,000 low-income dwellings a year, thereby reducing the home energy bills of the Nation's most vulnerable citizens. Increased and consistent funding is key to the effectiveness of this program that invests in training weatherization personnel.

While an average household pays roughly 2.7 percent of annual income on home energy, low income households pay more than four times that amount. Some elderly recipients who live on fixed incomes pay as much as 35 percent of their annual incomes for energy bills. WAP provides immediate and lasting benefits and reduces the energy burden of low-income families by improving energy efficiency and permanently reducing home energy bills.

Weatherization can reduce, on average, heating bills by 31 percent and overall energy bills by \$358 per year at current prices through energy efficiency measures that address a home's heating and cooling systems, its electrical system, and electricity consuming appliances. In terms of energy savings, weatherization clients save \$1.83 for every \$1 of DOE investment, according to recent DOE information. Weatherization services can also improve the safety of a home by identifying carbon monoxide hazards from old boilers, furnaces and water heaters, and fire hazards from outdated electrical equipment and wiring.

The WAP also provides numerous non-energy benefits. Oak Ridge National Laboratory has concluded that for every \$1 of DOE investment, there are non-energy benefits worth \$1.88, and the WAP contributes to more than 8,000 jobs nationwide. In addition, the decreased energy use resulting from weatherization measures also provides environmental benefits through decreased carbon dioxide emissions.

Renewable Energy and the National Biomass Partnership.—Renewable energy plays a vital role in meeting the Nation's goal of reduced reliance on imported fossil fuels, a more balanced, diverse energy resource mix, and reduction of greenhouse gases. Modest but timely support for research and commercialization opportunities for near-term bioenergy technologies is a vital component in meeting that goal. Using government funding to support private market development and technology commercialization for biofuels offers one of the most promising hopes for reducing the Nation's energy vulnerabilities. States contribute significant resources to support the development of biomass fuels, technology, and infrastructure. However, State funds are not available for coordination of these activities across the Nation.

The National Biomass Partnership (formerly known as the Regional Biomass Energy Program) brings together varied networks of State, private, and Federal bioenergy activities, and is a critical link in the chain of research, resource production and technology commercialization. The Partnership has successfully contributed to the adoption of State policies supportive of bioenergy resource and technology development, public awareness of the benefits and uses of bioenergy, greater leveraging of Federal funding and State resources, and increased intensity of biomass use. For example, according to a DOE-directed program review, the Northeast Regional Biomass Partnership (NRBP) directly influenced \$24 million in biomass investments—69 percent of the overall biomass investment made in the region in 2003. It helped

create biomass working groups in nine northeast States, which along with the NRBP personnel, provided bioenergy education and training to nearly 3,000 people in the region—and greater participation in State-developed bioenergy policies and programs.

Northeast Home Heating Oil Reserve.—The Nation's heightened emphasis on energy security places renewed importance on the Northeast Home Heating Oil Reserve. The Northeast, with its reliance upon imported fuels for both residential and commercial heating, is particularly vulnerable to the effects of supply disruptions and price volatility. The Northeast region of the country is literally at the end of the energy product pipeline. Any disruption along the delivery infrastructure anywhere in the country negatively affects the Northeast. The Reserve provides an important buffer to ensure that the States will have prompt access to immediate supplies in the event of a supply emergency.

Energy Information Administration (EIA).—EIA provides timely, reliable and credible information and analysis on the energy produced, imported and consumed in the United States. At this time of volatile global energy markets and renewed focus on the safety and security of the Nation's energy supply, the information provided by the Energy Information Administration (EIA) is a vital tool in keeping energy markets functioning efficiently. In addition, States rely on EIA data as the core of their information for energy emergency planning. Increased funding in fiscal year 2008 will help ensure that EIA can continue to collect, analyze and make available this vital data.

In conclusion, the Coalition of Northeastern Governors request that you provide \$74 million for the State Energy Program, \$300 million for the Weatherization Assistance Program and \$7.5 million for the National Biomass Partnership in fiscal year 2008. These programs promote sound energy management by encourage development of alternative energy resources and helping manage the Nation's energy use. The Governors also request \$7 million for the Northeast Home Heating Oil Reserve and \$105 million for the Energy Information Administration in fiscal year 2008. CONEG welcomes the opportunity to continue a dialogue on these important matters as Congress and the administration consider budget and energy project and policy initiatives.

PREPARED STATEMENT OF CUMMINS, INC.

Cummins Inc. is pleased to provide the following statement for the record regarding fiscal year 2008 funding for programs in the Department of Energy's Offices of Energy Efficiency and Renewable Energy; Electricity Delivery and Energy Reliability; and Fossil Energy. Cummins Inc., headquartered in Columbus, Indiana, is a corporation of complementary business units that design, manufacture, distribute and service engines and related technologies, including fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems. The funding requests outlined below are critically important to Cummins' research and development efforts and represent a sound Federal investment towards a cleaner environment and improved energy efficiency for our Nation. We request that the committee fund the programs as identified below.

OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY

Office of FreedomCAR and Vehicle Technologies/Vehicle Technologies

Advanced Combustion Engine R&D.—Cummins recommends an increase in the administration's request of \$34.55 million by \$15.20 million to bring the program total to \$49.75 million in fiscal year 2008. This program includes two important research areas—the Heavy Truck Engine and the Waste Heat Recovery programs. Both of these relate to heavy duty diesel engines and are significantly under-funded in the administration's fiscal year 2008 request. Formerly separate programs, these research areas were folded into the umbrella Advanced Combustion Engine R&D program in this year's request. The Heavy Truck Engine portion of the administration's request was reduced to \$3.2 million for fiscal year 2008, down from \$12.2 million in fiscal year 2007 and fiscal year 2006. The requested increase would allow for funding for heavy truck engine research of \$15.4 million in fiscal year 2008. The Waste Heat Recovery program of the administration's request was reduced to zero, down from \$4 million in fiscal year 2007 and fiscal year 2006. The requested increase would allow \$3 million for waste heat recovery research in fiscal year 2008. These programs are critically important to the heavy duty diesel engine industry efforts to meet stringent emissions requirements through better understanding of combustion technologies. Heavy truck engines consume nearly 25 percent of all surface transportation fuels used in the United States, and the Heavy Truck Engine

program is critical to engine manufacturers' efforts to increase on-highway fuel efficiency while meeting EPA's near zero 2010 emissions regulations. Significant technology hurdles remain in the areas of engine efficiency improvements, co-fuels development, aftertreatment requirements and subsystem durability, on-board diagnostics and fuel penalty minimization due to the use of aftertreatment. Hybrid technologies are also becoming attractive for heavy duty engine applications, warranting additional research effort. The Waste Heat Recovery program is critical because over 50 percent of fuel energy is lost in diesel engines through wasted heat in exhaust, lubricants and coolants. This program is focused on identifying and developing innovative energy recovery technologies, such as thermoelectric, turbo-compounding and Rankine cycle technologies. It seeks to improve truck energy efficiency by 10 percent through better waste heat recovery technologies.

Office of FreedomCAR and Vehicle Technologies/Fuel Technologies

Non-Petroleum Based Fuels and Lubricants.—Cummins recommends an increase in the administration's request of \$6.9 million by \$3.0 million to bring the program total to \$9.9 million in fiscal year 2008. This program funds research to better understand renewable (such as biodiesel and ethanol) and synthetic fuel properties and their effect on engine system performance when blended with petroleum fuels. While biodiesel fuel blends are becoming acceptable in the marketplace, their effect on various engine components, including fuel systems, lubricants and aftertreatment systems, is unknown. Current fuel filters are less effective for separating emulsified water in biodiesel blends and are likely to cause problems in the field. The increase in funding will help develop efficient techniques to remove water from biodiesel fuel blends, better understand biodiesel fuel effects on particulate filters, and evaluate biodiesel and lubricant interactions.

Advanced Petroleum Based Fuels (APBF).—Cummins recommends an increase in the Administration's request of \$6.5 million by \$1.0 million for a program total of \$7.5 million for fiscal year 2008. This requested increase would allow additional study of fuel properties to enable heavy duty diesel engines to operate in the most efficient mode while meeting future emissions standards. Engine companies are required to prove emissions compliance for over 435,000 miles of useful engine life. The goal of this program is to study the impacts of fuel and lube oil sulfur content on durability and reliability of particulate aftertreatment systems.

Office of FreedomCAR and Vehicle Technologies/Materials Technologies

Propulsion Materials Technology—Heavy Vehicle Propulsion Materials Program.—Cummins recommends an increase in the administration's request of \$4.8 million by \$1.0 million to bring the program total to \$5.8 million in fiscal year 2008. This program supports research and development of next generation materials to enable diesel engine efficiency improvements, improved reliability and reduced aftertreatment system costs. Traditional engine materials may not be adequate for the next generation of advanced combustion concepts, such as low temperature combustion (LTC). High pressure injection fuel systems are needed to support these combustion technologies. Smaller hole size and clearance in emerging fuel systems requires new material capabilities to remove submicron particles from the fuel. Further research is also needed on advanced materials to mitigate cost issues relating to the use of precious metals required for advanced nitrogen oxides (NO_x) reduction technologies. Increased funding for the program will support studies on a range of advanced materials technologies, including lightweight high strength materials for engine components, composites, catalysts and soot oxidation, filtration media modeling and nano-fiber filter technologies.

Office of Hydrogen, Fuel Cells and Infrastructure Program/Hydrogen Technology

Transportation Fuel Cell Systems.—Cummins requests that the committee support the administration's requested amount of \$8.0 million for fiscal year 2008. As designed, the program provides support for R&D and system integration of energy efficient auxiliary power unit (APU) technologies for mobile or off-road applications. The goal of this effort is the demonstration of a solid oxide fuel cell (SOFC) based APU for Class 7/8 on-highway diesel trucks. Reduction of diesel fuel consumed in the idling of large diesel trucks is widely recognized as an important element in reducing exhaust emissions from heavy trucks. It would also reduce our Nation's overall dependence on foreign sources of oil. It is estimated that a potential reduction of up to 800 million gallons of diesel fuel is possible annually if SOFC systems can be used to provide the heating, cooling and electrical needs of truck fleets in lieu of idling. In 2005, Cummins Power Generation and our partner, International Truck and Engine Company, conducted analysis and design work to accurately define the requirements for such an APU, and we believe the goal is achievable. Increased

funding in fiscal year 2008 would allow the demonstration of a practical SOFC prototype that is integrated on a typical truck platform.

OFFICE OF ELECTRICITY DELIVERY AND ENERGY RELIABILITY

Research and Development/Distributed Energy Resources

Distributed Generation Technology Development—Advanced Reciprocating Engine Systems (ARES).—Cummins recommends an increase in the administration's request of \$0 million by \$1.5 million to bring the program total to \$1.5 million in fiscal year 2008. The objective of this program is to develop high efficiency, low emissions and cost effective technologies for stationary natural gas systems between 500–6,500 kw by the year 2010. Natural gas-fueled reciprocating engine power plants are preferred for reliability, low operating costs and point of use power generation. Technologies sponsored by the ARES program have demonstrated 44 percent engine efficiency (an increase from the 32–37 percent baseline) and higher power densities than current products, with an expected reduction in life cycle costs and carbon dioxide (CO₂) emissions. Improved combustion, air handling and controls developments have been successfully implemented in a field test engine and genset. Further technical challenges include combustion development for system efficiency, nitrogen oxides (NO_x) reductions, advanced sensors and controls, hardware durability and lower life cycle costs. The development of distributed power generation supports national energy security needs, improves protection of critical infrastructure to address homeland security concerns, and decreases dependence on the national electrical grid system through point of use energy production.

OFFICE OF FOSSIL ENERGY

Office of Clean Coal and Natural Gas Power Systems/Fuel Cell Research and Development

Innovative Concepts—Solid State Energy Conversion Alliance (SECA).—Cummins requests that the committee support the administration's request of \$62.0 million for fiscal year 2008. The goal of the SECA project is the development of a commercially viable 3–10 kw solid oxide fuel cell (SOFC) module that can be mass-produced in modular form for RV, commercial mobile and telecommunications markets. The modular nature of SOFCs makes them adaptable to a wide variety of stationary and mobile applications. SOFCs can play a key role in securing the Nation's energy future by providing efficient, environmentally sound electrical energy from fossil fuels or hydrogen. A Cummins prototype successfully completed Phase 1 of the SECA program, operating for approximately 2,000 hours at Cummins Power Generation in Minneapolis, and meeting (pending DOE confirmation) SECA targets for durability and cost. Phase 2 of the program will bring a critical transition from current fuels used with SOFC (LPG or natural gas) to diesel fuel for mobile applications including RV, marine and truck auxiliary power units (APUs). The program is moving forward toward development, leading to possible commercial production in 2013. This program combines the efforts of the DOE national laboratories, private industry and universities. Federal funding is critical to support the research needed to keep this technology moving from the laboratory to commercial viability.

Thank you for this opportunity to present our views on these programs which we believe are of great importance to our Nation's energy and economic security as well as continued environmental progress. These programs are critical to needed advancements in the transportation and power generation sectors.

PREPARED STATEMENT OF THE UNIVERSITY OF TULSA

Dear Respected Members, Senate Appropriations Subcommittee on Energy and Water: I respectfully ask for the continuation of the funding of the project titled "Development of Next Generation Multiphase Flow Prediction Tools" for the fiscal year of 2008. This project was selected in response to DOE's Oil Exploration and Production solicitation DE-PS26-02NT15375-02, Public Resources Invested in Management and Extraction (PRIME), July 15, 2002. The project started on June 1, 2003 and scheduled to be completed by August 31, 2008. The anticipated DOE contribution for 2008 is \$107,940. This funding is significantly leveraged by The University of Tulsa (\$151,355 (58 percent of total cost)). In the rest of my testimony I would like to emphasize the importance and results of the project.

The "easy" oil and natural gas finds are becoming a rarity as we depleted them posing a significant problem of energy shortage. Oil and gas industry, academia and government are working to improve enabling technology to facilitate more produc-

tion from existing resources and exploitation of “difficult to produce resources including ultra deep water resources, heavy oils, and unconventional natural gases.”

The developments of fields in deep and ultra-deep waters (5,000 ft and more) are becoming more common. It is inevitable that production systems will operate under multiphase flow conditions (simultaneous flow of gas-oil-and water possibly along with sand, hydrates (ice-like structures, and waxes)). Recovery of resources from deep waters poses special challenges and requires accurate multi-phase-flow predictive tools for several applications, including the design and diagnostics of the production systems, separation of phases in horizontal wells, and multiphase separation. The available tools cannot properly account for the three-phase flow. At best, they lump oil and water phases as a single liquid phase, assuming homogeneous liquid flow. Therefore, the development of revolutionary next-generation multiphase flow predictive tools is needed.

Multiphase flow prediction is essential for every phase of hydrocarbon recovery, from design to operation. Recovery from deep waters poses special challenges and requires accurate multiphase-flow predictive tools for several applications, including the design and diagnostics of production systems, separation of phases in horizontal wells, and multiphase separation. The overall objective of the proposed work is to develop new technologies that will enable future exploitation of hydrocarbons from deep waters through the development of revolutionary next-generation predictive tools for the simultaneous flow of gas-oil-water in pipes.

The novel software tool developed in this project help design proper production and transportation systems. There are many impacts of the new tool being developed. For the industry, it is imperative to have accurate predictive tools for the production and transportation of hydrocarbons and associated water. The lost production from a single offshore pipeline due to inadequate design can cost \$500,000 or more per day. More importantly, the lack of technology can result in overly conservative designs that can render some projects cost-prohibitive. Any technological improvement towards increases in producible reserves and efficient production practices, such as the novel software developed in this project, will realize more hydrocarbon production and increase U.S. employment. Moreover, the new technologies may give U.S. companies a technological advantage to exploit similar fields or technical services in other countries, creating possibly more job opportunities for U.S. residents. For the public at large, the availability of additional domestic hydrocarbon reserves will reduce the dependency of the United States on hydrocarbon imports, bringing more stability to U.S. energy markets and the U.S. economy as a whole.

Significant progress has been made in this project. The model, engine of the software, has already been developed for the prediction of flow behavior during production and transportation of gas, oil, and water through wellbores and pipelines. Closure relationships describing the distribution between the liquid phases—namely mixing and inversion are proposed. Significant improvements are observed over the predictions by the two-phase unified models that assume a fully mixed liquid phase. The three-phase unified model is currently being enhanced by improving the closure relationships. The model is being incorporated in various software packages by the software companies.

In conclusion, DOE’s contribution to this project has already been invaluable. The results and deliverables of the project are being incorporated in available design software for design engineers to use. Moreover, two graduate students funded through the project are employed in oil and gas by companies operating in the United States serving the public through working on oil and gas development projects in the United States. One more year of support is needed to fully complete the project. We ask that the funding for this project to be continued in fiscal year 2008.

PREPARED STATEMENT OF THE GAS TECHNOLOGY INSTITUTE

This submittal is intended for the Senate Subcommittee on Energy and Water. Comments are for consideration for establishing the fiscal year 2008 Fossil Energy Oil and Natural Gas Program budgets. Thank you for the opportunity to provide the subcommittee with information for use during deliberations.

Recently, a new record was established! The technically recoverable gas resource base in North America hit a 30-year high based on the latest estimate by the National Petroleum Council in their comprehensive Year 2003 study. Our understanding of the gas resource base has resulted in a five-fold increase over the last 30 years (See Figure No. 1).

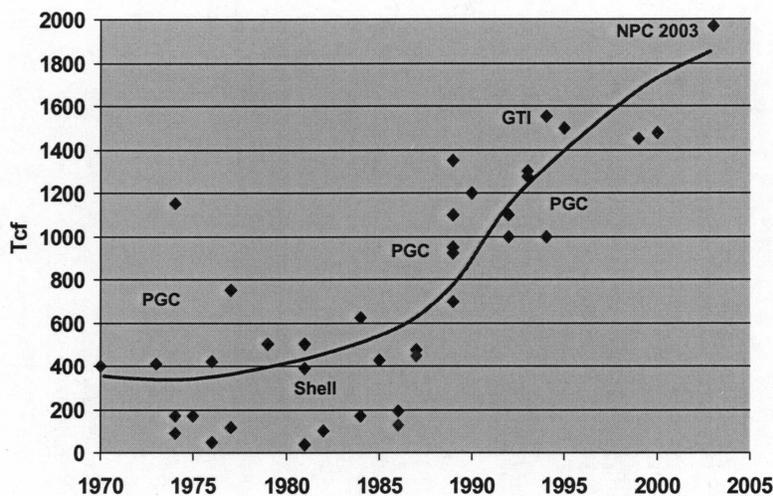


FIGURE 1.—Technically Recoverable Gas Resource Base Estimates (Tcf) Modified from William Fisher, et. al. University of Texas

With the resource base at record highs—expectations might be for gas prices to be at record lows. Having just paid our winter heating bills everyone is aware of current natural gas prices. Understanding this dichotomy requires and understanding of both our remaining oil and gas resource base.

Our resource base while large and diverse is also heavily explored and difficult to access. Oil and gas is found in rocks that are deeper in depth onshore greater than 15,000 ft. Oil and gas is found in lower permeability formations, in deeper waters offshore, in environmentally sensitive areas (Rocky Mountains) and is at greater distances from markets (Alaska). All of these factors combine to the point where our large technically recoverable resource is also technically challenging.

The resource is there however . . . and located within North America. Our remaining oil and gas endowment is a considerable asset and is being overlooked.

We continue to drill an increasing number of oil and gas wells but they produce less resource for many of the reasons just discussed.

Demand exceeds supply and we all know the consequence of that situation whether the commodity be a gallon of gasoline or a gallon of milk. We are experiencing record high oil and gas prices that will lead to significant economic hardship if action is not taken.

The action to be taken is a renewed emphasis on technology. New technology must be developed and applied. Ten years ago, Coalbed Methane was part of the technical resource base with little production. A focused research program initiated by the Department of Energy resulted in gas production that now satisfies 7 percent of our gas demand (Figure No. 2 Coalbed Methane Production).

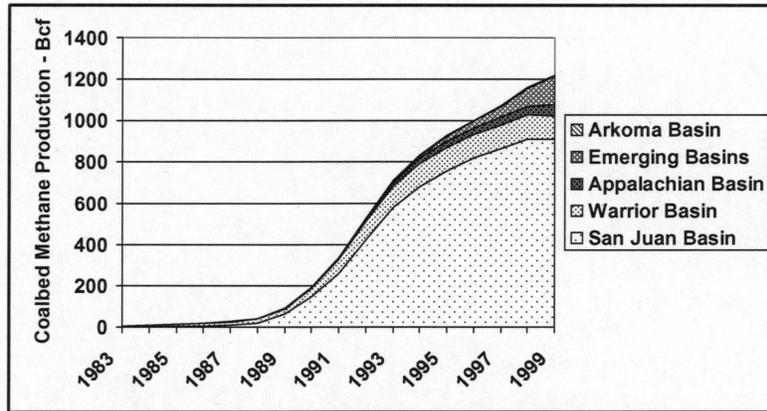


FIGURE 2.—Coalbed Methane Production in the United States

Funding for Oil and Gas R&D was almost cut in half during the 1990's. Adequate gas supplies and \$2.00 wellhead prices put pressure on the bottom line. The industry, for sound business reasons, was not investing in supply R&D sufficient to meet mid-term demand. The super-majors, while they may have significant research budgets, have other more profitable options overseas. The service companies, which meet many of the research needs of large producers, do so at the direction of their clients. The smaller independents, which develop most of our onshore oil and gas resources, do not have the resources to invest in the R&D. Now, with gas prices at \$6.00 and oil at \$60 abandoned R&D capabilities are sorely missed.

We require a renewed focus on our domestic resource base to fully utilize our significant and valuable natural gas and remaining oil endowment. New technology is the key to converting "Resource to Production."

The National Petroleum Council as part of their 2003 study on natural gas estimated the impact of various actions on natural gas supplies and prices. Figure No. 3 illustrates the fact that new technology can have as high or greater impact than most other options. With this level of impact new technology programs should be receiving top priority during budget deliberations.

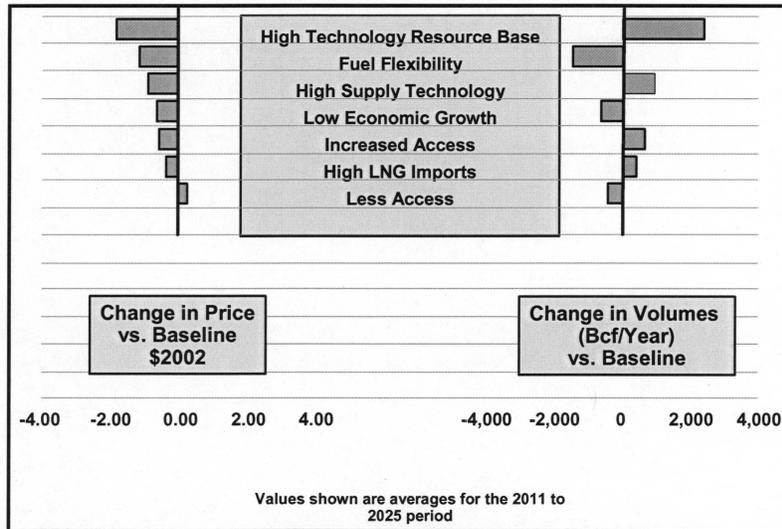


FIGURE 3.—NPC Sensitivity Studies on Gas Price and Supply

The Department of Energy Oil and Gas program is the last remaining organized R&D effort with a focus on our remaining domestic oil and gas resource base. Important projects have been developed in several strategic areas including:

- Unconventional gas resources such as tight gas sands, coalbed methane and gas from shales.
- Microhole drilling for remote exploration and minimum land impact.
- Stripper or low production oil wells.
- Environmental issues including water produced from oil and gas operations.
- Access to Federal lands with minimum impact.
- Technology transfer for Independent producers.

Just when the need is greatest and at a time when research efforts of this type should be significantly increased in size, the administration has recommended that the programs be eliminated.

I strongly believe that meeting domestic oil and gas supply has value to the Nation on par with all other federally supported programs, and that congressional and administration program and funding priorities should reflect that importance.

PREPARED STATEMENT OF THE INTERSTATE OIL AND GAS COMPACT COMMISSION

Mr. Chairman and members of the Subcommittee, on behalf of the Interstate Oil and Gas Compact Commission (IOGCC), I am submitting this testimony in support of fiscal year 2008 funding for a new U.S. Department of Energy program that would address a serious public safety and environmental problem that affects all the states that historically drilled for oil and gas. Specifically, IOGCC is supporting a \$10 million appropriation to permanently plug abandoned and "orphaned" oil and gas wells.

The member states of the Interstate Oil and Gas Compact Commission account for more than 99 percent of the oil and natural gas produced onshore in the United States. Formed by Governors in 1935, the IOGCC is a congressionally-ratified interstate compact of 30 member states. The mission of the IOGCC is two-fold: to conserve our nation's oil and gas resources and to protect human health and the environment.

The orphan oil and gas well plugging program for states was authorized in Section 349(g) and (h) of the Energy Policy Act of 2005. For lack of congressional appropriation, the U.S. Department of Energy has yet to establish the program, however, the section authorizes up to \$20 million annually in federal matching funds to states for the purpose of plugging abandoned wells—some of which are over a century old.

The program matches existing state funds to speed the plugging and clean-up of old wells for which there is no responsible party.

No new orphan wells can be created, since today's state regulatory structures, which require adequate bonding or insurance coverage, ensure that the costs of plugging will be covered if the responsible party becomes unwilling or unable to perform the task. Plugging the remaining orphan wells by supplementing state programs will create no new bureaucracy and will provide a lasting solution to the problem.

States have taken the lead in addressing the orphan well issue, and thousands of sites have been reclaimed and wells permanently plugged by the states. All oil and gas producing states have established plugging funds, but they are insufficient to address a timely cleanup and plugging of the remaining orphan wells. It is estimated that approximately 60,000 orphan wells remain that have the potential to cause public safety or environmental harm. The requested \$10 million appropriation to match state oil and gas plugging funds will permanently plug the nation's remaining orphan wells over the next 5 years.

The potential for groundwater contamination is the primary environmental concern associated with orphan wells. Unplugged wells can potentially serve as a conduit for the migration of fluids into a ground water aquifer. In some cases, fluids could flow all the way to the surface, potentially contaminating surface soils surrounding the well.

Public safety is also in jeopardy from unplugged wells. Escaping methane gas from undiscovered pre-Civil War era wells can migrate to the surface where unsuspecting homeowners and businesses may be required to evacuate until the danger can be ameliorated. Similarly, farm equipment and equipment operators can be seriously injured by the unearthing of unknown oil or gas wells buried under decades of soil on agricultural land. States have excellent programs to find and identify such public safety hazards, but plugging and cleaning up the sites is dependent on adequate funding.

This program is not an earmark, but rather an authorized U.S. DOE program. Funding of the orphan well plugging program would set in place an efficient and simple program to direct funding to state plugging efforts. The appropriation would be directed to the U.S. Department of Energy, which in turn would utilize the IOGCC as the fund administrator, as directed by the authorizing statute. IOGCC would help ensure that federal dollars would be dedicated to dealing with the wells that pose the greatest danger to public safety and the environment. An IOGCC Task Force has developed a prioritization schedule to guide the well selection process. States would match the federal funding, and submit a completed plugging report to the IOGCC for reimbursement. The long-range goal is to plug every orphan well in the nation that poses a threat to the environment or public safety.

Thank you for this opportunity to submit our testimony. We urge the Subcommittee's favorable consideration of this request. For questions or further information, please feel free to contact Diane S. Shea, IOGCC Washington Representative, at dsshea60@verizon.net, or 301-913-5243.

PREPARED STATEMENT OF THE NUCLEAR WASTE STRATEGY COALITION

Mr. Chairman and distinguished members of the Committee, the Nuclear Waste Strategy Coalition (NWSC or Coalition) appreciates this opportunity to present a Statement for the Record regarding the status of the fiscal year 2008 Department of Energy (DOE) Budget Request.

ABOUT THE NWSC

The NWSC is an ad hoc group of state utility regulators, state attorneys general, electric utilities and associate members representing 46 member organizations in 26 states. The Coalition was formed in 1993 out of frustration at the lack of progress DOE had made in developing a permanent repository for spent nuclear fuel (SNF) and high-level radioactive waste (HLRW), as well as Congress's failure to sufficiently fund the nuclear waste disposal program (Program) since 1982. The mission and purpose of the NWSC is to achieve:

- Removal of commercial spent nuclear fuel and high-level radioactive waste from temporary civilian and decommissioned storage sites located in 33 states.
- Authorization of a temporary, centralized commercial spent nuclear fuel storage facility.
- Appropriations from the Nuclear Waste Fund (NWF) sufficient to enable the DOE to fulfill its statutory and contractual obligations.

- Augmentation of transportation planning and regulations to facilitate transportation systems plan.
- Capping of the NWF fee at the present one-tenth of a cent per kilowatt-hour.
- Operation of a permanent repository at Yucca Mountain that is capable of receiving waste as soon as possible upon authorization by the Nuclear Regulatory Commission (NRC).

FISCAL YEAR 2008 APPROPRIATIONS

Fiscal year 2008 is a pivotal year for the Program, and the NWSC strongly supports the DOE's fiscal year 2008 budget request. Congress has the opportunity to determine the direction of the Program by appropriating the full \$494.5 million as requested by the DOE in its fiscal year 2008 budget. As stated by Mr. Ward Sproat, Director, DOE/Office of Civilian Radioactive Waste Management (OCRWM), during his March 7, 2007 testimony, it is absolutely vital for Congress to fully fund the Program in order for the DOE to carry out the latest projected Best-Achievable Schedule opening date of March 2017 for the permanent repository that includes the filing of the license application to the NRC in June 2008.

Other DOE objectives in the fiscal year 2008 request include certifying the licensing support network, completing the supplemental Yucca Mountain Environmental Impact Statement, designing the standard canisters to be used by the industry, performing critical personnel safety upgrades at the Yucca Mountain site, analyzing and reporting to Congress on the need for a second repository, resolving comments and issuing the final EIS for the Nevada rail line that is required to transport SNF and HLRW to the permanent repository, and funding independent scientific studies by the State of Nevada, Nye County, Inyo County, the University of Nevada and affected units of local government.

NUCLEAR WASTE FUND

There are adequate funds available in the NWF to implement the federal policy for permanent disposal of SNF and HLRW, provided Congress appropriates them. Since 1983, ratepayers from 41 states have paid more than \$28 billion, including interest, into the NWF. The NWF was established by the U.S. Congress for safe, timely, and cost-effective centralized storage and the development of a permanent repository. The nation's ratepayers who receive electricity from nuclear generating utilities pay over \$750 million per year into the NWF, and with interest credits, this amount exceeds \$1.2 billion annually. To date, approximately \$10 billion has been spent to assure the national repository is developed in the most responsible manner to protect the health, safety, and security of every American, including those in Nevada, as well as each of the States with a nuclear power plant. The Fund now holds more than \$18 billion, including interest.

Regrettably, the NWF account balance has been used to support other programs and camouflage the federal deficit rather than to develop the permanent repository. Consequently, more than 55,000 metric tons of SNF and HLRW are presently stranded at more than 100 sites (commercial and defense) in 39 states. The NWSC asks that Congress codify the NWF annual receipts as offsetting collections to ensure that every cent collected from the ratepayers will be delivered to the Program, as intended by the 1982 Nuclear Waste Policy Act, as amended (NWPA).

NUCLEAR WASTE FUND REFORM

NWSC members believe it is vitally important that Congress ensure the Program is funded in a manner that will allow the DOE to implement the federal Program in accordance with the NWPA. The Program is already in default of the NWPA requirement to begin waste acceptance by 1998, and continues to slip further behind schedule.

For instance, the DOE's fiscal year 2007 budget request for the Program was \$544.5 million. However, Congress appropriated \$444.5 million, a \$100 million reduction. Consequently, three dozen workers at the Yucca Mountain project have already lost their jobs and several hundred others may face layoffs in the months ahead. Such cuts will likely result in further setbacks to the Program schedule.

Additionally, in March 2007 the DOE submitted to Congress the "OCRWM Budget Projection fiscal year 2009-fiscal year 2023 Executive Summary," that projected annual budget expenditures of integrated Program needs through completion of the repository surface facilities. The projected budget is based on funding requirements for construction of the repository and the transportation infrastructure needed to meet the Best-Achievable Schedule opening date of March 2017, assuming enactment of the Administration's legislative proposal the Nuclear Fuel Management and Disposal Act.

To help keep the Program on track and the Best-Achievable Schedule, the NWSC strongly supports the Administration's proposal for reforming the mechanism for funding the Program. In March 2007, the Administration submitted to Congress a legislative proposal that, among other things, would provide a stable source of funding for this Program by reclassifying mandatory NWF receipts as discretionary, in the amount equal to appropriations from the NWF for the disposal program. Funding for the Program would still have to be requested annually by the President and appropriated by the Congress from the NWF.

While not calling for carte blanche funds for the DOE without Program oversight, the NWSC has been very supportive of the OCRWM program over the years and has worked to ensure that Congress appropriate sufficient funds for the nuclear waste transportation and disposal program. We continue those efforts today as we encourage Congress to introduce comprehensive legislation that reforms the NWPA, such as the "Nuclear Fuel Management and Disposal Act," proposed by the Administration on March 6, 2007. Congress has an opportunity to enhance the management and disposal of SNF and HLRW, ensure protection of public health and safety and the territorial integrity and security of the permanent repository through legislative reform. Moreover, reforming the annual funding for the Program, assures the 41 states' ratepayers that their payments into the NWF are being used for their intended purpose—the removal of SNF and HLRW from commercial and decommissioned nuclear power plants.

Continued under-funding will have dire consequences on the completion of the nation's permanent repository, the transportation infrastructure system plans and the transportation and disposal of canisters. As several members of Congress have commented in the past, "This Program has been starved for funding"—the 2010 deadlines for waste fuel acceptance at Yucca Mountain was, "a pipe dream at existing funding levels." We hope that the 2017 deadline is not another "pipe dream."

LAWSUITS

It has been more than ten years since the DOE defaulted on its obligations, as stated in the Nuclear Waste Policy Act of 1982, as amended, to remove SNF and HLRW from the nation's nuclear power plants. In its 1996 Indiana-Michigan decision, the U.S. Court of Appeals affirmed that the DOE was obligated to start moving waste on January 31, 1998, "without qualifications or condition."

More than 60 utilities have sued the federal government for damages associated with DOE's default to meet its 1998 obligations. The 11th Circuit Court of the U.S. Court of Appeals has ruled that these damage payments will not come from the Nuclear Waste Fund. Meanwhile, the U.S. Court of Claims has awarded more than \$220 million to plaintiffs so far. As stated in Mr. Sproat's testimony, DOE has estimated that each year the repository's opening is delayed beyond 2017, the U.S. taxpayers' potential liability to contract holders will increase by approximately \$500 million per year. The longer Congress withholds adequate annual funding from DOE and declines to reform the NWPA, the greater the potential liability will be to the nation's taxpayers.

If the DOE fails to meet vital Program milestones such as submitting the license application to the NRC, the financial liability the DOE faces through lawsuits will continue to mount. As the DOE continues to delay honoring its contracts with utilities to remove spent fuel from plant sites, both the amount of SNF and HLRW stored, and the costs associated with storing it increase. NWSC members are concerned about the increased costs that ratepayers must bear as a result of these delays.

TRANSPORTATION—RIGOROUS SAFETY STANDARDS

The DOE has proven that it can safely transport SNF and HLRW from plant sites across the nation. Since the 1960s, more than 3,000 shipments of spent nuclear fuel from nuclear power plants, government research facilities, universities and industrial facilities traveling over 1.6 million miles, "without a single death or injury due to the radioactive nature of the cargo."¹ This equates to more than 70,000 metric tons of SNF, an amount equal to what the NWPA authorizes for Yucca Mountain. Shipments include 719 containers from the Naval Nuclear Propulsion program between 1957 and 1999, and 2,426 highway shipments and 301 railway shipments from the U.S. nuclear industry from 1964 to 1997. In addition, since 1996, shipments of spent nuclear fuel have been safely transported to the United States from 41 countries to the DOE facilities;² again, without a single death or injury—not one.

¹National Conference of State Legislatures' Report, January 2000.

²U.S. Department of Energy Report to the Committees on Appropriations, January 2001.

If a repository is licensed at Yucca Mountain, the DOE projects approximately 4,300 shipments over a 24-year period, averaging 175 shipments of spent nuclear fuel per year, a relatively small amount compared with the approximately 300 million annual shipments of hazardous materials (explosives, chemicals, flammable liquids, corrosive materials, and other types of radioactive materials) that are currently transported around the country every day.

Furthermore, the DOE has safely and successfully made more than 5,542 transuranic waste shipments at the Waste Isolation Pilot Plant (WIPP) in New Mexico as of March 12, 2007.³ The Western Governors' Association (WGA) signed an agreement with the DOE in April 1996 that affirmed regional planning processes for safe transportation of radioactive material. All regional high-level radioactive waste transportation committees also endorsed the WGA approach. The WIPP transportation planning system is setting the standard for safety and proving to be a critical step toward solving the nation's spent nuclear waste disposal transportation program.

To ensure safety at on-site spent fuel storage facilities and during transportation, the material is stored in containers that meet the NRC's rigorous engineering and safety standards testing. To satisfy the NRC's rigorous standards for subsequent transportation approval, these containers have been dropped 30-feet onto an unyielding surface, dropped 40 inches onto a 6-inch vertical steel rod, exposed for 30 minutes to a 1,475 °F fire, submerged under 3 feet of water for eight hours, immersed in 50 feet of water for at least eight hours (performed in a separate cask), and immersed in 656 feet of water for at least one hour.⁴

CONCLUSION

The federal government's failure to deliver extends back several decades and the U.S. Congress must immediately address the growing need of disposal of SNF and HLRW. Therefore, it is vitally important that the leadership in Congress fully fund the nuclear waste disposal program for fiscal year 2008 and pass legislation that reforms Program funding for the continued progress of the permanent repository. While the Program continues to face complex challenges, passage of legislation will allow the Program to remain viable and afford the opportunity for ultimate success.

In contrast, the NWSC does not support competing legislation that would have the DOE take title of SNF at plant sites. This previously introduced bill proposes stranding fuel indefinitely throughout the nation while the nation's ratepayers continue to pay in perpetuity into the NWF, which is not an acceptable option.

Based on DOE reports, the NWSC understands the Global Nuclear Energy Partnership (GNEP) program would reduce the volume, heat and toxicity of byproducts placed in the permanent repository. However, this program does not diminish in any way the need for, or the urgency of, a geologic permanent repository at Yucca Mountain, particularly because the Navy, research and legacy fuel are not candidates for the recycling program.

The DOE fiscal year 2008 budget contains \$2 million for a study ordered by Congress to determine whether a second repository should be built, and where, as required under Section 161(b) of the NWPA. The DOE has already stated that it would start its review with the two-dozen candidate sites that were under consideration prior to selection of the Yucca Mountain site. Therefore, it is clear that all states have a stake in following through with the nuclear waste disposal policy that Congress selected when it passed the NWPA and reinforced when it voted in 2002 to support the President's selection of Yucca Mountain as a site suitable for development of the national repository.

The members of the NWSC urge Congress to take a long-term view of our nation's energy needs, national security interests, and fairness to both ratepayers and electric utilities by appropriating full funding for the Program for fiscal year 2008. The Coalition members believe receipt of requested annual funding will make it possible for DOE to meet its projected schedule and eventually bring the nuclear waste disposal program to fruition as promised and mandated by the 1982 Nuclear Waste Policy Act, as amended.

³U.S.DOE/Waste Isolation Pilot Plant Shipment Figures, March 2007.

⁴Nuclear Regulatory Commission Testing Requirements, 10 CFR Sections, 71.61, 71.71, and 71.73.

PREPARED STATEMENT OF THE UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH (UCAR)

On behalf of the University Corporation for Atmospheric Research (UCAR) and the university community involved in weather and climate research and related education, training and support activities, I submit this written testimony for the record of the Senate Committee on Appropriations, Subcommittee on Energy and Water Development.

UCAR is a 70-university member consortium that manages and operates the National Center for Atmospheric Research (NCAR) and additional programs that support and extend the country's scientific research and education capabilities. In addition to its member research universities, UCAR has formal relationships with approximately 100 additional undergraduate and graduate schools including several historically black and minority-serving institutions, and 40 international universities and laboratories. UCAR's principal support is from the National Science Foundation with additional support from other federal agencies including the Department of Energy (DOE).

DOE Office of Science

The atmospheric and related sciences community appreciates Congress' continued support for the Administration's American Competitiveness Initiative, and its goal to double the DOE Office of Science budget by fiscal year 2016. We are pleased that the fiscal year 2008 request again makes the Office of Science a high priority. The needs of the country demand that DOE continue to produce a world-class program in science and energy security research. The Office of Science manages fundamental research programs in basic energy sciences, biological and environmental sciences, and computational science, and supports unique and vital parts of U.S. research in climate change, geophysics, genomics, life sciences, and science education. Continuing to implement the doubling of basic research funding within DOE will result in educating, training and sustaining thousands in the nation's workforce (28,000 in fiscal year 2008) in our laboratories and universities.

I urge the Subcommittee to fund the DOE Office of Science at the level of the President's fiscal year 2008 budget request of \$4.4 billion, and to enable the agency to apply that entire amount toward planned agency research priorities. As Director of the Office of Science Raymond Orbach recently stated, "These are extraordinary times for science." This investment in our country's scientific leadership will enable many researchers to make extraordinary progress in numerous areas of discovery.

Biological and Environmental Research (BER)

Within the Office of Science, the Biological and Environmental Research (BER) program develops the knowledge necessary to identify, understand, and anticipate the potential health and environmental consequences of energy production and use. These are issues that are absolutely critical to our country's well being and security, and now more than ever, they are being scrutinized by Members of Congress and the media in light of the recent Intergovernmental Panel on Climate Change (IPCC) report that states that warming of the climate is "unequivocal." Peer-reviewed research programs at universities, national laboratories, and private institutions play a critical role in the BER program by involving the best researchers the nation has to offer, and by developing the next generation of researchers. Approximately 27 percent of BER basic research funding supports university-based activities directly and 40 percent supports basic research at national laboratories. All BER research projects, other than those that have been in the "extra projects" category, undergo regular peer review and evaluation.

The President's BER Request for fiscal year 2008 is \$531.9 million, a 15 percent increase over the fiscal year 2007 Joint Resolution. While this is a substantial increase, it should be seen in the context of past appropriations, the President's higher fiscal year 2007 request for BER, and the decline of BER funding that has taken place in the recent past. With the elimination of congressionally directed projects, BER received a three percent increase in the final fiscal year 2007 Joint Resolution. The fiscal year 2008 request, therefore, makes up much lost ground. I urge the Subcommittee to fund Biological and Environmental Research at the level of the fiscal year 2008 Budget Request, \$531.93 million, a 4.5 percent increase over the fiscal year 2007 Request, and to enable BER to apply that entire amount toward planned agency research priorities that are peer-reviewed and that involve the best researchers to be found within the nation's university research community as well as the DOE labs.

BER's Climate Change Research Program

The International Polar Year (IPY) 2007–2008 officially began March 1, with over 200 scientific projects planned, involving thousands of scientists from over 60 nations examining a wide range of physical, biological and social research topics. The scientific need to focus on the remote areas of the Earth will provide better understanding of the current global climate.

DOE's IPY activities are supported by the DOE Office of Science's Climate Change Research Program in which research is focused on understanding the basic chemical, physical, and biological processes of the Earth's atmosphere, land, and oceans and how these processes may be affected by energy production and use, primarily the emission of carbon dioxide from fossil fuel combustion. DOE's Climate Change Prediction Program's contribution to the IPY includes improving climate change projections using state-of-the-science coupled climate models in time scales of decades to centuries and space scales of regional to global.

BER's Climate Change Research also contributes substantially to the nation's Climate Change Research Initiative (CCRI) goals of understanding and predicting climate change, including its causes, consequences, and potential for abrupt change. The long-term DOE goal is to deliver improved climate data and models for policy makers and to substantially reduce differences between observed temperature and model simulations at regional scales. This work is critical to the ability of policy makers and stakeholders to provide stewardship resulting in a healthy planet—and it is particularly important as signs of increasingly dramatic change in our climate and environment appear.

The Climate Change Research Request of \$138.1 million for fiscal year 2008 is a 2.4 percent increase over the fiscal year 2007 Request. I urge the Subcommittee to fund Climate Change Research at an fiscal year 2008 level that is consistent with the requested increase for BER stated above, a 4.5 percent increase over the fiscal year 2007 Request, for a total of \$144.3 million, and to enable DOE to apply the entire amount toward planned national research priorities.

Advanced Scientific Computing Research (ASCR)

Within DOE's Office of Science, Advanced Scientific Computing Research (ASCR) delivers leading edge computational and networking capabilities to scientists nationwide, enabling advances in computer science and the development of specialized software tools that are necessary to research the major scientific questions being addressed by the Office of Science. Development of this capacity is a key component of DOE's strategy to succeed in its science, energy, environmental quality, and national security missions.

ASCR's continued progress is of particular importance to atmospheric scientists involved with complex climate model development, research that takes enormous amounts of computing power. By their very nature, problems dealing with the interaction of the earth's systems and global climate change cannot be solved by traditional laboratory approaches.

Within ASCR, several programs are of particular importance to climate change computer modeling work. The Leadership Computing Facility (LCF) at Oak Ridge National Laboratory (ORNL) provides a high performance computing resource for the Climate Science End Station and, in 2008, will continue its development into a world class facility with over 80 percent of its resources being made available to unclassified scientific research. In addition, the National Energy Research Scientific Computing Center (NERSC) operated by Lawrence Berkeley National Laboratory, and the Energy Sciences Network (ESnet) are also important enablers for climate research. These computational and networking resources play a vital role in the progress of U.S. climate research.

The high performance computing facilities for the Office of Science serve thousands of scientists throughout the country at laboratories, universities, and other Federal agencies. Computing time is awarded to research groups based on peer review of submitted proposals. Basic research accomplished at these facilities covers a wide range of disciplines including climate modeling. ESnet enables researchers at laboratories, universities and other institutions to communicate with each other using collaborative capabilities that are unparalleled. This high-speed network enables geographically distributed research teams to collaborate effectively on some of the world's most complex problems. Researchers from industry, academia and national labs, through this program, share access to unique DOE research facilities, support the frequent interactions needed to address complex problems, and speed up discovery and innovation.

LCF, NERSC, and ESnet play complementary roles in advancing the complex and challenging science of climate change and other scientific areas of extreme importance to the security and quality of life of our citizens. I urge the Committee to sup-

port the President's fiscal year 2008 request of \$340.2 million for DOE Advanced Scientific Computing Research, a 6.8 percent increase over the fiscal year 2007 request, and to enable DOE to apply the entire amount toward planned national priorities.

Scientific Discovery Through Advance Computing (SciDAC)

BER and ASCR partner to support SciDAC, a progressive, breakthrough program that includes the creation of a first-generation Earth System model based on the extremely successful Community Climate System Model. A major SciDAC goal is to understand basic chemical, physical, and biological processes of the Earth's atmosphere, land, and oceans and how these processes may be affected by energy production and use. Much of the research is designed to provide the data that will enable an objective assessment of the potential for, and consequences of, global warming. This work is becoming increasingly critical as evidence mounts that regions of Earth are warming at an alarming rate. SciDAC research activities are competed via a merit review process and carried out at universities, national laboratories, and private institutions.

Fiscal year 2008 funding will provide support for SciDAC activities including Centers for Enabling Technologies (CETs) that provide the innovations in computational research and development for petascale computational and data management endeavors, including climate research.

BER funding for SciDAC is requested at \$7.7 million for fiscal year 2008 with ACSR supporting SciDAC Computational Partnerships at \$50.2 million, \$21 million of which will fund the CETs. I urge the Committee to support the President's fiscal year 2008 requests within BER and ASCR for overall SciDAC funding.

DOE plays a vital role in sustaining U.S. scientific leadership and generating U.S. competitiveness in a time when other countries are investing heavily in scientific research and technology. On behalf of UCAR and the atmospheric sciences research community, I want to thank the Subcommittee in advance for your attention to the recommendations of our community concerning the fiscal year 2008 budget of the Department of Energy. We understand and appreciate that the nation is undergoing significant budget pressures at this time, and support absolutely the effort to enhance U.S. security and quality of life through the American Competitiveness Initiative, of which the DOE Office of Science is a critical component.

PREPARED STATEMENT OF FUELCELL ENERGY, INC.

FuelCell Energy, Inc. appreciates the opportunity to submit this statement in support of the Department of Energy's Fossil Energy, Fuels and Power Systems, Fuel Cell Program. We urge the Subcommittee to continue to support this breakthrough program by appropriating \$80 million for development of this highly efficient, clean, and secure energy technology.

DOE's Fossil Energy Fuel Cell Program, through the Solid State Energy Conversion Alliance (SECA) fuel cell activity, is developing technology to allow the generation of highly efficient, cost-effective, carbon-free electricity from domestic coal resources with near-zero atmospheric emissions in central station applications. The program directly supports the president's FutureGen project through the development of cost-effective, highly efficient, power blocks that facilitate sequestration in coal-based systems. The technology will also permit grid independent distributed generation applications by 2010.

SECA fuel cell systems operating on coal gas are building blocks for zero emissions power, the ultimate goal of the President's FutureGen Program. These systems are projected to be available at a cost of \$400/kw. In addition, the technology developed in this program will produce electricity at up to 60 percent efficiency in coal-based systems, produce near-zero emissions, and be compatible with carbon sequestration.

In all applications SECA fuel cells will be both low-cost, with the above-stated goals of \$400/kw, as well as highly efficient. Integrated with coal gasification, such systems will approach 60 percent efficiency compared to the existing coal-based power generation fleet average of about 33 percent efficiency. In distributed generation applications even higher efficiencies may be reached, and cogeneration opportunities can further increase efficiency.

Along with these attributes fuel cells are one of the cleanest technologies available in terms of atmospheric emissions, which enhances their attractiveness for urban applications or applications in areas of non-attainment for Clean Air Act emissions. They also provide 24 hour, silent operation.

Finally, coal-based fuel cell systems will increase energy security by using domestic resources. In distributed generation applications fuel cells can eliminate transmission and distribution system infrastructure concerns and issues by providing generation near the point of use and by being able to operate in a grid-independent mode.

The SECA Program consists of six integrated industrial manufacturing teams designing fuel cell systems, developing the necessary materials, and ultimately responsible for deploying the technology. These teams are complemented by two to three dozen core technology performers providing generic problem-solving research needed to overcome barriers to low-cost, high performance technology as identified by DOE and the manufacturing teams. The core technology teams are universities, national laboratories, and other research oriented organizations. This unique structure assures that a variety of approaches to solving the problems associated with fuel cells will be undertaken in a manner that will increase the chances of success for this highly complex technology.

Several of the manufacturing teams are developing systems for application to large central generation systems characterized by FutureGen. The remaining manufacturing teams are developing fuel cells for possible use in both these large systems as well as in distributed generation applications such as auxiliary power units, military power applications and remote or on-site power generation.

The DOE budget request for this program for fiscal year 2008 is \$62.0 million, approximately the same level anticipated for fiscal year 2007 funding. This level of funding will continue to support the current program, which involves larger-scale Phase II development work on the part of manufacturing teams in the program and continued effort by the core technology performers. However, in order to deliver full scale fuel cell system hardware for the FutureGen project additional support is necessary to assist and accelerate the creation of manufacturing capability by the formation of teams between existing fuel cell stack developers and industry with the goal of delivering hardware by the scheduled date of 2011 and also to keep the base program on schedule.

We believe that the SECA fuel cell program has achieved the progress to date as anticipated by the program managers, and will continue to display such progress given sufficient funding support by DOE and the Congress. Hybrid technology has been successfully integrated into the program and an emphasis on use with coal-based systems has been established. Industry partners in the program have continued and increased cost-sharing support. All major stack developers have met the initial goals of the program allowing continuance to more advanced stages of development. This technology is essential to meeting the efficiency and emissions goals of the President's FutureGen program and will also provide low-cost, low-emissions alternatives for distributed generation applications. Therefore, we urge you to support our request for \$80 million to execute the DOE Fossil Energy, Fuels and Power Systems, Fuel Cell Program in fiscal year 2008.

PREPARED STATEMENT OF THE GROUND WATER PROTECTION COUNCIL

The following request by the Ground Water Protection Council (GWPC) is to restore Congressional appropriations of \$64 million for the Department of Energy's (DOE) Office of Fossil Energy (FE) Research and Development (R&D) program. This appropriation will continue to fund the RBDMS system and electronic commerce applications at \$1,500,000. These programs developed by the Ground Water Protection Council (GWPC) streamline data management for oil and gas permitting, enhance oil and gas production, and protect the environment. Restoring the funding for these programs is an urgent priority for the continued development of domestic oil and gas and sustained environmental protection.

The GWPC is a respected national organization of state ground water, UIC, and oil and gas regulatory agencies with a successful track record of providing solutions to ground water protection related issues that are environmentally protective, scientifically based, cost effective and publicly accepted. Through the GWPC, states work together to strengthen their ability to protect ground water resources in more effective and cost efficient ways. We are the proud recipient of the Secretary of Energy's "Energy 100 Award"—given to the top 100 most successful and publicly beneficial projects (RBDMS) in the last 30 years of the USDOE.

RBDMS/CERA Accomplishments.—Data utilities from the Risk Based Data Management System are used in 25 states and one Indian Nation. RBDMS streamlines state oil and gas permit and response times, enhances ground water protection, and provides improved public and industry joint access to data, saving money for state and federal agencies, increasing production for small independent domestic opera-

tors, and creating real time efficiencies in state and federal domestic oil and gas programs. Over the life of these successful programs, the states have matched federal funding with their own funds at a 3:1 ratio. RBDMS/CERA projects have resulted in:

—*Improved Environmental Protection.*—State agencies have achieved higher levels of environmental protection through information management tools developed with DOE FE R&D funding. For example, current RBDMS application development efforts are making it possible to overlay oil and gas well and coal mining location information on source water protection area maps to assess areas of review and protect underground sources of drinking water. These same technologies are allowing regulatory agencies to track the quality and quantity of fresh and produced waters and to make important policy decisions about how these resources should be managed.

—*Increased Domestic Oil and Gas Production and Increased State Revenues.*—Regulatory agencies have documented that the information access and technology research afforded by the DOE FE R&D program has helped industry maximize the recovery of oil and gas from marginal wells. Nationwide, many marginal wells are being reworked and brought back online at a significant cost savings. For example, in North Dakota, more than 250 wells over the last 5 years have been re-entered and drilled horizontally at a cost savings of at least \$300,000. By keeping these wells available, industry has saved in excess of \$75,000,000 in North Dakota alone. If such technology was not made readily available through the DOE FE R&D program, many wells with recoverable product would have been plugged or shut in.

—*Increased Data Sharing.*—Improved access to oil and gas agency data gives exploration geologists the ability to develop prospects remotely and to drill and operate their leases more efficiently. The DOE FE R&D funding has given regulatory agencies the opportunity to share data with small, independent operators that would not otherwise have the ability to access such accurate information, thus aiding exploration and development efforts.

Fiscal Year 2008 Funding for RBDMS/CERA.—DOE Fossil Energy Research and Development program funding is a sound investment in domestic energy production and environmental protection. The DOE FE R&D program funds research projects that are encouraging small- and medium-sized industry operators to expand into previously cost-prohibitive areas increasing the industry's ability to make more knowledgeable decisions about resource deployment, exploration, and well management and is reducing overhead costs associated with regulatory compliance. Fiscal year 2008 funding would provide:

—*E-Commerce.*—The development of new RBDMS e-commerce applications in fiscal year 2008 will increase environmental monitoring and compliance and at the same time decrease both cost and time allocation for small oil and gas producers. The result is money saved by state governments and federal agencies and increased domestic oil and gas production.

—*Cost Effective Regulatory Approaches.*—Cost Effective Regulatory Approach (CERA) projects are designed to facilitate the development of petroleum resources in an efficient and environmentally friendly manner. For example, we are currently working on minimizing ground water impacts from oil shale production. Projects such as these are critical to the continued enhancement of oil shale production capacity in the United States.

—*Energy-Water Nexus.*—The USDOE has a goal of minimizing water consumption by energy-producing industries. The GWPC will develop software applications that will aid state agencies in tracking water quality and quantity data related to oil and gas production. Automated data will assist states in the analysis of related water consumption.

—*CO₂ Geosequestration.*—Capture and geologic storage (geosequestration) of CO₂ from power plants is one important tool for decreasing the release of this greenhouse gas to the atmosphere. However, geosequestration of CO₂ in underground formations presents a potential threat to underground sources of drinking water. The GWPC will facilitate the development of regulations to manage CO₂ geologic sequestration by:

—Creating a stakeholders workgroup made up of state agencies, environmental groups, energy resource companies and other affected parties focused on regulatory needs.

—Evaluating the legal basis for regulations development including federal and state authorities and rules.

—Working with the scientific and technical communities to incorporate the best available information to assure the process is environmentally sound.

—Expanding the successful RBDMS system to track and monitor CO₂ Geosequestration wells.

Many domestic oil and gas fields are no longer economical for the major oil and gas companies to operate but still hold vast resources. Without small independent operators, these resources would not be recoverable. By increasing its recoverable resources by only 5 percent, the United States would produce billions of barrels of additional domestic oil. Conversely, failure to use new technologies to fully recover these resources would result in the loss of billions of dollars of revenues that would instead be sent overseas for oil imports.

About 5,000 domestic independent companies drill 90 percent of the nation's wells and produce 68 percent of our domestic oil and 82 percent of the natural gas. While efficient in their operations, these companies lack the necessary research programs to fully develop our domestic resources. The partnerships created between these independent producers and universities through the DOE FE R&D program are the focus of 85 percent of the program's resources. The DOE FE R&D program increases environmental protection, access to adequate supplies of oil and gas, and tax revenues generated through oil and natural gas production. This funding allows states to help expand oil production while at the same time better protect the environment through increased data access and more efficient data sharing between state agencies and producers. RBDMS and CERA projects help further these benefits.

The Ground Water Protection Council requests continued funding in the amount of \$1,500,000 for RBDMS and CERA programs and encourages restoration of Congressional appropriations of \$65 million for the Department of Energy's (DOE) Office of Fossil Energy (FE) Research and Development (R&D) program.

PREPARED STATEMENT OF SOUTHERN COMPANY GENERATION

Mr. Chairman and Members of the Committee: Southern Company operates the Power Systems Development Facility (PSDF) (<http://psdf.southernco.com>) in Wilsonville, AL for the U.S. Department of Energy's (DOE's) National Energy Technology Laboratory (NETL) and several industrial participants.¹ The PSDF was conceived as the premier advanced coal power generation research and development (R&D) facility in the world. It has fulfilled this expectation. I would like to thank the Senate for its past support of the PSDF and request the committee's continued support. This statement supports the Administration's budget request for DOE coal R&D which includes \$25 million for work at the PSDF. These funds are necessary to conduct the future test program agreed to with DOE which includes wide-ranging support of the DOE Clean Coal Technology Roadmap. A major highlight of the PSDF test program is carbon capture technology development for coal-based power generation (see details below). Also included is support for FutureGen—the integrated hydrogen and electric power production and carbon sequestration research initiative proposed by President Bush. DOE has identified the PSDF as one of the primary test centers to support FutureGen through sub-scale component testing of technologies under consideration for inclusion in the FutureGen full-scale project.

A key feature of the PSDF is its ability to test new coal-based power generation systems at an integrated, semi-commercial scale. Integrated operation allows the effects of system interactions, typically missed in un-integrated pilot-scale testing, to be understood. The semi-commercial scale allows the maintenance, safety, and reliability issues of a technology to be investigated at a cost that is far lower than the cost of commercial-scale testing. Capable of operating at pilot to near-demonstration scales, the PSDF is large enough to produce industrial scale data, yet small enough to be cost-effective and adaptable to a variety of technology research needs.

In addition to semi-commercial scale testing, the PSDF has slip-stream testing capability for cost effective technology screening. Future test work at PSDF will include the scale-up and continued development of several CO₂ capture technologies

¹Current PSDF participants include Southern Company, the Electric Power Research Institute (EPRI), KBR, Siemens Power Generation, Inc. (Siemens), Peabody Energy, the Burlington Northern Santa Fe Railway Company, and the Lignite Energy Council. The Lignite Energy Council includes major producers of lignite (who together produce approximately 30 million tons of lignite annually); the nation's largest commercial coal gasification project; and investor-owned utilities and rural electric cooperatives from a multi-state area that generate electricity from lignite, serving two million people in the Upper Midwest region. The Council also has over 250 contractor/supplier members who provide products and services to the plants and mines. In addition to the Wilsonville plant site major work is planned for the PSDF, or components are being developed at the following locations: Grand Forks, ND (sub-scale gasifier testing), Houston, TX (gasifier development); Orlando, FL (gas turbine low-NO_x burner), Pittsburgh, PA (filter fabrication), Deland, FL (filter fabrication), and Holly Springs, MS (gasifier fabrication).

being developed either at DOE's NETL facility, at private R&D laboratories or at PSDF. These CO₂ capture technologies are envisioned for integration with existing or future Integrated Gasification Combined Cycle (IGCC) plants to reduce the cost penalties associated with the removal of CO₂ from syngas prior to combustion for power generation. As a part of the effort to capture CO₂, substantial new technologies, such as improved catalysts for water gas shift technology are needed and will be tested at PSDF. Also included in the PSDF research plans are efforts to enhance the coal feeding systems to enable wider ranges of coal as well as biomass to be economically and reliably introduced into many different versions of IGCC technology under consideration commercially today. PSDF has already demonstrated proof-of-concept of this new DOE-funded fuel feed system and will continue technology development to commercial ready scale.

A part of DOE's goals are to encourage the commercial deployment of technologies for which DOE has contributed R&D funding. Consistent with these goals, the PSDF will also provide process technology support to efforts to commercialize transport gasifier technology. DOE has partnered with Southern Company and the Orlando Utilities Commission (OUC) as part of a competitive solicitation under the Clean Coal Power Initiative (CCPI) to build an advanced 285-megawatt transport gasifier-based coal gasification facility at OUC's Stanton Energy Center in central Florida. The facility will use sub-bituminous coal and include state-of-the-art emission controls to demonstrate the cleanest, most efficient coal-fired power plant technology in the world. In addition, the PSDF will also provide process support to a recently announced commercial deployment of the transport gasifier to be constructed in Mississippi. This project will showcase the first ever application of modern IGCC technology on Gulf Coast lignites. The PSDF will also support the deployment of other emerging commercial technologies for use on other IGCC systems, including coal feed and particulate control technologies.

Southern Company also supports the goals of the Clean Coal Technology Roadmaps developed by DOE, EPRI, and the Coal Utilization Research Council (CURC). These Roadmaps identify the technical, economic, and environmental performance that advanced clean coal technologies can achieve over the next 20 years. Over this time period coal-fired power generation efficiency can be increased to over 50 percent (compared to the current fleet average of ~32 percent) while producing *de minimis* emissions and developing cost-effective technologies for carbon dioxide (CO₂) management. EPRI estimated the value of advanced coal R&D using the modern financial technique called "Real Options". The major conclusion of this study² is that the value to U.S. consumers of further coal R&D for the period 2007–2050 is at least \$360 billion and could reach \$1.38 trillion. But, for these benefits to be realized the critically important R&D program outlined in the Clean Coal Technology Roadmap must be conducted.

Summary

The United States has historically been a leader in energy research. Adequate funding for fossil energy research and development programs, including environmental and climate change technologies will provide our country with secure and reliable energy from domestic resources while protecting our environment. Current DOE fossil energy research and development programs for coal, if adequately funded, will assure that a wide range of electric generation and hydrogen production options are available for future needs. Congress faces difficult choices when examining near-term effects on the Federal budget of funding energy research. However, continued support for advanced coal-based energy research is essential to the long-term environmental and economic well being of the United States. Prior DOE clean coal technology research has already provided the basis for \$100 billion in consumer benefits at a cost of less than \$4 billion. Funding the Administration's budget request for DOE coal R&D and long-term support of the Clean Coal Technology Roadmap can lead to additional consumer benefits of between \$360 billion and \$1.38 trillion.

One of the key national assets for achieving these benefits is the PSDF. The fiscal year 2008 funding for the PSDF needs to be \$25 million to support construction of new technologies that are critical to the goals of the Clean Coal Technology Roadmap and to the success of the development of cost-effective climate change technologies, of the type that will be demonstrated in the FutureGen project. The major accomplishments at the PSDF to date and the future test program planned by DOE and the PSDF's industrial participants are summarized below.

² EPRI Report No. 1006954, "Market-Based Valuation of Coal Generation and Coal R&D in the U.S. Electric Sector", May 2002.

PSDF Accomplishments

The PSDF has developed testing and technology transfer relationships with over 50 vendors to ensure that test results and improvements developed at the PSDF are incorporated into future plants. Major subsystems tested and some highlights of the test program at the PSDF include:

Transport Reactor.—The transport reactor has been operated successfully on sub-bituminous, bituminous, and lignite coals as a pressurized combustor and as a gasifier in both oxygen- and air-blown modes and has exceeded its primary purpose of generating gases for downstream testing. It is projected to be the lowest capital cost coal-based power generation option, while providing the lowest cost of electricity and excellent environmental performance.

Advanced Particulate Control.—Two advanced particulate removal devices and 28 different filter elements types have been tested to clean the product gases, and material property testing is routinely conducted to assess their suitability under long-term operation. The material requirements have been shared with vendors to aid their filter development programs.

Filter Safe-Guard Device.—To enhance reliability and protect downstream components, “safe-guard” devices that reliably seal off failed filter elements have been successfully developed.

Coal Feed and Fine Ash Removal Subsystems.—The key to successful pressurized gasifier operation is reliable operation of the coal feed system and the filter vessel’s fine ash removal system. Modifications developed at the PSDF and shared with equipment suppliers allow current coal feed equipment to perform in a commercially acceptable manner. An innovative, continuous process has also been designed and successfully tested that reduces capital and maintenance costs and improves the reliability of fine ash removal.

Syngas Cooler.—Syngas cooling is of considerable importance to the gasification industry. Devices to inhibit erosion, made from several different materials, were tested at the inlet of the gas cooler and one ceramic material has been shown to perform well in this application.

Syngas Cleanup.—A syngas cleanup train was constructed and has proven capable of meeting stringent syngas decontamination requirements. This module that provides an ultra clean slip stream is now available for testing a wide variety of technologies.

Sensors and Automation.—More than 20 instrumentation vendors have worked with the PSDF to develop and test their instruments under realistic conditions. Automatic temperature control of the Transport Reactor has been successfully implemented.

Fuel Cell.—Two test campaigns were successfully completed on 0.5 kW solid oxide fuel cells manufactured by Delphi on syngas from the transport gasifier marking the first time that a solid oxide fuel cell has been operated on coal-derived syngas.

PSDF Future Test Program

Future testing at the PSDF is focused on supporting CO₂ capture technologies (of the type to be used by FutureGen) and the Technology Roadmaps. These programs aim to eliminate environmental issues that present barriers to the continued use of coal including major reductions in emissions of SO₂, CO₂, NO_x, particulates, and trace elements (including mercury), as well as reductions in solid waste and water consumption. Since FutureGen will require testing evaluations and scale-up of emerging technologies, DOE has identified the PSDF as a key location for support testing of the new technologies prior to consideration for inclusion in FutureGen.

With adequate funding, work at the PSDF will include:

H₂/CO₂ Separation Technologies.—Integrate and test advanced and potentially lower cost H₂/CO₂ separation technologies to assess their performance on coal-derived syngas.

Water Gas Shift Enhancements.—A variety of water gas shift reactor configurations and sizes can be tested at the PSDF. Optimizing the operation of shift catalysts when exposed to syngas at the PSDF and evaluating their economics will provide valuable input for the FutureGen project.

Advanced Syngas Cleanup.—Test new advanced syngas cleanup systems for reducing hydrogen sulfide, hydrochloric acid, ammonia, and mercury to near-zero levels.

New Particulate Control Device Programs.—Evaluate alternative filter system internal designs, on-line detector of particle breakthrough, and improved resistance probes.

Improved Fuel Feed Systems.—Evaluate alternatives that have been identified to conventional lock hopper feed systems and coal preparation methods.

Biomass Co-Feed.—Evaluate co-feed options with biomass and coal. Design and run a test to gasify up to a 20 percent mixture of biomass with coal in the Transport Gasifier.

Transport Gasifier.—Continue transport gasifier testing to expand useable feedstocks, including low- and high-sodium lignites and bituminous coals as well as biomass mixtures with these coals and provide syngas for testing of syngas clean-up and downstream systems.

Syngas Cooler.—Test alternative designs that are less complex, have lower capital cost, and offer better control of the syngas exit temperature.

High-Temperature Heat Exchangers.—Test high-temperature heat exchangers as they become available for use in both advanced combustion and gasification technologies.

Fuel Cell.—Support NETL fuel cell development with slip-stream testing. Install and test a 5 to 10 MW hybrid fuel cell/gas turbine module.

Sensors and Automation.—Evaluate automation enhancements that simulate commercial control strategies. Further development at gasification operating conditions is planned for measuring coal feed rate, temperature, gas analysis, dust at low levels, and hazardous air pollutants.

PREPARED STATEMENT OF THE AMERICAN PUBLIC POWER ASSOCIATION

The American Public Power Association (APPA) is the national service organization representing the interests of over 2,000 municipal and other state and locally owned utilities throughout the United States (all but Hawaii). Collectively, public power utilities deliver electricity to one of every seven electric consumers (approximately 44 million people). We appreciate the opportunity to submit this statement outlining our fiscal year 2008 funding priorities within the Energy and Water Development Subcommittee's jurisdiction.

Federal Power Marketing Administrations (PMAs)

Power Marketing Administration Interest Rate Proposal.—The Administration's fiscal year 2008 budget includes a recommendation that would raise electricity rates by changing the interest rate charged by the Southeastern Power Administration (SEPA), the Southwestern Power Administration (SWPA), and the Western Area Power Administration (WAPA) on all new investments in projects whose interest rates are not set by law. Specifically, the Department of Energy's (DOE) budget calls for the these three Power Marketing Administrations (PMAs) to set their interest rates at the level that government corporations pay to borrow funds from the federal government. To implement this proposal, DOE will amend the regulation that governs how the PMAs establish their rates and will do so administratively, without any consultation with or action from Congress.

The Administration's budget proposes to increase the interest rate charged on all new investments in these hydroelectric facilities to a level that is charged to government corporations—the rate that reflects the interest cost for the federal government to provide loans to government corporations. SEPA, SWPA and WAPA are neither government corporations nor do they borrow funds from the U.S. Treasury. All rates are set to recover the dollars appropriated by Congress for the investment in the hydroelectric facilities and to cover the cost to operate these projects. If implemented, this proposal could increase rates considerably for customers served by most of the Power Marketing Administrations.

This proposal creates a serious precedent and should be rejected, because: (1) the process for implementing the proposal can be done without congressional involvement or approval; (2) the proposal would arbitrarily raise revenue from electric customers for deficit reduction; and (3) the proposal reverses decades of rate making precedent and accepted cost recovery practices by administrative fiat. We urge the Subcommittee to block the implementation of this proposal.

Bonneville Power Administration "Net Secondary Revenue" Proposal.—Also included in DOE's fiscal year 2008 budget is a proposed administrative action that would direct the Bonneville Power Administration (BPA) to use any net "secondary market revenues" in excess of \$500 million per year towards accelerated federal debt repayment. Because the change would be made through the rulemaking process, congressional approval is not needed for the policy to go into effect. This proposal was strongly opposed by Congress in fiscal year 2007, and was ultimately blocked by Congress for that year. The Office of Management and Budget (OMB) calculates that this plan would provide a total of \$924 million from fiscal year 2007–2016 from these "higher-than-historical net secondary revenues." OMB believes that this measure is needed to free up BPA borrowing authority. However, experts in the

Northwest have calculated that the proposal would result in a 10 percent wholesale rate increase that BPA would be forced to pass on to ratepayers. The Congressional Budget Office has calculated that the effect of the Administration's proposal on the U.S. Treasury would be \$300 million over 10 years beginning in 2008. We urge the Subcommittee to block the implementation of this proposal.

“Emergency” Purchase Power and Wheeling.—This new Administration proposal for fiscal year 2008 would require that any funds used from the “Continuing or Emergency Funds” be paid back within a year of being used. Like the Agency rate and net secondary revenue proposals, this one can be implemented administratively. Currently, in most cases, the PMAs have 3–5 years to recoup those funds from the customers—paid back with interest. Emergency funds are available to the PMAs when an unforeseen emergency situation (such as a drought) causes them to go beyond their allotted ceiling for purchase power and wheeling expenditures in a given fiscal year. Similar to the Agency rate proposal, this change is unjustified from a practical standpoint and is also problematic from a precedent-setting perspective. We urge the Subcommittee to block implementation of this proposal.

Purchase Power and Wheeling.—We urge the Subcommittee to authorize appropriate levels for use of receipts so that the Western Area Power Administration (WAPA), the Southeastern Power Administration (SEPA) and the Southwestern Power Administration (SWPA) can continue to purchase and wheel electric power to their municipal and rural electric cooperative customers. Although appropriations are no longer needed to initiate the purchase power and wheeling (PP&W) process, the Subcommittee continues to establish ceilings on the use of receipts for this important function. The PP&W arrangement is effective, has no impact on the federal budget, and is supported by the PMA customers who pay the costs. We agree with the Administration's budget requests for PP&W for fiscal year 2008, which are as follows: \$425.2 million for Western Area Power Administration (WAPA); \$62.2 million for Southeastern Power Administration (SEPA); and \$45 million for Southwestern Power Administration (SWPA).

Costs of Increased Security at Federal Multi-Purpose Projects.—Following the attacks of September 11, 2001, the Bureau of Reclamation (Bureau) embarked upon an aggressive program to enhance the security of federal dams to protect the facilities against terrorist attacks. Based on historical precedent, the Bureau initially determined that the costs of increased security measures should remain a non-reimbursable obligation of the federal government. In fiscal year 2005, however, the Bureau reversed its position and asked for some of these costs to be reimbursed from power customers. That year, Congress disagreed with the Bureau's request that these expenses be reimbursable, but the following year, Congress directed that \$10 million of the estimated \$18 million for guards and patrols be provided by reimbursable funding. The bill also directed the Bureau to provide a report to Congress within 60 days that would delineate the planned reimbursable security costs by project. The report (issued in March 2006) was similar to the previous (May 2005) report, except that it also included “facility fortification upgrades” as a reimbursable cost. Previously, the Bureau had assured its stakeholders that only the costs of guards and patrols would be reimbursable. There has been some clarification on that position, but it is not entirely clear how replacement/upgrades would be treated. The Administration's fiscal year 2008 request for the Bureau's site security is \$35.5 million, of which \$18.9 million (for guards and patrols) would be designated reimbursable from water and power customers. This additional obligation in essence makes everything reimbursable at some point. Regardless of the details of the Bureau's report, APPA continues to believe in the validity of the historic rationale established in the 1942 and 1943 Interior Department Appropriation Acts for treating costs of increased security at multi-purpose federal projects as non-reimbursable obligations of the federal government. We therefore urge Congress to add language to the Energy and Water Development Appropriations Act of 2008 to clarify that all costs of increased security at dams owned and operated by the Bureau be non-reimbursable.

Renewable Energy Production Incentive (REPI) and Renewable Energy Programs.—The Department of Energy's REPI program was created in 1992's Energy Policy Act (EPAAct) as a counterpart to the renewable energy production tax credits made available to for-profit utilities, and was recently reauthorized through 2016 in the Energy Policy Act of 2005 (EPAAct05). EPAAct05 authorizes DOE to make direct payments to not-for-profit public power systems and rural electric cooperatives at the rate of 1.5 cents per kWh (1.9 cents when adjusted for inflation) from electricity generated from a variety of renewable projects. According to DOE sources, in order to fully fund all past and current REPI applicants, over \$80 million would be needed for fiscal year 2008. Despite the demonstrated need, however, DOE has asked for only \$4.96 million for fiscal year 2008, citing budgetary constraints. We greatly appreciate the Subcommittee's interest in this small but important program as evi-

denced by its support of funding for the program either at or above the Administration's budget requests in the last few years despite the tight budgetary environment. We urge the Subcommittee to continue its support with an even greater increase.

Storage for High-level Nuclear Waste.—We support the Administration's efforts to finalize the location of a permanent storage site at Yucca Mountain, Nevada. The Administration requested \$494.5 million for fiscal year 2008, a decrease of \$50 million from its fiscal year 2007 request, for the nuclear waste repository at Yucca Mountain. We encourage the Subcommittee to provide funding for the project at or above the Administration's request.

Advanced Hydropower Turbine Program.—APPA is disappointed with the Administration's decision to phase out this important program to develop a hydroelectric turbine that will protect fish and other aquatic habitats while continuing to allow for the production of emissions-free hydroelectric power. We urge the Subcommittee to consider providing funding for this important initiative.

Energy Conservation.—APPA appreciates the Subcommittee's interest in energy conservation and efficiency programs at DOE and we hope that the Subcommittee will once again allocate a funding level over and above the Administration's request for fiscal year 2008.

Weatherization and Intergovernmental Activities.—APPA is disappointed with the Administration's request of \$204.9 million for fiscal year 2008, a decrease of \$20.1 million from its fiscal year 2007 request, for helping to increase the efficiency of commercial and residential buildings, including weatherization assistance, and to support the state and community energy conservation programs.

Clean Coal Power Initiative and FutureGen.—APPA supports the Administration's request of \$73 million for fiscal year 2008 for the Clean Coal Power Initiative. This is consistent with the President's commitment to fund this program at \$2 billion over 10 years. We also urge the Subcommittee to provide the \$108 million in newly requested funding for fiscal year 2008 for the FutureGen program.

Distributed Generation Fuel Cells.—APPA is disappointed with the Administration's request of \$62.03 million for fiscal year 2007 for distributed generation fuel cell research and development, and urges the Subcommittee to allocate additional funding for this program.

Hydrogen Fuel Initiative and Vehicle Technologies.—APPA supports the Administration's efforts to improve the feasibility of making available low-cost hydrogen fuel cells, and supports its request of \$309 million for hydrogen research and development in fiscal year 2008. APPA also supports the Administration's fiscal year 2008 request for \$176 million for vehicle technologies that would apply hydrogen fuel cell technology to vehicles as well as provide for research for hybrid and electric vehicle technologies to facilitate widespread deployment of these technologies.

Navajo Electrification Demonstration Program.—APPA supports full funding for the Navajo Electrification Demonstration Program at its full authorized funding level. The purpose of the program is to provide electric power to the estimated 18,000 occupied structures in the Navajo Nation that lack electric power.

National Climate Change Technology Initiative (NCCTI).—APPA supports the Administration's efforts to promote greenhouse gas reductions through voluntary programs and investments in new technologies. We encourage the Subcommittee to consider allocating additional funds for the policy office of the NCCTI.

Federal Energy Regulatory Commission (FERC).—DOE has requested \$255.4 million for the overall operations of the Federal Energy Regulatory Commission (FERC) for fiscal year 2008. APPA supports this request, which is an appropriate increase of \$24.6 million over the fiscal year 2007 request given FERC's additional responsibilities under EPAAct05.

PREPARED STATEMENT OF THE UNIVERSITY OF TULSA

Background and Issues

September 11, 2001, confirmed that both Middle East oil dependence and fragile infrastructure threaten national security. Domestic energy systems aren't secure unless they're designed to make large-scale failures impossible and local failures benign. Today the opposite is true in the oil and gas sector: The United States' extraordinarily concentrated energy flows could allow a devastating attack. Production of oil and gas, especially in the United States are also dwindling with each passing year. So has the ability to process the oil into valuable products such as gasoline to drive our vehicles. The United States depends on oil to move people and goods. Ninety five percent of the energy for transportation in the United States comes from oil. Transportation's demand for oil drives the market. Transportation accounts for

two-thirds of total U.S. petroleum use, and nearly all of the high value petroleum products, like gasoline and distillate fuel.

In the past, dependence on oil has cost our economy dearly. Oil price shocks and price manipulation by the OPEC cartel from 1979 to 2000 cost the U.S. economy about \$7 trillion, almost as much as we spent on national defense over the same time period and more than the interest payments on the national debt. Each major price shock of the past three decades was followed by an economic recession in the United States. With growing U.S. imports and increasing world dependence on foreign oil, future price shocks are possible and would be costly to the U.S. economy.

On the government side, money has dried up, or is drying up, for oil and gas research as well. The Gas Research Institute (GRI) at one time funded close to \$200 million per year in gas-related research. GRI's support came from a Federal Energy Regulatory Commission-mandated surcharge on interstate gas sales. The surcharge was phased out; however, producing an estimated \$70 million in 2001, \$60 million in 2002–2004. In July 2005, Subtitle J Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Resources were passed into law. The program under this subtitle addresses three areas: (1) Ultra-deepwater architecture and technology in the Outer Continental Shelf to depths greater than 15,000 feet, (2) unconventional natural gas and other petroleum resources, and (3) the technology challenges of small producers. The program guarantees to provide \$50,000,000 per year with the potential of an additional \$100,000,000 per year over the next 10 years. These funds should provide some long term solutions, but it should be noted that only a small portion of these funds (7.5 percent) will be used on conventional oil and gas studies that benefit the small producers. Furthermore, with this passage, additional pressure will be applied to close the National Energy Technology Office in Tulsa (formerly the National Petroleum Technology Office which was consolidated into the NETL in December 2000). Ironically, the Energy Bill provides almost no support for domestic oil production which desperately needs new technologies for mature fields to continue to support the Nation's energy future.

Research and Development (R&D) funding for major oil companies and service companies hit bottom around 2003 and increased significantly each year until at least 2005. The major oil companies during this period were increasing funding at around 20 percent year-over-year and the service companies were increasing funding at 10–15 percent. The real issue is what are the major companies researching. In general it is not things that benefit independent operations in the United States. Major integrated oil and gas producers have largely moved offshore or overseas. This has left onshore production increasingly in the hands of small independent producers who lack the resources to conduct R&D.

TU has been one of the leaders in providing new technologies for the oil and gas industry for almost a half century. DOE funding of our programs over the past 10 years has been integral to our growth. This growth is now being threatened. So, where will the funds come from to support conventional oil and gas research?

SOLUTION

Ultimately, the solution to the oil dependence problem lies in technological progress: developing technologies to find, process, and use energy more efficiently, and by creating new energy sources that can replace petroleum cleanly and inexpensively. However, if the science is not done now, the technology will not be available in the future when it is critically needed.

Energy security requires a program that focuses on infrastructure security, energy diversification and energy efficiency while facing energies challenges. This must be accomplished with environmentally friendly technologies using global partnerships and collaboration efforts. The University of Tulsa has many components of such a system in place and is now working on a plan to include others. In the meantime, our federal government must focus more of its funds on conventional oil and gas upstream and downstream research while other alternatives are developed, such as those through Subtitle J. These technologies can't be abandoned because potential replacement technologies are years away. It is critical that congress increase its commitment to oil and gas research. According to House Rpt. 108–542 Department of Interior and Related Agencies Appropriation Bill, 2005: "Oil and natural gas research is critical to improving current technology and ensuring the best use of our domestic oil and gas reserves. Despite the Committee's urging to the contrary, these research areas continue to be seriously under funded in annual budget requests." Unfortunately, trends in industry are working against this need of additional funds as well.

The DOE allocates less than 0.3 percent of its budget to actual oil and gas research yet ninety five percent of the energy for transportation in the United States

comes from oil. We urge you to reverse the trend and insure that funding is in proportion to the problems faced for the sake of our national security.

Complicating this year's funding issues is the Administration's support for major hydrogen energy research at the expense of a 20 percent reduction in energy efficiency and renewable energy efforts at DOE. The hydrogen fuel concept is not generating new energy, but merely using hydrogen as a carrier for natural gas or other energy sources without any infrastructure to support its wide deployment, whereas energy efficiency is the cheapest and quickest way to create more available energy for the Nation's future growth. Renewable energy is critically important for Oklahoma which possesses abundant wind and solar energy potential as well as a fledgling, but rapidly growing, biofuel industry. Biodiesel and cellulosic ethanol R&D are very important for the Nation while the corn ethanol boom actually diverts much needed fossil fuels to its production at very little gain in overall energy. Corn ethanol competes directly with beef and other livestock production which will adversely impact Oklahoma and other states. Further expanding its use at taxpayers' expense will not achieve desired energy goals and will create problems in other commodities.

We urge you to reduce hydrogen fuel research and continue robust energy efficiency and renewable energy R&D at DOE as well as to reinstate a federally managed oil and gas program which complements the Energy Policy Act of 2005's consortium approach to natural gas R&D. This will have the additional benefit of supporting academic programs in petroleum, geosciences, and engineering which are shortchanged in the Administration's new approach.

We thank you for the opportunity to submit this testimony and look forward to working with you to ensure that funding for conventional oil and gas research continues.

PREPARED STATEMENT OF THE AMERICAN MUSEUM OF NATURAL HISTORY

About the American Museum of Natural History

The American Museum of Natural History [AMNH] is one of the nation's preeminent institutions for scientific research and public education. Since its founding in 1869, the Museum has pursued its mission to "discover, interpret, and disseminate—through scientific research and education—knowledge about human cultures, the natural world, and the universe." It is renowned for its exhibitions and collections of more than 32 million specimens and cultural artifacts. With nearly four million annual visitors, its audience is one of the largest and most diverse of any museum in the country. Museum scientists conduct groundbreaking research in fields ranging from all branches of zoology, comparative genomics, and bioinformatics to earth, space, and environmental sciences and biodiversity conservation. Their work forms the basis for all the Museum's activities that seek to explain complex issues and help people to understand the events and processes that created and continue to shape the Earth, life and civilization on this planet, and the universe beyond.

Support for Department of Energy Science Mission and Goals

The Department of Energy (DOE) is a leading science agency, committed to enhancing U.S. competitiveness by providing world-class scientific research capacity and by advancing scientific knowledge in physical sciences and areas of biological, medical, environmental, and computational sciences—including genomic science. The American Museum of Natural History, in turn, is home to one of the world's largest natural history collections and to a preeminent molecular research program, which aligns with key areas of DOE's mission areas and research priorities.

Building on its strengths in genomic science, in 2001 the Museum launched the Institute for Comparative Genomics. The importance of comparative genomics cannot be overstated, as investigating genomics with a natural history perspective enlarges our understanding of the evolutionary relationships among organisms, including threat agents, and offers important applications for human health. The Institute's research programs leverage the Museum's unique expertise in evolutionary biology and draw on its unparalleled facilities, including a 700 CPU parallel computing cluster (the fastest, we believe, installed in an evolutionary biology laboratory and one of the fastest in a non-defense environment), high throughput sequencing capacity, and an ultra-cold tissue collection that stores specimens with preserved DNA, as well as expertise in using remote sensing and Geographical Information System (GIS) technologies to applied research questions.

The Institute has already enjoyed significant research achievements, which include advancing understanding of bacterial genomics and the evolution of pathogenicity, developing computational techniques to analyze chromosomal sequence data, and winning grants to lead international teams in assembling the "Tree of Life" and

for large-scale collaborative projects in the frontiers of integrative biology and in plant genomics. Other current projects include sequencing pathogens and, with NIH support, tracing the evolution of pathogenicity and transfer of disease-causing genes over time and between species-contributing to the advancement of national security research by increasing the knowledge base of current pathogen distribution and motility in the landscape. With this distinguished record, the Institute now seeks to advance its microbial genomics and computation research and training programs, including upgrading high throughput instrumentation, expanding the supercomputing cluster for biocomputation, supporting postdoctoral trainees to build the scientific workforce to sustain America's competitiveness, and expanding related public education and outreach in a teaching laboratory located in the new Hall of Human Origins.

Recognizing its potential to support the Department of Energy in its goals to strengthen U.S. scientific discovery and economic competitiveness, advance the frontiers of knowledge in areas of biological and computational sciences, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy, the Museum seeks in fiscal year 2008 to draw on the unparalleled resources of its Institute of Comparative Genomics in a partnership with DOE to advance these shared goals.

PREPARED STATEMENT OF THE AMERICAN WIND ENERGY ASSOCIATION

INCREASED R&D INVESTMENTS ARE CRUCIAL FOR WIND ENERGY TO BECOME A MAIN-STREAM POWER SOURCE AND HELP SIGNIFICANTLY REDUCE GLOBAL WARMING POLLUTION

The American Wind Energy Association¹ (AWEA) appreciates this opportunity to provide testimony for the record on the Department of Energy's fiscal year 2008 wind energy program budget before the Senate Appropriations Subcommittee on Energy and Water Development.

For fiscal year 2008, the Bush Administration requested wind energy research and development (R&D) investments of only \$40.1 million—a \$4 million cut below current spending. This funding request does not recognize the strong contribution that wind energy is making—and can make—to produce clean energy, new jobs, and significant reductions in global warming pollution.

Request for the Department of Energy Wind Program: \$110 million

AWEA requests a funding level of at least \$110 million for the wind energy program at the Department of Energy (DOE) to support wind energy development at the national, state, and local levels. Working in conjunction with the U.S. wind industry, power producers, suppliers, industrial consumers and residential users, DOE provides important technical support, guidance, information, and limited cost-shared funding for efforts to explore and develop wind energy resources.

AWEA would like to commend the DOE wind program for its efforts to involve the industry in its program planning process. As a whole, the department has solicited input from AWEA on the direction of its program and has been responsive to comments received from the industry.

Overview

Wind energy could "supply up to 20 percent of our nation's electricity."—President George W. Bush, February 20, 2006.

Wind energy development in the United States is coming off a record year, with nearly 2,500 megawatts (MW) of new wind energy installed across 22 states. The industry expects to break that record in 2007. At the beginning of 2007, over 11,000 MW of wind energy facilities are operating in the United States, producing the equivalent amount of electricity needed to power about 3 million average American households.

Wind energy works for the environment and the economy because it generates energy without fuel, while providing a reliable hedge against rising energy costs. In addition, wind lowers consumer energy prices by offsetting increased costs in fossil fuels, offers significant rural economic development opportunities for communities, strengthens the nation's security by lessening our reliance on foreign sources of energy, and provides clean, emission-free electricity.

¹The American Wind Energy Association or AWEA, was formed in 1974. The organization represents virtually every facet of the wind industry, including turbine and component manufacturers, project developers, utilities, academicians, and interested individuals.

The industry believes that with smart investments today, wind can grow to supply fully 20 percent of America's electric power. During his 2006 State of the Union speech, President Bush stated that wind could eventually supply 20 percent of our electric supply and proposed spending more on R&D. With these factors in mind, wind energy is on the verge of becoming a major player in energy supply for the nation. However, a number of obstacles must be eliminated in order for wind to reach its full potential and become fully cost competitive with traditional energy technologies.

The work that takes place at DOE's wind program is a vital component in helping to eliminate those obstacles. AWEA appreciates the support the subcommittee has provided to the DOE wind program in recent years.

For fiscal year 2008, the Administration requested only \$40.1 million, which is a \$4 million cut below current spending of \$44 million. This funding request is not consistent with the President's call for more R&D in this area and does not recognize the strong contribution that wind energy is making—and can make—to produce clean energy, new jobs, and significant reductions in global warming pollution.

We strongly believe that the funding provided by the subcommittee should reflect the important work conducted by the wind program and respectfully request that funding be significantly increased above the request level.

The wind energy program at the Department of Energy has a strong history of success. Over the last twenty years, the cost of wind energy has dropped by more than 80 percent, to a level that is close to competitive with traditional energy technologies. The cost of wind energy is currently between 5.5 to 9.5 cents per kilowatt hour (kWh), not including the Production Tax Credit (PTC). Over the last 2 years, however, the cost of wind energy—and all other sources of producing electric power—has actually been going up due to increases in commodity prices and short-term extensions of the renewable energy PTC.

Cost shared industry/government research and development activities at DOE and the National Renewable Energy Laboratory (NREL) have played an important role in this achievement. Programs such as Wind Powering America have been extremely effective in educating interested parties across the country on the benefits of wind power. We strongly support the continuation of the project.

Utility-Scale, Land-Based Turbine Technology: \$50 million

The requested funding for further development of utility-scale, land-based turbine technology is very important to the wind industry. The wind industry requests \$50 million for this program in order to reduce capital cost, improve capacity, and provide a foundation for wind energy technologies.

The primary focus of this program is to reduce costs and increase reliability of the technology. Federal investments are needed because there are fundamental technical issues that are not yet understood that are decreasing reliability and increasing costs. In addition, dramatic cost reductions will almost certainly require application of unproven, high risk concepts, such as those below:

Component Development

Rotor blades.—There are multiple opportunities for advanced materials and blade configurations to reduce the cost of energy from wind turbines. Promising areas for additional support are in developing turbine blades that can be easily assembled on-site and developing aeroelastically tailored blades, or blades that are able to change shape in response to the wind as a means of limiting stress.

Controls Sensors.—Advanced sensors to monitor the loading and position of wind turbine blades and other components that can be cost-effectively combined with modern control theories.

Other Components.—Towers and drive train systems are other major components where innovation is needed to reduce the cost of energy. In particular, developing a tower system that addresses transportation and installation constraints currently preventing further cost savings in these areas is of crucial importance.

Advanced Controls and Models Research

The application of innovative turbine control strategies shows considerable promise in helping to reduce loads and thus reduce the cost of energy. Substantial work is needed to fully understand the complex relationship between atmospheric conditions and wind turbine dynamics and how to utilize controls to optimize performance and minimize costs.

Resource Characterization

For advanced control theory to optimally reduce loads, the characteristics of the atmosphere within which the turbines are operating must be better understood. Research dollars focused on achieving the best means of characterizing the variations

in wind across the rotors depending on wind speeds and height of the turbines, tools to measure these characteristics, and models to represent the inflow for analytical purposes are all important efforts.

Market Acceptance/Transformation: \$34 million

We request \$34 million for market acceptance/transformation activities at DOE. Increased funding in this area would be targeted toward better understanding the impact of wind turbines on wildlife as well as developing tools and educational materials for policy makers and regulators to assist them in better understanding the environmental impact of wind energy projects. Funds are used for cost-shared research programs with industry and wildlife organizations to address targeted issues with avian and bat species.

States and permitting officials also seek technical assistance on project siting issues. DOE could serve as a clearinghouse for information and resources in these areas. Outreach to these audiences is also required so permitting authorities feel they are making informed choices. In addition, resources in this area would also be used to develop updated resource maps at an elevation of 100 meters above ground level. These maps have identified previously unknown wind resources in several states, spurring interest in the resource from state policy makers and regulators.

Reliability and Testing: \$10 million

We would like to see \$10 million provided for reliability and testing. Increased funding in this area would be used for three primary purposes:

- Support for a public/private partnership to build blade and dynamometer test facilities;
- Initiation of research that will increase the reliability of wind project energy projections, and;
- Expansion of research into the causes of premature failure of major wind turbine components such as gearboxes and generators.

Advanced Applications: \$10 million

The Advanced Applications research will be targeted toward the integration of wind energy into generation of hydrogen, deep-water offshore technology research, resource characterization, loads and environment characterization and the environmental impacts of offshore applications. The wind industry requests \$10 million to fund research in these areas. Such research is needed to identify the potential for wind energy in these areas as well as position the United States to play a leading role in the development of environmentally compatible wind energy applications.

AWEA believes that offshore wind energy facilities can play an important role in meeting the long-term energy needs of the country. However, we also believe that the focus of the DOE program in the near future should be placed on R&D efforts for land-based turbines.

Distributed Wind Systems (100 kW and below): \$6 million

AWEA is encouraged by DOE's proposed increase for small wind R&D, but believes an even greater emphasis is needed for this technology (used to power an individual home, farm or small business). Distributed generation with small customer-sited power plants has great potential for reducing energy costs, promoting competition in the marketplace, and strengthening the nation's electrical supply network.

This program has provided invaluable support for the development and testing of more reliable small turbines for homes and businesses. The development of computer simulation tools allows designers to understand the furling behavior (when a turbine turns itself out of the wind during periods of very high wind speeds) of the turbines. AWEA believes that a \$6 million DOE small wind budget would ensure that additional support is provided for certification testing of small wind generators. \$6 million would also adequately fund research into manufacturing techniques to produce high-volume, low-cost components, with aerospace material properties and performance. These are all areas where support is needed to reduce the cost of energy and increase the reliability of small turbines.

The high up-front costs of small wind systems make it very difficult for this technology to gain wide acceptance in the domestic market. This would change if DOE had the resources to work with America's small wind manufacturers to achieve cost reductions similar to those achieved by the large, utility-scale wind industry. In some states that provide a rebate for purchasers, small wind turbine manufacturers have experienced a surge in sales, demonstrating the public support for cost-effective small wind turbines.

ADDITIONAL WIND INDUSTRY PRIORITY

Wind Energy Integration Efforts within DOE's Electricity Delivery and Energy Reliability Office (This funding is not located in the DOE Wind Account.)

DOE has requested only \$115 million—an 8 percent cut—for its Electric Delivery and Energy Reliability Office responsible for assisting in modernization of the electric grid, including transmission corridor designation and federal line permitting under the Energy Policy Act of 2005. This work is crucial to growing the wind industry because it holds the key to moving wind energy from generally rural areas where it is produced to population centers where it is needed.

Resources would be focused on continuing the educational activities that allow utilities and policy makers to make informed decisions regarding the impact of wind on the electric transmission system. As the industry grows and the size of wind projects increases, additional case studies showing the impact of these large projects on the grid are needed. The industry has experienced considerable success in completing integration studies of major portions of the Midwestern grid. These studies have been well received by regulators and transmission providers and have helped to quantify the impact of wind on the transmission system. Similar studies of the western portion of the country and studies of higher wind penetration levels are needed. Additionally, educational materials for utility control room operators to help them understand the impact of wind power plants and how they can manage operational impacts with new forecasting tools would be helpful.

CONCLUSION

The President and the Congress have called for an increased commitment to the development of domestic renewable energy resources, particularly wind energy, to meet our nation's growing demand for electricity. Continued investments in wind energy R&D are delivering value for taxpayers by developing a domestic energy source that strengthens our national security, fosters rural economic development, creates new high-tech jobs, and helps protect the environment.

While the wind industry continues adding new generation capacity, a number of challenges still exist. Continued support for the Department of Energy's wind program is vital to helping wind become a mainstream energy source that helps significantly reduce global warming pollution. We believe that the funds appropriated to the wind program need to be commensurate with the President's call for more renewable energy, and urge the subcommittee to approve a significant increase in funding for the wind program.

AWEA appreciates the opportunity to provide this testimony to the Subcommittee. Thank you.

PREPARED STATEMENT OF THE NATIONAL RESEARCH CENTER FOR COAL AND ENERGY
PROGRAMS IN FOSSIL ENERGY, ENERGY EFFICIENCY, AND ENERGY RELIABILITY

Thank you for considering testimony from the National Research Center for Coal and Energy (NRCCE) on programs in Fossil Energy, Energy Efficiency, and Electricity Delivery. Comments and recommendations are provided in the following sections of our testimony.

Office of Fossil Energy

Our focus is on the core Fossil Energy R&D program, for which the Administration has recommended insufficient funding for fiscal year 2008.

Innovations for Existing Plants Program

The United States currently has more than 300 GW of coal-fired capacity that supplies over 50 percent of the Nation's electricity. Twenty years from now, most of these plants will still be providing base-load power. The Innovations for Existing Plants Program addresses the continuing critical role these plants will play in the future. However, the Administration has chosen not to fund this program in fiscal year 2008. It is prudent to invest in improving the operation of our existing work-horse power generation fleet. Our nation will benefit from advanced technology's ability to reduce the environmental impact of energy generation. This program should be restored to its previous level of \$25 million for fiscal year 2008.

—*Mercury Research.*—Recent field tests on mercury control technology have shown that more research is required to obtain sufficient understanding of the chemistry of mercury for different coal types and the effectiveness of capture processes. Of the funding recommended, \$10 million should be directed to the control of mercury emissions.

—*Optimal Water use in Power Generation.*—Power generation accounts for 40 percent of all water withdrawals in the United States, second only to agriculture, and competes with other industrial, agricultural, and consumer needs. Water scarcity exists not only in the arid Western States but also in the East where even large rivers like the Potomac and Susquehanna are unable to support additional power plants. Of the funding recommended, \$10 million should be directed toward optimizing the use of water in power generation.

—*Use of Combustion By-Products.*—The By-Products sub-element of the Existing Plants Program keeps combustion by-products such as coal ash and scrubber sludge out of waste streams from power plants by developing environmentally friendly and economically attractive alternative uses. Before this sub-program was implemented, only 25 percent of combustion byproducts were beneficially used. That number is now over 40 percent. Without continued support, we expect increasing amounts of byproduct to enter the Nation's landfills. Of the funding recommended, \$3 million should be directed toward the combustion by-products program.

Fuels Program

NRCCE recommends adding \$9 million to the Fuels Program to reinstate a national liquid fuels program as a major thrust area and \$3 million for the advanced separations research program.

—*Coal-to-Liquids.*—The promise of coal-to-liquids (CTL) technology for producing transportation fuels and chemicals has stimulated expressions of interest from at least 10 governors, the U.S. Department of Defense, and over 15 companies for constructing plants to promote energy independence. Developers cite the need for R&D to reduce plant costs, to improve conversion efficiency, to reduce the environmental footprint of CTL technologies, and to qualify CTL fuels for use in legacy and future transportation vehicles.

We need a national advanced core research program to ensure success of these new CTL plants, which in most cases will be first-of-a-kind commercial deployments in the United States. Funds should be directed toward computational research on process development and economic modeling, co-production with biomass and other technology advances to minimize CO₂ emissions, and advanced research in catalysis, wax separation, and reactor design engineering. Ancillary benefits include educating the U.S.-based human resource pool needed to meet personnel demands created by deployment of CTL industries on a large scale. Of the amount recommended, \$1 million should be directed to continue the work initiated under Annex II of the U.S.-China Protocol for Energy Research to obtain information about China's CTL technology and the environmental /economic impacts of CTL plants in Shanxi Province. This valuable information will be obtained at a small fraction of the cost of financing a similar program in the United States.

—*Advanced Separations Research.*—The current emphasis on obtaining clean gas streams in gasification plants and on reducing mercury and other pollutant emissions from pulverized coal plants warrants continued research in advanced separations. This research will yield cleaner coals that combust more efficiently, thereby reducing carbon emissions as well.

Carbon Sequestration

The Zero Emissions Research and Technology (ZERT) Center is a consortium of five national labs and two universities that conducts coordinated research on geologic sequestration of carbon dioxide. The Center's fundamental research complements the Regional Carbon Sequestration Partnership and FutureGen programs and should be continued at \$8 million in fiscal year 2008.

Oil and Natural Gas Programs

The Fossil Energy program in oil and natural gas supports small and independent producers—companies which do not have the money and may not have the expertise to undertake advanced research to extract the harder-to-get resources from mature fields. The oil and natural gas programs are largely responsible for training our next generation of petroleum engineers and geologists. Projects funded by the oil and gas programs support more graduate student degrees in these areas than any other single source. The natural gas program is laying the groundwork for substantial future resource recovery, including production from methane hydrates (which represent a potential 100 years supply for the United States) and from deep reserves such as the three mile well recently completed in Texas. The enhanced oil recovery program has the potential to provide the United States with more than 89 billion barrels of domestic oil that is currently not recoverable while sequestering large quantities of CO₂. Curtailment of these programs will severely restrict our ability to produce our

oil and gas reserves. We recommend restoration of these programs to their previous historic levels.

—*Petroleum Technology Transfer Council.*—We recommend continued funding at a level of \$2.8 million for the programs administered by the Petroleum Technology Transfer Council (PTTC). The PTTC, working regionally through 10 universities, operates resource centers for oil and natural gas information, training, and conferences, all directed to the needs of small producers. PTTC programs play a critical role in providing independent producers throughout the country access to the best technology to explore for and to develop new and innovative domestic energy opportunities while remaining competitive in a global energy market. Federal support will be equally matched with state and private dollars.

Advanced Research

NRCCE recommends the addition of \$5 million to the Advanced Research Program to support computational energy sciences and materials research.

—*Supercomputing Science Consortium.*—One of the major components of the Computational Energy Sciences program is support for advanced computational research at universities and national labs through time allocations at facilities such as the Pittsburgh Supercomputing Center (PSC). This activity is coordinated by the SuperComputing Science Consortium (SC₂), an organization consisting of the National Energy Technology Laboratory (NETL), the PSC, and higher education and advanced research organizations in the region near NETL. The SC₂ also conducts activities at the K–12 educational level that stimulate students to undertake science and engineering careers. Of the funds recommended, \$2 million should be directed to the Computational Energy Sciences budget to support the SC₂ program.

—*Materials Research.*—An expanded suite of advanced materials is needed to improve the energy efficiency and environmental performance of coal-based power systems. NRCCE recommends that the Administration request for this program sub-element be increased by \$3 million to a level of \$10.1 million for fiscal year 2008. The additional funding should be directed toward the development of specialty metals, new alloys, and surface coatings that can function at substantially higher temperatures and/or withstand highly corrosive environments in applications such as sensors and controls, fuel cells, and harsh environments in multi-phase flow energy systems. Of the added funding, \$2 million should support initiatives at NETL-Albany and universities, for which cost sharing from industry should be required.

OFFICE OF FREEDOM CAR AND VEHICLE TECHNOLOGIES/EERE

NRCCE recommends \$3 million for two programs in vehicle technologies that promote reduced emissions and energy savings in the transportation sector.

—*Transportable Emissions Testing Laboratory.*—U.S. DOE established a specialized Transportable Emissions Testing Laboratory in 1989 for research on improving fuel economy, advancing alternative fuels technology, and reducing exhaust emissions of heavy duty vehicles. The Laboratory provides valuable data to government agencies to establish reasonable emission level standards and to assess the effectiveness of new technologies. Heavy-duty engine emission standards established in 2007, and increasing interest in biodiesel, ethanol, hydrogen, natural gas and coal-to-liquids fuel necessitate further advanced fleet performance measurements. Of the funds recommended, the Transportable Emissions Testing Laboratory program should be continued at \$2 million in fiscal year 2008.

—*Lightweight Composite Materials.*—Advanced composite materials improve energy efficiency by reducing structural weight to allow a higher fraction of payload for vehicles limited to the 80,000 pound maximum weight restrictions on national highways. Results from this program enable the design and fabrication of lighter-weight trailers, trucks, and buses. Significant fuel savings and reduced emissions are obtained through improved fuel efficiency associated with lighter vehicles and/or a reduced number of trips to deliver multiple payloads. Of the funds recommended, the Lightweight Composite Materials for Heavy-Duty Vehicles Program should be continued at \$1 million for fiscal year 2008.

OFFICE OF INDUSTRIAL TECHNOLOGIES/EERE

Wasted energy is the single largest source of currently available energy in the United States. The Industrial Technologies Program (ITP) in EERE is the DOE's lead agency for improving industrial energy efficiency through high-value research, plant assessments, software tools, and training. Enhanced industrial energy effi-

ciency is the most cost-effective strategy for improving U.S. industrial competitiveness while reducing greenhouse gas emissions from energy-intensive manufacturing plants. In addition, the U.S. trade deficit can be reduced through export of industrial energy efficiency technologies and equipment to developing countries such as China and India. The ITP budget should be restored to its 2005 level of \$73 million.

OFFICE OF ELECTRICITY DELIVERY AND ENERGY RELIABILITY

In fiscal year 2006, the Subcommittee appropriated funds for the Integrated Control of Next Generation Power Systems. This program enhances the reliability and security of the power grid through technology which is based on advanced communication, computer control, and electronics that enable real-time detection of system problems. The electrical circuits are then automatically reconfigured to minimize the potential impact of a natural disaster, human error, or a terrorist attack. This project will enable DOE to design system architectures to effectively control the intelligent, interoperable electric grids of the future. This program should be continued in fiscal year 2008 at \$2 million.

PREPARED STATEMENT OF THE AMERICAN IRON & STEEL INSTITUTE

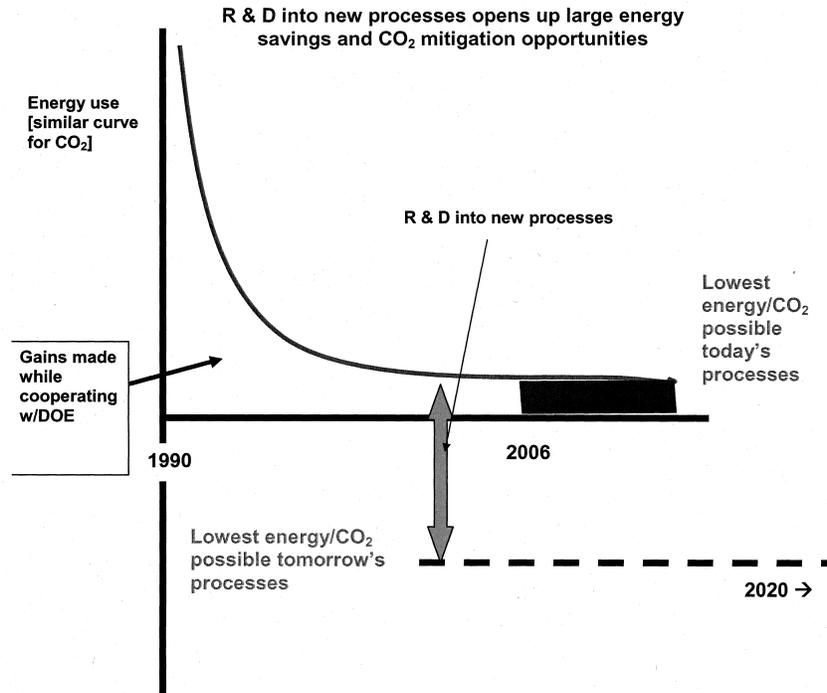
The basis for this testimony is to urge Congress to restore funding of the Industrial Technologies Program (ITP) line item for Steel within the Energy Efficiency and Renewable Energy section at the Department of Energy [DOE] to the original level of \$10 million.

The stated goal of the ITP is to reduce the energy intensity of the U.S. industrial sector through coordinated research and development, validation, and dissemination of energy-efficiency technologies and operating practices. The Department of Energy and domestic steelmakers co-fund cutting-edge research that addresses the needs of the nation and our industry. The goal of these projects is to reduce energy consumption [thereby diminishing the nation's dependence on foreign sources of oil], lessen environmental impact [through emissions reductions] and increase the competitiveness of domestic manufacturers. Furthermore, what makes the ITP program so unique and appropriate is that only those projects with "dual benefits" [i.e., a public benefit such as reduced emissions or petroleum use, which justifies the DOE investment; and an industry benefit such as a more efficient steelmaking process, which justifies the industry investment] are initiated. It is important to note that federal funding does not go to steel companies, it is pooled with steel industry funds and awarded to qualified universities, national labs, and private research organizations through a competitive process.

In 2003, Congress appropriated \$10 million to fund the Steel component of ITP. Unfortunately, in recent years the program [and the projects it supported] suffered deep budget cuts. This is the case once again, as for fiscal year 2008, the administration requested approximately \$1.6 million.

It must be noted, that without restoring funding to fiscal year 2003 levels, true breakthrough programs cannot be fully developed. Universities, research labs and steelmakers have reached the threshold of what can be accomplished [in energy-efficiency improvements and emissions reductions] under the current funding structure.

The chart below is representative of the gains in energy efficiency made by materials manufacturers since 1990, i.e., during the time they have partnered with DOE.



This chart clearly shows that steelmakers have become very efficient for the processes they operate today. It is not coincidental these gains have occurred during the time the DOE ITP program for Steel was funded at \$10 million annually. To make the type of gains in the future that have been seen since 1990, new process development is required and new process development requires funding be restored to historical levels. Some of the most promising new process development projects with the potential to reduce steelmaking CO₂ emissions by more than 70 percent are Ironmaking by Molten Oxide Electrolysis [now underway at the Massachusetts Institute of Technology] and Ironmaking by Flash Smelting using Hydrogen [University of Utah]. Both of these technologies show great promise and need fiscal year 2008 funding to proceed.

Summary

The Industrial Technology Program-Steel selects projects that have both public and private benefits, justifying the investment of both DOE and industry. In addition, the research is conducted at the most qualified facilities in North America, with over 80 percent of funding supporting tasks at universities, national labs and technology developers, many of which are small businesses. ITP-Steel is a unique and successful program that is not only beneficial to the domestic steel industry; it is beneficial to the nation as we attempt to become more energy-efficient while significantly improving the environment.

Please consider restoring ITP-Steel funding to the original level of \$10 million so that its public and private benefits can reach even further into our economy. Thank you for your consideration.

PREPARED STATEMENT OF THE NUCLEAR ENGINEERING DEPARTMENT HEADS ORGANIZATION (NEDHO) AND THE NATIONAL ORGANIZATION OF TEST, RESEARCH, AND TRAINING REACTORS (TRTR)

Chairman Dorgan, Ranking Member Domenici, members of the Subcommittee, we appreciate the opportunity to provide testimony to the Subcommittee regarding fiscal year 2008 Energy and Water Development Appropriations legislation. Together,

NEDHO and TRTR provide representation for the entire U.S. academic nuclear engineering community on issues related to federal policy and funding.

NEDHO and TRTR urge the Congress to provide funding for University-based nuclear engineering programs and research reactor programs commensurate with the authorized levels of the Energy Policy Act of 2005, which is \$50.1 million for fiscal year 2008.

The chart below provides a recommended breakdown of funding.

(Dollars in millions)

Item	Fiscal Year 2008 Funding	Justification/Benchmark
Research	\$30.1	Basic and mission-specific (applied) research. University-based research reactor fuel, instrumentation, safety, and security upgrades.
Facilities	10	
People Support and infrastructure	10	Nuclear Engineering/Health Physics fellowships, scholarships, matching grants and minority outreach.
TOTAL REQUEST	50.1	Fiscal year 2008 funding level authorized in the Energy Policy Act of 2005 (Public Law 109-58).

As you well know, Nuclear Science and Engineering (NSE) plays a critical role in ensuring the U.S. energy supply, reduction of the global warming gases, and the national security. With regard to energy independence, nuclear reactors are currently generating about 20 percent of the nation's electricity needs, and have contributed to the reduction of nearly 700 million tons of carbon dioxide and over one million tons of nitrogen oxide. These are equivalent to 96 percent of carbon dioxide and 41 percent of nitrogen oxide emissions from automobiles in the United States.

In order to meet the anticipated increase in electricity demand, utilities are planning to build new nuclear reactors. There will be a corresponding increase in demand for scientists and engineers to design, license, operate, and maintain these new reactors. Nuclear utilities, nuclear vendors, and the Nuclear Regulatory Commission (NRC) need hundreds of well-trained nuclear engineers and scientists. Moreover, a large number of nuclear scientists and engineers are needed to work within the DOE complex in such programs as the NP2010, Generation IV, Nuclear Hydrogen Initiative, and the Global Nuclear Energy Partnership (GNEP).

In its early years, nuclear science and engineering received significant federal funding that led to major developments such as nuclear submarines, research reactors, and commercial power reactors. However, the TMI accident, cheap fossil fuels, significant delays in construction of nuclear plants due to changing regulations, public interventions, and a surplus of electricity led to a perception that nuclear engineering was a field without a future and as a result, undergraduate enrollments decreased. Graduate enrollments also decreased but at a somewhat slower rate since they are not linked as strongly to the nuclear power industry. This situation was exacerbated by the reduction of federal support for NSE, including research support, fellowships, and scholarships.

The downturn in enrollments and reduction in federal funding led to the demise of over half of the NSE programs and university nuclear reactors from 1980 to 2000, leading to a seven-fold reduction in the number of BSE graduates over this period of time. Efforts to reduce and reverse these alarming trends in enrollments, departments, and reactors led to the revitalization of the University Programs within the Nuclear Energy office of DOE including funding for fellowships/scholarships, Nuclear Engineering Education and Research (NEER), Nuclear Energy Research Initiative (NERI), University Reactor Sharing and University Reactor Instrumentation programs, revitalization of radiochemistry, DOE-Industry Matching grant, Innovations in Nuclear Infrastructure and Education (INIE), and more recently, the Young Faculty awards. These programs contributed mainly to the graduate education and training of engineers and scientists needed for national laboratories, but they also helped to improve departmental and reactor facility infrastructure.

Historically, Congress has provided funding for the nuclear engineering discipline through a separate line item in the U.S. Department of Energy, Office of Nuclear Energy entitled "University Reactor Infrastructure and Education Assistance." This program has received modest increases in funding since the end of the 1990s when it was nearly zeroed out. In the fiscal year 2007, both the U.S. House and Senate Energy and Water bills recommended funding of \$27 million.

The existing funds are not stable and flexible enough to meet the current and the anticipated demand for NSE graduates (BS, MS, and PhD) over the next decade.

Therefore, we believe that the nation's policies on energy and national security require the significant expansion of the U.S. nuclear engineering education enterprise. Driving factors for this expansion include the anticipated Nuclear Power Renaissance, increased focus and interest in developing advanced fuel cycle technologies and reactor designs, and the expanding need for development and deployment of nuclear materials detection technologies for homeland security and monitoring and prevention of nuclear proliferation.

The U.S. nuclear engineering education community stands ready to meet these approaching challenges. However, it will require increased resources from the federal government—beyond the levels enacted in previous fiscal years—and include funding for scholarships and fellowships, support of university-based reactor facilities, and basic and applied research.

As such, NEDHO and TRTR believe the federal government should provide funding for University-based nuclear engineering programs commensurate with the authorized levels of the Energy Policy Act of 2005, which is \$50.1 million for fiscal year 2008.

Also, as we are sure the committee is aware; the Administration has proposed the termination of funding for the University Reactor Infrastructure and Education Assistance account line in its fiscal year 2007 and fiscal year 2008 budget requests. DOE NE has indicated that its preference is to fund academic nuclear engineering research efforts through its existing program lines. This means the funds for infrastructure and fellowships/scholarships are significantly reduced or completely eliminated! It is quite unfortunate and unusual that in this time of great need for new nuclear engineers and scientists, the federal government is not providing funding for nuclear engineering and education.

NEDHO and TRTR are not in a position to make recommendations as to the specific budgetary mechanics of providing funding to university programs. However, our two organizations believe strongly that university funding must be increased, stabilized, and flexible to allow for the current and expected growth to support expanded research, as well as reinvestment in human, reactor infrastructure, and major research equipment.

Finally, we recommend that the Subcommittee consider the recent report by the American Nuclear Society, entitled "Nuclear's Human Element." NEDHO and TRTR endorse the principal findings and conclusions of this report, which lays out a framework for improving federal investments in nuclear science and engineering education in the longer term. We believe to maintain the nation's competitiveness, it is essential that Congress and the Executive Branch take the necessary steps in establishing a strong and effective platform for meeting the technological and human resources need in nuclear science and engineering.

We look forward to working with you in formation and implementation of a progressive program for nuclear engineering research and education.

Thank you.

PREPARED STATEMENT OF THE NORTH AMERICAN DIE CASTING ASSOCIATION

As President of the North American Die Casting Association (NADCA), I respectfully submit this testimony in support of the HyperCAST funding request for \$1.5 million in the U.S. Department of Energy, Energy Efficiency and Renewable Energy, Vehicle Technologies Program filed with the Subcommittee by Senators Edward Kennedy and Ken Salazar.

NADCA is the nation's leading not-for-profit technical organization representing all facets of the U.S. die casting industry. NADCA exists to support our domestic industry and to maintain our global competitive lead through the continued development of cutting edge technology.

NADCA has decades of successful experience coordinating research and development activities between various U.S. funding agencies (DOE and DOD), government laboratories, universities, and metalcasting companies. The technology and processes developed through these programs is rapidly transferred by NADCA to small, medium and large casting companies nationwide. Past programs have earned strong bi-partisan support from Congress.

OVERVIEW

Congress has long recognized the overwhelming need to dramatically curtail wasteful automotive and vehicle energy consumption in our nation. Maximizing energy efficiency in our domestic transportation system is a matter of economic security and environmental necessity.

The North American Die Casting Association is collaborating with the U.S. Department of Energy, Vehicle Technologies Office in an effort to rapidly and dramatically advance these goals. This innovative and dynamic program is HyperCAST.

The HyperCAST program goal is to support our nation's transportation energy efficiency goals by developing technology for high performance, light weight, cast metal components for energy savings in commercial and military vehicles and trucks.

The HyperCAST program will deliver a variety of important benefits including:

- Providing significant new energy savings in transportation technology, commercial and military vehicles and trucks;
- Developing new alloy and process development to maintain our domestic casting industry as a technology leader in the world market;
- Conducting university based research at Ohio State University, Case Western Reserve, the Colorado School of Mines, and Worcester Polytechnic Institute;
- Transferring new technology broadly to small and medium casting shops across the United States . . . 80 percent of metalcasting companies have fewer than 100 employees; and
- Matching every federal dollar with contributions from industry.

There is no doubt that enhanced fuel efficiency and alternative fuel vehicles contribute to our nation's energy security. High performance light weight components are necessary in making petroleum fueled cars and trucks more energy efficient. In addition, advanced high strength light weight materials and processes for the design of components offer the greatest opportunities for the development of new vehicles that do not require petroleum fuels.

The HyperCAST research is targeted at the development of high performance light weight aluminum and magnesium castings for energy efficient components for transportation. More specifically, this project entails the development of materials and processes for cast light weight frame, body, chassis and powertrain components for fuel efficient passenger cars and both commercial and military trucks. Therefore, the project is cross-cutting as it serves to meet goals of the FreedomCAR and 21st Century Truck programs. The advanced materials and processes developed will have a focus on fuel efficiency and cost effectiveness.

These important technological advancements will also enhance the U.S. metalcasting industry's ability to maintain a lead role in the world market. It is technology that enables this vital industry to compete globally and to keep jobs in the United States.

The objective of HyperCAST is to develop materials and processes for high strength light weight cast components for vehicles that are affordable and offer the potential for 60 percent weight reduction and related improvement in energy efficiency. NADCA and university researchers are confident that these goals can be met without compromising vehicle performance, cost, safety or recyclability.

The following examples are offered to describe the energy saving opportunities offered by the HyperCAST Program.

Example 1: A cast aluminum engine block with cast iron sleeves currently weighs 85 pounds. Moving to a magnesium composite material would result in about the same productivity improvement but would yield a casting weight of 49 pounds—a savings of 36 pounds or 42 percent.

Example 2: An aluminum transmission case casting currently weighs 31 pounds. Casting this component with a new aluminum composite material and considering a 20 percent strength increase would yield a casting weight of 27 pounds. Produced as a magnesium composite material, the casting would weigh 22 pounds—a savings of 9 pounds or 29 percent.

The HyperCAST numbers show a dramatic potential for improvement in our nation's fuel efficiency and environmental impact. There is an average of 280 pounds of aluminum in a car. It is estimated that the HyperCAST technology can reduce that weight by 100 to 120 pounds without compromising strength, safety or performance. In addition, for every pound reduced automakers can cut two more pounds or 200 to 240 more pounds, from the drive train. Finally, for every pound reduced in the car's weight, estimated at almost 360 pounds, an environmental benefit will be realized through an annual reduction in carbon monoxide of 2 pounds for every one reduced. That would be 720 pounds of carbon monoxide reduced annually for every car manufactured with the HyperCAST technology.

This project will utilize researchers from the premier universities (Ohio State University, Case Western Reserve University, Colorado School of Mines, and Purdue University) and government laboratories with experience in cast materials and processes for the research activities, premier casting companies for demonstration of the research results, and the industry associations for coordination of efforts and technology transfer. The request is supported by the following:

- Dr. Diran Apelian, Director of Metals Processing Institute at Worcester Polytechnic Institute;
- Dr. John Moore, Head of the Metallurgy Department at the Colorado School of Mines;
- Dr. David Schwam, Director of the Metal Casting Laboratory at Case Western Reserve University;
- Dr. Allen Miller, Professor in College of Engineering at Ohio State University;
- Tim Stewart, President and CEO of Yoder Industries in Dayton, OH;
- Richard Rogel, President and CEO of Empire Die Casting, Inc in Macedonia, OH;
- Paul Head, Vice President of Operations at Empire Die Casting, Inc.;
- Robert Hopkins, Vice President of Administration at Empire Die Casting, Inc.;
- Robert Stuhldreher, Director of Casting Operations at Metaldyne in Twinsburg, OH;
- Scott A. Frens, Senior Sales & Tool Engineer at Fort Recovery Industries in Fort Recovery, OH; and
- Barry S. Houndshell, Director of Manufacturing at Fort Recovery Industries.

Finally, the technology developed will be distributed by NADCA solely to North American metalcasters in order to provide the North American industry with a globally competitive advantage and assist in maintaining the viability of metalcasting in North America.

We hope we can depend on your support to fund this valuable and important program.

PREPARED STATEMENT OF THE FUEL CELL POWER ASSOCIATION

The Fuel Cell Power Association appreciates the opportunity to submit this statement in support of the Department of Energy's Fossil Energy, Fuels and Power Systems, Fuel Cell Program. We urge the Subcommittee to continue to support this breakthrough program by appropriating \$80 million for development of this highly efficient, clean, and secure energy technology.

DOE's Fossil Energy Fuel Cell Program, through the Solid State Energy Conversion Alliance (SECA) fuel cell activity, is developing technology to allow the generation of highly efficient, cost-effective, carbon-free electricity from domestic coal resources with near-zero atmospheric emissions in central station applications. The program directly supports the president's FutureGen project through the development of cost-effective, highly efficient, power blocks that facilitate sequestration in coal-based systems. The technology will also permit grid independent distributed generation applications by 2010.

SECA fuel cell systems operating on coal gas are building blocks for zero emissions power, the ultimate goal of the President's FutureGen Program. These systems are projected to be available at a target cost of \$400/kw. In addition the technology developed in this program will produce electricity at up to 60 percent efficiency in coal-based systems, produce near-zero emissions, and easily enables carbon sequestration.

In all applications SECA fuel cells will be both low-cost, with the above-stated goals of \$400/kw, as well as highly efficient. Integrated with coal gasification, the system's 60 percent efficiency compares very favorably to the existing coal-based power generation fleet average of about 33 percent efficiency. In distributed generation applications even higher efficiencies may be reached, and cogeneration opportunities can further increase efficiency.

Along with these attributes fuel cells are one of the cleanest technologies available in terms of atmospheric emissions, which enhances their attractiveness for urban applications or applications in areas of non-attainment for Clean Air Act emissions. They have already achieved NO_x and SO_x emission levels of less than 0.05 ppm compared to orders of magnitude higher for conventional technologies. They also provide 24 hour, silent operation.

Finally, coal-based fuel cell systems will increase energy security by using domestic resources. In distributed generation applications fuel cells can eliminate transmission and distribution system infrastructure concerns and issues by providing generation near the point of use and by being able to operate in a grid-independent mode.

The SECA Program consists of six integrated industrial manufacturing teams designing fuel cell systems, developing the necessary materials, and ultimately responsible for deploying the technology. These teams are complemented by up to three dozen core technology performers providing generic problem-solving research needed to overcome barriers to low-cost, high performance technology as identified by DOE

and the manufacturing teams. The core technology teams are universities, national laboratories, and other research oriented organizations. This unique structure assures that a variety of approaches to solving the problems associated with fuel cells will be undertaken in a manner that will increase the chances of success for this highly complex technology.

Several of the manufacturing teams are developing systems for application to large central generation systems characterized by FutureGen. The remaining manufacturing teams are developing fuel cells for possible use in both these large systems as well as in distributed generation applications such as auxiliary power units, military power applications and remote or on-site power generation.

The DOE budget request for this program for fiscal year 2008 is \$62.0 million, slightly below the fiscal year 2007 funding level of \$63.4 million. Funding of \$65 million will continue to support the current program, which involves larger-scale Phase II development work on the part of manufacturing teams in the program and continued effort by the core technology performers. However, in order to deliver full scale fuel cell system hardware for the FutureGen project additional support of \$15 million is necessary to assist and accelerate the creation of manufacturing capability by the formation of teams between existing fuel cell stack developers and industry, with the goal of delivering hardware by the scheduled date of 2011, and also to keep the base program on schedule. A rapid advancement to large-scale manufacturing is critical to the successful use of fuel cells in the FutureGen project and subsequent use in Integrated Gasification Combined Cycle (IGCC) facilities on a commercial basis. Significant funding over the next several years will allow development of such capacity by 2010 so that fuel cell modules can be manufactured and delivered to the FutureGen project by 2011. These large-scale modules will lead to the higher efficiencies and cleaner performance necessary to assure the use of clean coal technologies in the long run.

We believe that the SECA fuel cell program has achieved the progress to date as reported by the program managers, and has excellent prospects for achieving program objectives given sufficient funding support by DOE and the Congress. Hybrid technology has been successfully integrated into the program and an emphasis on use with coal-based systems has been established. Industry partners in the program have continued and increased cost-sharing support. All major stack developers have met the initial goals of the program allowing continuance to more advanced stages of development. This technology is essential to meeting the efficiency and emissions goals of the President's FutureGen program and will also provide low-cost, low-emissions alternatives for distributed generation applications. Therefore, we urge you to support our request for \$80 million to execute the DOE Fossil Energy, Fuels and Power Systems, Fuel Cell Program in fiscal year 2008.

PREPARED STATEMENT OF THE CENTER FOR PLASMA SCIENCE AND TECHNOLOGY,
FLORIDA A&M UNIVERSITY, AND THE DEPARTMENT OF PHYSICS, WEST VIRGINIA
UNIVERSITY

Chairman Dorgan and Members of the Subcommittee: We request an appropriation of \$5 million to the Fusion Energy Science Program, U.S. DOE Office of Science, for basic research on the control of turbulent hot plasma in fusion power reactors. This program contributes to the work of the International Thermonuclear Experimental Reactor (ITER) program, an international fusion effort to which the United States is committed as a full partner.

Introduction

As global population increases and the standard of living of third world countries rises, the demand for energy will increase substantially over current levels. The report, *Future of Coal*, released March 14, 2007 by researchers at MIT, projects that fossil energy will be the dominant fuel source well into the future. Generating electric energy and powering our transportation sector with fossil fuels will substantially increase CO₂ emissions, thereby exacerbating concerns about greenhouse gas emissions which can alter the global climate.

Near term, we accept the reality that fossil fuels will power the global economy. Carbon sequestration offers the prospect of reducing the environmental impact of fossil fuel use. Even with such advances, however, we must recognize that fossil fuel resources are limited. Beginning in 2020, the total world demand for energy will exceed substantially all available energy from fossil, hydro and non-breeding nuclear fission reactors, exceeding by 10 percent the total energy available. The shortfall will grow to nearly 50 percent of the total energy available by 2060. Longer term,

science and technology must find alternative sources of energy if we are to meet the needs of our global population.

Since construction of a new power plant based on existing technology can take as much as ten years from concept to operation, we must act now to plan the orderly implementation of alternative sources of electricity. Experience has shown that the odyssey of a new technology from conception to commercial deployment can exceed 20 years.

Potential of Fusion Energy

Fusion energy is one of our global options for providing energy in the future. Fusion processes create energy from super-hot plasmas using magnetic confinement to avoid the problems of developing materials to withstand temperatures exceeding 50,000 degrees K. Fusion energy technology has emerged as a safe and reliable option with a large fuel reserve—we can generate energy from sea water.

Among the many confinement options for fusion, a spheromak configuration enables the attainment of the necessary high temperatures without requiring massive magnets, extraordinary infrastructure complexity and the associated costs for fusion conditions to be achieved. The spheromak configuration, if successful, can provide electricity from fusion on a scale which can be built by traditional energy companies in the United States. However, much of the physics of this option is still uncertain.

Spheromak Turbulent Plasma Experiment (STPX)

We request support from the Energy & Water Development Subcommittee for a program of research called the Spheromak Turbulent Plasma Experiment (STPX). This joint Florida A&M University (FAMU)-West Virginia University (WVU) project is focused on developing basic fusion science with tangible benefits to the nation.

At FAMU Center for Plasma Science and Technology, a spheromak will be built by a team of faculty and students already significantly involved in fusion funded research. A full spectrum of traditional and innovative diagnostic techniques for the STPX will be developed at WVU and a host of other collaborating Universities and National Laboratories along with those developed at FAMU. Although similar in size and generic features to an existing spheromak, the STPX detailed design will be driven by the need to obtain the desired physics outcomes. Our design will be dramatically different in several important features from any existing fusion facility in the world.

STPX will make important and unique contributions to the Department of Energy Fusion Science Mission through the development of a more compact containment technology. In addition, 20 Ph.D. plasma physicists from currently underrepresented groups will be produced in time to support the U.S. contributions to ITER. These new scientists will thereby be the next generation of the fusion scientific workforce, the first group to benefit from the advances obtained through the ITER project. More importantly, they will find employment in basic scientific research.

The other benefits from our programs consist of contributions to technologies for materials fabrication and processing (e.g., computer chips), advanced lighting, and in transportation fuels synthesis.

Outcomes from Program

This project will use the three approaches of theory, experiment, and simulation to quickly obtain information and develop the tools for full kinetic modeling of the spheromak plasma's makeup. This project will enable us to understand better how turbulent plasmas are heated, a key step towards progress in controlled thermonuclear fusion as well as towards understanding astrophysical systems. The relationships between ion heating in fusion plasmas, reconnection events, and microparticle transport will also be determined through this project in a manner enabling the manipulation and enhancement of core plasma heating.

Period of Support

We seek a three-year commitment of support from the Subcommittee totaling \$15 million for construction and the development of diagnostic tools and processes. FAMU will share the costs by providing renovated housing for the STPX, (estimated cost share of \$3.7 million), and the infrastructure support normally associated with research projects. Construction and diagnostics research will be finished in three years with the expectation that we will generate our first plasma in May of 2011. We expect annual operations (at roughly \$500K/yr) to be funded after attaining first plasma through normal research funds from DOE, NSF, and other public and private entities to FAMU, WVU, and other participating institutions.

Summary of Request

We request support of \$5 million for fiscal year 2008 from the USDOE Office of Science, Fusion Energy Sciences Program, for the Spheromak Turbulent Plasma Experiment.

Thank you for the opportunity to offer testimony to the Subcommittee.

PREPARED STATEMENT OF THE NUCLEAR ENERGY INSTITUTE

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI)¹ appreciates the opportunity to provide the subcommittee with its perspective on the nuclear-related programs under the subcommittee's jurisdiction, and on the President's proposed budget for those programs in fiscal year 2008.

NEI supports fiscal year 2008 funding for the following programs: Office for the Energy Loan Guarantee Program (\$8.4 million), Nuclear Power 2010 (\$183 million), Generation IV reactor programs (\$100 million), Nuclear Hydrogen Initiative (\$35 million), University programs (\$50.1 million), Office of Radioactive Waste Management (\$494.5 million), Advanced Fuel Cycle Initiative (increased funding over fiscal year 2007), and the Nuclear Regulatory Commission (\$913 million).

The nuclear energy industry produces one-fifth of America's electricity, and is preparing to build advanced-design nuclear power plants to meet growing electricity demand. Nuclear energy is an essential component of a diverse energy portfolio, and NEI appreciates the leadership on nuclear energy's issues by members of this committee.

NEI's statement for the record addresses the industry's highest priorities. In several cases, NEI believes America's energy security justifies increases in fiscal year 2008 funding above the President's request.

Establishing an Effective Energy Loan Guarantee Program.—The energy loan guarantee program was created by the 2005 Energy Policy Act to support private sector investment in advanced energy technologies, including new nuclear power plants. The loan guarantee program is designed to be self-financing, with project sponsors responsible for underwriting the cost to the federal government of providing the credit support. Properly implemented, there will be no cost to the taxpayer.

This program is essential for companies planning to invest billions of dollars in licensing and construction of new nuclear power plants in the United States. The electric industry faces major capital investment requirements (\$750 billion-\$1 trillion) over the next 15–20 years (in distribution, transmission, generation, and environmental control technology). The capital investment required will strain the electric sector's financing capability. The size of the capital investments (at least \$3–4 billion for new nuclear plants in today's dollars) is very large relative to the size of the companies making the investments, and the loan guarantee program provides the credit support necessary to finance these new plants.

The nuclear industry believes that the loan guarantee program requires disciplined management and rigorous project evaluation, with the cost of loan guarantees covering the government's potential exposure. NEI appreciates the subcommittee's leadership (in the fiscal year 2007 continuing resolution) in providing the funding and statutory language necessary to establish the Loan Guarantee Office at DOE. We endorse the Department of Energy's request for \$8.4 million to cover the program's administrative costs in fiscal year 2008. The nuclear industry notes, however, that the President's fiscal year 2008 budget proposes a \$9 billion loan volume limitation, with only \$4 billion of the \$9 billion allocated to large power projects like nuclear power plants. Given the cost of new energy infrastructure projects (including new nuclear plants, coal gasification plants and coal-to-liquids projects), a robust and viable loan guarantee program will require larger annual loan volumes in future fiscal years.

Maintaining the Momentum in the Nuclear Power 2010 Program.—The Nuclear Power 2010 Program supports the design and engineering work necessary to bring two advanced reactor designs (the Westinghouse AP1000 and the General Electric ESBWR) to the level of design completion necessary for companies to develop firm cost estimates, and to file applications for licenses to build and operate these plants.

¹The Nuclear Energy Institute is responsible for developing policy for the U.S. nuclear energy industry. NEI's 297 corporate and other members represent a broad spectrum of interests, including every U.S. utility that operates a nuclear power plant. NEI's membership also includes nuclear fuel cycle companies, suppliers of equipment and services, engineering and consulting firms, national research laboratories, manufacturers of radiopharmaceuticals, universities, labor unions and law firms.

Approximately two-thirds of the 33 new nuclear reactors announced publicly depend on successful, timely completion of the first-of-a-kind engineering on the two advanced reactor designs supported by the Nuclear Power 2010 program. Through its investment in the Nuclear Power 2010 program, the federal government achieves enormous leverage on behalf of the American taxpayer: The \$727 million total expected government investment in Nuclear Power 2010, matched by equal industry funding, will stimulate tens of billions of dollars of investment in new nuclear projects by 2015.

The Department of Energy's proposed fiscal year 2008 budget proposes \$114 million for Nuclear Power 2010. This level of funding will not maintain the program's momentum, and NEI recommends fiscal year 2008 funding of \$183 million, to be matched equally by private sector funding.

Ensuring Adequate Funding for the Nuclear Regulatory Commission and Oversight.—The industry supports NRC's fiscal year 2008 budget request of \$913 million to provide effective oversight of operating nuclear plants, timely processing of applications for license renewal and requests for power uprates, and efficient review of applications for combined construction/operating licenses, early site permits and design certification. We believe this level of funding should also ensure NRC readiness to begin review of DOE's Yucca Mountain license application next year. The industry also encourages the subcommittee to support NRC's need for additional office space to fulfill its regulatory responsibilities.

Given the increase in the NRC's budget—\$200 million in the last two years and \$425 million in seven years—NEI urges the subcommittee to require regular progress reports from the agency on the status of its licensing and other regulatory activities. Such reporting will allow the subcommittee to determine whether the agency is achieving the desired operational efficiency—by reducing the time required to process new plant license applications as it gains experience, for example. The industry also urges the subcommittee to require greater transparency in where NRC funds are being spent, by requiring full disclosure of planned staffing and resource needs in individual NRC divisions. This would demonstrate to Congress and the industry, which pays up to 90 percent of NRC's budget, that more of the requested budget is being allocated toward licensee-specific charges rather than general license fees.

Developing An Integrated Used Fuel Management Program.—The nuclear industry appreciates the subcommittee's leadership in the area of used fuel management. In 2008, the federal government will be nine years behind on its commitment to start moving used nuclear fuel from nuclear power plants across the nation to a federal repository. The nuclear industry supports the Administration's proposed budget of \$494.5 million for fiscal year 2008 to enable the Office of Civilian Radioactive Waste Management to submit a license application for the Yucca Mountain project by June 2008.

The Yucca Mountain project is a key component of a three-part integrated used fuel management strategy that includes: (1) interim storage until recycling or permanent disposal—or both—are available; (2) research, development and demonstration to close the nuclear fuel cycle and reduce the volume, heat and toxicity of by-products placed in the repository; and (3) developing a permanent disposal facility. Continued, demonstrable progress on all three elements of this integrated used fuel management system is important to preserve confidence in nuclear energy, and to support licensing and construction of new nuclear plants.

The nuclear industry has consistently supported research and development of the advanced fuel cycle technologies incorporated in the Advanced Fuel Cycle Initiative (AFCI). The industry recognizes that the Congress has important questions about the Administration's Global Nuclear Energy Partnership (GNEP). Nonetheless, the industry supports increased funding for the Advanced Fuel Cycle Initiative in fiscal year 2008 to continue this technology research and development program, and to achieve better definition of the program, which is critical to a long-term integrated strategy for used fuel management.

Preparing for the Next Generation of Nuclear Power Plants.—The large light water reactors operating today are well-suited for baseload electricity production, and the nuclear industry will continue to build and operate these reactor types well into the 21st century. It is clear, however, that the promise of nuclear energy technology extends beyond electricity production to include production of hydrogen and process heat. Next-generation high-temperature reactors, using advanced hydrogen production technologies, can produce hydrogen for transportation or for upgrading coal and heavy crude oils into usable products, thereby relieving pressure on natural gas supply (the source of most hydrogen produced today). High-temperature reactors can also generate process heat for desalination, to extract oil from tar sands, and for scores of other industrial applications.

This enormous potential justifies continued federal investment. NEI urges the subcommittee's support for the next-generation nuclear plant at the Idaho National Laboratory, funded through the Generation IV Nuclear Energy Systems Initiative program. NEI recommends funding for this program of \$100 million in fiscal year 2008, higher than the \$36.1 million proposed by DOE. NEI also recommends higher funding for the Nuclear Hydrogen Initiative—\$35 million in fiscal year 2008, rather than the \$22.6 million proposed by DOE.

Investment in people is as important as investment in technology, and the nuclear industry urges the subcommittee to restore funding of \$50.1 million in fiscal year 2008 for university programs managed by the Office of Nuclear Energy to support vital research and educational programs in nuclear science and health physics at the nation's colleges and universities. NEI also encourages the subcommittee to consider supporting a new program within the Office of Science for undergraduate and graduate programs in radiochemistry and other disciplines important to medical, energy and other applications of commercial nuclear technology.

Conclusion: Closing the Energy R&D Gap.—NEI has recommended modest funding increases, above the Administration's request, in several strategic nuclear energy programs, including Nuclear Power 2010, the Next Generation Nuclear Plant, the Nuclear Hydrogen Initiative, support for university programs and others.

NEI sees a growing body of evidence that increases in energy R&D will be necessary in the years ahead to create a sustainable energy supply infrastructure that meets national needs. In an analysis provided to the Congress in February, the Government Accountability Office found that DOE's budget authority for renewable, fossil and nuclear energy R&D declined by over 85 percent (in inflation-adjusted terms) from 1978 through 2005. The need for new technologies to address critical energy needs has not diminished over the same time period, however, nor have the energy and environmental imperatives facing the United States become any less urgent.

Similarly, the Electric Power Research Institute is conducting a broad-based assessment of the electricity supply and demand-side technologies necessary to achieve meaningful reductions in electric sector greenhouse gas emissions in the United States. Although still in progress, EPRI's analysis demonstrates that a broad-based portfolio of technologies and techniques—including substantial improvements in efficiency, aggressive deployment of new nuclear and renewable generating capacity, improvements in coal-fired power plant efficiency, carbon capture and storage—will be required. EPRI's initial estimate suggests that successful development and deployment of this portfolio between now and 2030 will require additional R&D investment of approximately \$2 billion per year. Although the federal government cannot be expected to finance all of that, there is clearly a need and a rationale for increased federal support for energy research, development, demonstration and deployment, in the nuclear energy area and across the portfolio.

PREPARED STATEMENT OF GE ENERGY

The following testimony is submitted on behalf of GE Energy (GE) for the consideration of the Committee during its deliberations regarding the fiscal year 2008 budget requests for the Department of Energy (DOE). Among GE's key recommendations are: (1) an additional \$73 million for the Nuclear Power 2010 program to develop new U.S. nuclear generation; (2) \$40 million in added funding for the GNEP program to start the necessary activities for technology demonstration and to help industry provide DOE with the information necessary to support the 2008 Secretarial Record of Decision; and (3) \$18 million additional for the Advanced Turbines program, DOE's major research effort focusing on gas turbines for electricity production which also addresses key needs for hydrogen turbines. Investments in these and the other important programs discussed below will help to meet the challenges of assuring a diverse portfolio of domestic power generation resources for the future.

NUCLEAR ENERGY PROGRAMS

Nuclear Power 2010.—The NP2010 Program provides vital funding in three areas that are essential to the development of new nuclear generation capacity in this country. The program provides support for the (1) certification of new reactor designs, such as GE's advanced light water reactor technology (ESBWR); (2) advancement of detailed design and deployment planning to support new nuclear plant construction in fiscal year 2010; and (3) preparation, submittal and NRC approval of two Combined Construction and Operating Licenses (COL). These activities are currently advancing with co-funding support from GE and Toshiba Westinghouse. Adequate DOE funding in fiscal year 2008 is necessary to maintain the schedules sup-

porting certification, COL license approval and construction initiation in fiscal year 2010.

The Administration has requested \$110 million for fiscal year 2008 to support the NP2010 Program. This request is insufficient to keep the program on schedule. This amount is below the amount that was determined to be necessary for fiscal year 2008 at the time the initial estimate of the total program development cost was provided by GE, Toshiba Westinghouse, NuStart and Dominion in 2005. Since that time, as new information has been developed, the Reactor Vendors and Industry have recognized the need to accelerate detailed design and the construction planning process to achieve enhanced certainty of cost and schedule risks. At the same time, regulatory costs have increased. As a result, the Reactor Vendors and Industry have determined that funding of \$183 million in fiscal year 2008 is required, an increase of \$73 million above the Administration's budget request.

The Advanced Fuel Cycle Initiative and the Global Nuclear Energy Partnership (GNEP).—The Global Nuclear Energy Partnership (GNEP), initiated in early 2006, benefits from the research and development work conducted under the Advanced Fuel Cycle Initiative (AFCI). GNEP seeks to expand the use of nuclear power in a proliferation-resistant manner, and to solve the nuclear waste issue by reducing the long-term radiotoxicity of spent nuclear fuel. The key emphases are on solutions for proliferation resistant fuel separations and long-term nuclear waste reduction.

In January 2007, DOE released the updated GNEP Strategic Plan, which outlines an implementation strategy to “enable a world-wide increase in the use of nuclear energy safely, without contributing to the spread of nuclear weapons capabilities, and in a manner that responsibly disposes of the waste products of nuclear power generation.” The GNEP Strategic Plan outlines government's and industry's roles in the development of the technologies and facilities required to implement the U.S. commitment to GNEP. To achieve a commercial solution for GNEP, DOE recognized in the Strategic Plan the need for industry involvement and active participation.

In support of the broad GNEP goals, and to help the DOE prepare for the 2008 Secretarial Record of Decision to proceed with a government-industry partnership to build a nuclear fuel recycling center and a prototype advanced recycling reactor, DOE in January issued awards to 11 commercial and public consortia. GE has expressed interest in designing, licensing, building and operating a demonstration nuclear fuel recycling facility and advanced recycling reactor, and was among those selected to conduct detailed siting studies for integrated spent fuel recycling facilities as part of GNEP. Pursuant to this DOE award, GE is preparing a site characterization report for a site in Morris, IL. GE's technology solution, called the Advanced Recycling Center, is based on pyroprocessing and PRISM reactor technology developed during the Advanced Liquid Metal Reactor program. This technology is ready for commercial-scale development and could provide an economically viable technical solution to solving the nuclear waste issue. GE believes that the GNEP program would be advanced if the Office of Nuclear Energy updates the AFCI Comparison Report to Congress with qualitative and quantitative information on the proven PRISM reactor and pyroprocessing technologies.

For fiscal year 2008, an additional \$40 million above the Administration's budget request, for total GNEP funding of \$435 million, is needed. Such additional funding should be used to help industry conduct technology demonstration projects, such as the demonstration of: (1) key reactor components (e.g., reactor vessel), (2) electro-refiner based fuel separation, and (3) a reactor and fuel separation simulator, and to provide the technical, economic and business information to DOE necessary to support the 2008 Secretarial Record of Decision. GE further recommends that adequate funding be provided for pyroprocessing and the PRISM reactor in support of DOE's GNEP policy goals.

FOSSIL ENERGY PROGRAMS

Cleaner coal technology is the key to maintaining coal as a significant part of the U.S. energy mix into the future. DOE's Clean Coal Power Initiative, Integrated Gasification Combined Cycle, and Carbon Sequestration Programs all have important roles to play in advancing the solutions that allow coal to be used in the most economical and environmentally acceptable manner.

Clean Coal Power Initiative.—GE supports the Administration's request to increase the funding level for the Clean Coal Power Initiative (CCPI) in fiscal year 2008. We encourage Congress to recognize that a commercial demonstration program for advanced coal power technologies provides a critical pathway for the technologies that will preserve coal's place in the U.S. energy portfolio. There is a continuing need for the CCPI to serve as the vehicle for the scale-up, plant integration, and initial deployment of advanced IGCC technologies, which will help IGCC tech-

nology move down the experience/cost curve. Another critically important role of the CCPI going forward will be in providing a means for the demonstration of carbon sequestration technologies.

GE welcomes DOE's commitment to move forward with a third round of the CCPI in fiscal year 2008. Further multi-project solicitations for later rounds of projects targeting advanced technology systems for CO₂ capture and sequestration also will be required as part of the overall response to the climate change challenges facing coal-based generation.

IGCC.—IGCC, with its capability for pre-combustion carbon capture, presents a significant advantage over combustion technology. Even with its current 20 percent to 25 percent cost premium over pulverized coal combustion, IGCC can provide a lower cost of electricity with carbon capture. Based on the incremental cost that carbon capture will add to all coal-based power generation, cost reduction must be pursued vigorously for IGCC to realize its potential in maintaining coal competitiveness in a carbon-constrained environment.

While widespread deployment is key to bringing IGCC costs down, technology advancements also are needed to minimize the impact of carbon capture. This requires a pipeline of new technologies that are moving toward demonstration and deployment. While the development of several large-scale commercial IGCC plants is underway, candidate technology advancements have already been identified for the next generation of IGCC. These technologies can significantly lower cost and improve performance in key areas of carbon shift, CO₂ capture, overall process efficiency plus advancing IGCC's economics for application on subbituminous coals. However, it will not be possible to even begin moving these technologies forward without increasing the fiscal year 2008 funding request for IGCC.

DOE's goal of a 10 percent premium for carbon capture with IGCC is aggressive but appropriate to the magnitude of the economic benefit that would be gained. Achieving this goal will require increased funding for technology development. The Administration's proposal to reduce funding for the IGCC program to \$50 million in fiscal year 2008 is not sufficient to provide the resources that are needed. We therefore urge that fiscal year 2008 funding for IGCC be increased by \$16 million.

Carbon Sequestration.—GE endorses the requested increase in funding for carbon sequestration technologies. Carbon sequestration and storage is a critical and necessary component of a total solution for low carbon coal. A focus of the program activity needs to be on the development of requirements for CO₂ quality necessary for long-term, secure and environmentally acceptable storage. These requirements are needed for carbon capture system design that is suitable for a wide variety of geological environments. The planning for large-scale field tests needs to identify candidate sources of large and reliable quantities of CO₂.

Advanced Turbines.—GE recommends that funding be increased by \$18 million to a total of \$40 million for the Advanced Turbines program. This program represents the Department's primary research effort focusing on the development of enabling technologies for high efficiency hydrogen turbines for advanced gasification systems. Gas turbine R&D is focused on advanced combustion and high temperature turbine technology for syngas/hydrogen fuels that will result from IGCC and FutureGen type power plants. The program addresses those gas turbine elements where the technology required for the use of syngas/hydrogen fuels differs from the requirements for natural gas fueled gas turbines. Unless the fiscal year 2008 budget for the Advanced Turbines program is increased, funding will be inadequate for this promising high priority work, and the progress and benefits of this research will be delayed accordingly.

GE has experience with gas turbines operating on fuel blends containing hydrogen, and has performed laboratory demonstration tests on high hydrogen content fuel. This experience highlighted the need for development of advanced combustion technology in order to drive down NO_x emissions and enable advanced hydrogen generation processes. In addition, current strategies for effective integration of all major subsystems need to be reviewed and redefined for use with hydrogen fuel.

Continued funding of DOE's program is essential for FutureGen to meet its goal of substantial improvement in the cost of carbon capture. FutureGen is being structured to serve as a test bed for advanced technology that is needed to reduce the performance penalty and improve the economics of carbon capture. If it is to meet its goals, the FutureGen program will need to draw on advancements resulting from the Advanced Turbines program.

GE recommends the Committee's attention to the testimony submitted by the Gas Turbine Association relative to the allocation of additional funding above the budget submission within the Advanced Turbines program budget. In particular, GE encourages the Committee to provide adequate funding to sustain the University Turbine Systems Research Program.

Advanced Research.—To enable future technological advances, within the funds provided for Advanced Research, the emphasis should be placed on investments to foster better understanding of gasification fundamentals. An improved physics-based understanding of gasification processes will facilitate improved gasifier and systems designs that may achieve 45–50 percent efficiency with integrated CO₂ separation, capture, and sequestration with near-zero emissions with less than 10 percent increase in cost-of-electricity.

RENEWABLE ENERGY PROGRAMS

Solar.—GE Energy fully supports the DOE budget request for the development of Solar technology. GE Energy is pleased to be able to work with the DOE on the recently awarded Solar America Initiative. This program involves a diverse team of industry, universities, and national labs working together to develop the technologies needed to drive down the cost of electricity to make solar competitive with other power generation technologies, leading to widespread application in the U.S.

PREPARED STATEMENT OF THE HEALTH PHYSICS SOCIETY (HPS) AND THE HEALTH PHYSICS PROGRAM DIRECTORS ORGANIZATION (HPPDO)

This written testimony for the record for fiscal year 2008 requests \$500,000 for the Health Physics Fellowships and Scholarships program through the Department of Energy's Office of Nuclear Energy (DOE-NE) to help address the shortage of health physicists, which is an issue of extreme importance to the safety of our nation's workers, members of the public, and our environment.

Health Physics is the profession that specializes in radiation safety, which is necessary for the safe and successful operation of the nation's energy, healthcare, homeland security, defense, and environmental protection programs. Although radiation safety is fundamental to each of these vital national programs, there is no single federal agency in the Executive Branch that serves as a home and champion for the health physics profession. This is due to the fact that health physics is a profession that cuts across all these sectors and is necessary for all these sectors to exist. However, it is a support profession for the principle disciplines in these programs, such as engineers, medical professionals, law enforcement professionals, military personnel, and environmental scientists, which are championed by corresponding federal agencies.

As the nation's development and use of radioactive materials grew following the end of World War II, the nation's energy, defense, public health, and environmental protection needs for health physicists were supported through student fellowships and scholarships largely from the Atomic Energy Agency (energy and defense) and Public Health Service (public health and environmental protection). However, over the years agencies and their missions changed, the nuclear power industry faltered and the DOE nuclear weapons complex downsized following the end of the cold war. This resulted in the academic program support from federal agencies dwindling until the last remaining support from DOE was terminated in fiscal year 1999. This lack of academic support was despite the continued need for health physicists in the energy, defense, public health, and environmental protection programs and an exponential growth for need in the medical and academic community.

As the health physics human capital crisis grew and loomed in the early years of the 21st century, a sector receiving increasing attention in the human capital shortage area was the nuclear energy industry, particularly with its ability to provide energy without producing "greenhouse gases." Congress and the Department of Energy (DOE) took action to add support to the nuclear engineering academic programs through DOE programs in the Office of Nuclear Energy (NE) (previously the Office of Nuclear Energy, Science and Technology) and eventually agreed that this was an appropriate support mechanism for the health physics academic program. In fiscal year 2005, just 3 years ago, Congress appropriated money to DOE-NE for a health physics fellowship and scholarship program as part of the University Reactor Fuel Assistance and Support budget item. At that time, then Director of DOE-NE, William Magwood, agreed this support was needed as he testified to this Committee that the DOE recognized ". . . a small but important element [of the University Support budget item was] to provide scholarships and graduate fellowships to students studying the vital and too-often overlooked discipline of health physics." Shortly thereafter, Congress reinforced its position that DOE needed to support the health physics academic programs in provisions of Section 954 of the Energy Policy Act of 2005. However, even though the need for increased numbers of health physics professionals continued to exist, after only two fiscal years of funding the NE Health

Physics Fellowship and Scholarship programs at minimal levels, the DOE has requested to cease funding this Congressionally authorized program.

In their fiscal year 2008 Budget Request, DOE states “Enrollment target levels of the University Reactor Infrastructure and Education Assistance program have been met and the program is no longer considered essential to encourage students to enter into nuclear related disciplines” (emphasis added). Similarly, in the Office of Management and Budget’s (OMB) performance assessment of the University Nuclear Education Programs, they conclude “Enrollments have tripled since the late 1990’s, reaching upwards of 1,500 students. In addition, more universities are offering nuclear-related programs and there is a growing interest in nuclear energy” and “While enrollments have reached the program’s target level of 1,500 students ten years ahead of schedule, the program is unable to demonstrate that it caused these results.”

This DOE statement and the OMB assessment are patently wrong with regards to health physics programs. Since DOE has only funded health physics programs for 2 years, we do not believe they have ever established “target levels” for health physics program enrollments nor has there been time to assess the effect of those 2 years of funding on health physics program enrollments. The DOE–NE HP fellowship and scholarship program thus far has provided 3 graduate fellowships in fiscal year 2006 and 0 undergraduate scholarships. In 2004, the HPPDO developed a plan for revitalizing the academic programs to a level that could meet the projected shortfall of health physicists. The HPPDO plan calls for an initial target of 20 graduate fellowships and 20 undergraduate scholarships, i.e., target levels well above the actual performance of the Nuclear Education Programs. In addition, the number of health physics programs graduating at least 5 students annually decreased from 20 programs in 1995 to less than half that number in 2005.

Although we consider it would take approximately \$1,000,000 to get to the HPPDO plan of 20 fellowships and 20 scholarships, we consider it important to address immediately the HP Graduate Fellowship program so we have between 15 and 20 fellows in a two-year Masters Degree program and up to 10 undergraduate scholarships to start meeting our nation’s workforce needs for radiation safety personnel. Funding of \$500,000 should allow for up to approximately 12 to 15 fellows and up to 10 scholarships with allowance for overhead administration costs. Considering the DOE budgets for the HP Fellowship and Scholarship programs for fiscal year 2005 and fiscal year 2006 combined have totaled \$500,000 and only produced 3 fellowships, we feel this request is very modest and we recognize it will not begin to provide the long term support that will eventually be required if we are to have enough safety professionals for our energy, healthcare, homeland security, defense, and environmental protection programs.

The Committee’s favorable consideration of this request will help meet our nation’s radiation safety needs of the future.

PREPARED STATEMENT OF THE UNIVERSITY OF TEXAS AT AUSTIN

I draw the Subcommittee’s attention to the importance of the National Methane Hydrates R&D Program in the National Energy Technology Laboratory of the Department of Energy. This is the premier federal program that deals with a unique geologic phenomenon. Though this program is housed in the Office of Fossil Energy, methane hydrates are more than a large potential resource—they are fundamental to the carbon cycle on our planet.

Methane hydrates present a basic science challenge of the first order. The scientific community is only beginning to figure out where hydrates are, how they got there, what quantities really exist, and what would happen if the prevailing conditions of temperature, pressure, salinity, and microbial symbiosis were to change. But even from the little we know about hydrates so far, one important conclusion emerges. The amount of carbon currently locked up in hydrates easily exceeds the total carbon in all the oil, natural gas and coal on the planet. So trying to make sense of how the carbon cycle works without studying hydrates is like learning how to drive a car when you only have a key to the glove box.

Methane is also a potent greenhouse gas, even more so than the widely discussed carbon dioxide. The behavior of methane hydrate deposits—when they form, when they dissociate, and how fast these processes take place—very likely holds some of the keys to understanding how Earth’s climate has changed in the past. Fully understanding the past would have enormous impact on predictions of how our climate might change in the future. Considering the political, social and economic ramifications of climate predictions, investment in understanding the scientific basis for change is wise.

Energy supply and climate change both fall within DOE's core mission. The National Methane Hydrates R&D Program in NETL is therefore ideally situated to drive our nation's effort to understand the science as well as the economics of these deposits. This is not news to this Subcommittee, for the previous session of Congress recommended steadily increasing support for the program over the next five years. I urge the Subcommittee to maintain its commitment to this uniquely important program.

PREPARED STATEMENT OF NGVAMERICA

Introduction

NGVamerica appreciates the opportunity to provide the subcommittee the following statement concerning the fiscal year 2008 appropriations for the U.S. Department of Energy (DOE). NGVamerica is a national organization of over 100 member companies, including: vehicle manufacturers; natural gas vehicle (NGV) component manufacturers; natural gas distribution, transmission, and production companies; natural gas development organizations; environmental and non-profit advocacy organizations; state and local government agencies; and fleet operators. NGVamerica is dedicated to developing markets for NGVs and building an NGV infrastructure, including the installation of fueling stations, the manufacture of NGVs, the development of industry standards, and the provision of training.

Summary of Appropriations Requests

Fund the NGV RDD&D Program at \$20 Million for fiscal year 2008

Fund the Clean Cities Program at \$20 million for fiscal year 2008

Clarify that Biogas-to-Biomethane Production Projects Qualify Under Existing DOE-funded Programs

Statement in Support of Appropriations Request

Increasing the use of natural gas vehicles (NGVs) can: (1) reduce America's dependence on foreign oil, (2) improve air quality in urban areas, (3) reduce the production of greenhouse gases, and (4) pave the way for the more rapid introduction of hydrogen transportation technologies. However, to achieve all these benefits, more NGV RDD&D is urgently needed.

DOE funding has been instrumental in supporting the development and introduction of alternative fueled technologies. Over the years, DOE funding has supported the development and refinement of natural gas engines, fueling infrastructure, codes and standards, and fleet demonstration projects. DOE emission testing programs and fleet case studies also have been critical to demonstrating the real-world air quality and economic benefits of using natural gas vehicles. DOE has also been a key player in integrating new natural gas engines into new vehicle platforms. As such, DOE has been an instrumental partner with industry in developing new and better products. As a result of these efforts, natural gas use for transportation displaced over 200 million gallons of petroleum in 2006. Most of this fuel is consumed by high fuel-use fleets (e.g., transit, refuse, and short-haul trucking) located in major urban areas. NGVamerica members have focused their marketing efforts mostly on heavy-duty truck and bus applications. Fleets operating these vehicles provide the best opportunity for increased petroleum displacement as well as reduced emissions of harmful pollutants.

Some of the major successes to date for our industry include full-commercialization of several of the cleanest internal combustion engines in the world, a growing share of the U.S. transit bus fleet, the use of hydrogen-blended fuels, installation of stations that simultaneously dispense CNG, LNG, hydrogen blends, and hydrogen, and the production and use of biomethane fuel produced from landfills. Many of our member companies also are experiencing a robust and growing export market for NGV products as a result of increasing interest in overseas markets. However, the U.S. market continues to represent a challenge, particularly due to the lack of long-term governmental support and a lack of vehicle product offerings.

DOE's efforts have led to some impressive developments over the years. Many of the products developed or supported by DOE funding will continue to provide benefits for many years. The heavy-duty vehicles that DOE help demonstrate and deploy often continue in service for 10–15, or more years. And because these applications mostly involve high fuel use fleets, the continued use of these vehicles will displace a large amount of petroleum. A single heavy-duty natural gas urban transit bus, for instance, over its lifetime will displace between 175,000–200,000 gallons of petroleum. That is a far greater amount of petroleum than even the most fuel-efficient light duty vehicle will ever replace. The point is not to stop encouraging light duty

fuel efficiency but rather to highlight the potential petroleum displacement of continuing to develop more heavy-duty natural gas applications.

The tax incentives enacted as part of the Energy Policy Act of 2005 and SAFETEA-LU are helping to support the market for NGVs and other alternative fuels. These incentives significantly improve the economics for users of alternative fuels. Unfortunately, a compelling economic case alone is not sufficient to commercialize new technologies, particularly not when developing new products costs millions of dollars and is fraught with risks. In transportation, this problem is particularly acute because of the economic problems facing U.S. manufacturers and the cost these manufacturers already must incur to ensure their petroleum fueled products meet increasingly stringent emission standards.

The NGV industry's RDD&D efforts are directed at bringing to market advanced NGV technology that will extend NGV use into more applications and lower the cost of purchasing and operating NGVs in all markets. Significant NGV RDD&D is needed to (1) improve engine efficiency, (2) further reduce engine emissions, (3) reduce the cost and improve the reliability of fueling infrastructure and (4) demonstrate alternative fuel systems in new applications—including natural gas/hybrid electric applications. In order to achieve these objectives and deliver the benefits provided by NGVs, our industry needs DOE to be a ready and willing partner. Given the importance of this continued effort, we request funding for the following specific activities:

Fund the NGV RDD&D Program at \$20 Million for fiscal year 2008

At one time, the Department of Energy had a robust on-road NGV RDD&D program based on a joint public/private sector plan. Several years ago, DOE's Energy Efficiency and Renewable Energy programs shifted emphasis to long-term, high-risk R&D (e.g., hydrogen vehicles). Since then, the Administration has requested no funding for NGV RDD&D. That is unfortunate since such a program is even more necessary today. For NGVs to achieve their market potential, federally funded RDD&D is needed to expand product offerings of engines to meet a wider range of applications. In addition, the process of integrating those natural gas engines into additional medium- and heavy-duty vehicle platforms must be accelerated. Those platforms include school buses, transit buses, trash trucks, delivery trucks and over-the-road trucks. Natural gas hybrid-electric platforms must be expedited, too. In addition, the cost and weight of compressed and liquefied natural gas on-board storage systems must be reduced. Finally, work must continue on improving NGV and NGV fueling safety codes and standards. Given the current priority to move America away from reliance on foreign oil and the potential of NGVs to play a significant role, Congress should restore funding for an NGV RDD&D program.

Fund the Clean Cities Program at \$20 million for fiscal year 2008

The Clean Cities program, which includes 89 public-private partnerships operating in 39 states, is one of the most effective means available for (1) educating the public about non-petroleum alternative fuels, (2) accelerating the market penetration of those fuels and vehicles and (3) laying the groundwork for public acceptance of hydrogen-based transportation. Given the need to move America away from dependence on petroleum-based fuels, increased funding for the Clean Cities program is a prudent and necessary investment. The Administration's request of \$9.593 million for Clean Cities in fiscal year 2008 is inadequate given the role that Clean Cities can play in reducing U.S. oil dependence, which is an Administration and Congressional priority. We recommend and support increasing the funding level to \$20 million.

Clarify that Biogas-to-Biomethane Production Projects Qualify Under Existing DOE-funded Programs

Biomethane is a biofuel with huge potential to offset petroleum reliance and reduce greenhouse gas emissions. Analysis previously conducted for DOE estimated that a feasible annual production capacity in the United States is about 1.25 quadrillion Btu or 10 billion gasoline-gallon-equivalent from landfills, animal waste and sewage alone. However, biomethane use has been overshadowed by efforts to produce renewable electricity and the promotion of ethanol. These efforts should be viewed as complementary. Federal programs for the production of all biofuels should be fuel neutral. As noted above, a huge potential exists in the United States to produce biomethane from landfill gas, animal and crop waste and sewage—an even cellulosic energy crops. In Europe, biomethane from cellulosic crops is being pursued as a viable alternative transportation fuel. There are a number of new funding programs (demonstrations, production grants, loan guarantees) enacted as part of the Energy Policy Act of 2005. These programs in some cases have been narrowly tailored to exclude applications that do not involve the production of electricity or, in the case of transportation fuels, fuels that are not ethanol or biodiesel. Congress

should continue to fund these programs but clarify that biomethane projects also qualify.

Conclusion

Mr. Chairman, natural gas vehicles help reduce America's use of foreign oil, improve the air quality in our urban areas, reduce the production of greenhouse gases, and pave the way for the more rapid introduction of hydrogen transportation technologies. We greatly appreciate your past support and consideration of these proposals.

PREPARED STATEMENT OF THE INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA

On behalf of the Independent Petroleum Association of America (IPAA), representing over 7,000 producers of domestic oil and natural gas, I would like to bring to your attention a matter of significant importance to America's independent oil and natural gas producers.

For the third consecutive year, the Administration's Budget request for the Department of Energy (DOE) for fiscal year 2008 proposed to eliminate the existing oil and gas technologies (core) programs, and in addition, proposed to repeal the Sec. 999 or non-conventional onshore/ultra-deep/small producer program authorized in the Energy Policy Act of 2005 (EPACT). In the "guidance" document provided to DOE by the Office of Management and Budget (OMB) for fiscal year 2007, and in accordance with the recent Continuing Resolution or "CR," the core program is assumed to be transitioning toward a "close-out" or shutting down of most of its current activities, allotting \$2.7 million to be applied for close-out purposes. Similarly, the OMB guidance document assumes that repeal of the Sec. 999 program is imminent. IPAA would urge the subcommittee to consider rectifying this "yo yo" funding effect that serves to undermine the deliverability of these two programs. Both the "core" program and the Sec. 999 program are of vital importance to independent producers, who develop 90 percent of all U.S. wells, producing 82 percent of American natural gas and 68 percent of all American oil. In fact, historically 85 percent of the focus of the existing or "core" program has been devoted to the exploration and production activities associated with the independent producer.

Although the Sec. 999 program received \$50 million in mandatory funding annually in EPACT, it is not structured to assume all of the functions of the core program, especially as they pertain to inherently governmental functions or providing grants to university researchers. The core program continues to house programmatic functions of equal importance to independent producers, such as gas hydrates, the Stripper Well Consortium, regulatory analysis, tech transfer and on-going university research and development projects. These efforts collectively represent important efforts related to development and deployment of technologies that assist in maintaining and increasing American oil and gas production. Therefore, IPAA requests that the core program be appropriated \$29.9 million to continue ongoing research and development activities for fiscal year 2008. Regarding the Sec. 999 program, IPAA requests that the program receive an additional \$25 million appropriation to apply to areas that are expected to be assumed by Sec. 999, such as enhanced oil recovery for small producers and the University Internship Program.

IPAA believes that during these times of elevated concerns over our increasing reliance on foreign sources of oil, now is not the time to diminish our efforts in the area of American produced oil and natural gas. We thank you for your prompt attention to this matter.

PREPARED STATEMENT OF AUSTIN ENERGY

This testimony supports funding for development and deployment of plug-in hybrid vehicles (PHEVs) within the Department of Energy's fiscal year 2008 budget request. Specifically, Austin Energy supports the \$80.6 million for Hybrid Electric Systems within the Vehicle Technologies account of the Advanced Energy Initiative of the Energy Efficiency and Renewable Energy budget. Within the Hybrid Electric Systems sub-accounts, Austin Energy supports funding of: (1) \$21 million for Vehicle and System simulation and testing; (2) \$41.8 million for Energy Storage Research and Development; (3) \$15.6 million for Advanced Power Electronics and Electric Motors Research and Development; and (4) \$2.1 million for the SBIR/STTR program. Austin would request that the Committee consider these funding requests within the fiscal year 2008 budget request: (1) \$10 million for Section 706 of the Energy Policy Act of 2005 ("EPACT")—Joint Flexible Fuel/Hybrid Commercialization Initiative; (2) \$15 million for Sections 711/911 of EPACT—Hybrid Vehicles for

system and component development for plug-in hybrid vehicles; and (3) \$2.5 million for Title 8 of EPACT—Advanced Vehicles for a fuel cell vehicle developed with a plug-in hybrid drive platform. Funding of \$27.5 million within these three areas should be included within the Hybrid Electric Systems sub-accounts section of the Vehicle Technologies account of the Energy Efficiency and Renewable Energy budget.

Austin Energy, the Nation's 10th largest community-owned electric utility, serves 360,000 customers within the City of Austin and Travis and Williamson Counties, Texas. Austin provides electricity to the capital city of Texas through a diverse generation mix of nuclear, coal, natural gas and renewable resources. Austin Energy has been nationally recognized for its Green Choice renewable electricity program. For the last four years Austin Energy has sold more renewable electricity, primarily wind, than any other utility in the country.

Austin Energy has also been a national leader in energy efficiency. Austin's Green Building program for both commercial and residential buildings has been a national model in the use of sustainable building technologies.

As the President has stated frequently in the last two years, the United States needs to break its addiction to imported supplies of petroleum. One of the principle uses of imported petroleum is to produce gasoline to power the transportation sector, particularly automobiles. Already popular hybrid vehicles demonstrate that there is now a technologically feasible way to power automobiles with both an internal combustion and an electric engine. The plug-in hybrid vehicle is a modification of current hybrids. Plug-in hybrids can be charged from the existing electrical grid by plugging the car into an ordinary wall socket while the internal combustion engine can be a flexible fuel engine that will run on domestically produced biofuels.

PHEVs will run on a dedicated electric charge for a number of miles (20–60, depending on the size of the battery pack), then shift to liquid fuel. The General Motors concept car, the Volt, unveiled at the recent Detroit Auto Show in January of this year, is an example of this type of vehicle. It has an all electric range of 40 miles.

PHEVs have the ability to significantly increase efficiency of fuel use over both conventional cars and existing hybrids. Instead of the constant switching between gasoline and electric power as is done in a hybrid today, the PHEV runs on electric power until the batteries are drained; only then does the fuel engine engage to power the car. If the driver's daily commute is within the electric range (20–60 miles), or if driving is within a small geographical area (city delivery trucks), then gasoline consumption is minimized, thus starting us down the road to reduced imports.

Austin Energy is convinced that PHEVs will be a significant contributor to reducing our nation's reliance on imported oil. Unlike other transportation alternatives, PHEVs require neither new fueling infrastructure nor driver behavioral changes. The infrastructure for PHEVs, standard electric sockets, already exists and Americans have already become accustomed to plugging-in Blackberries, cell-phones and lap-top computers. In the event that one forgets or is unable to plug-in the car, it will run as usual on gasoline or flexible fuel.

The funding initiatives recommended by the President in the DOE fiscal year 2008 budget submission will speed the day when PHEVs are widely available to American citizens. DOE's research will help achieve the battery technology needed to move the PHEV from a concept car to automobile dealer showrooms. Other DOE programs support plug-in hybrid technology developed as part of flexible fueling operations for cars as well as integrated within the advanced fuel cell vehicle. PHEV technology will complement any existing automobile fueling system or one envisioned for the future. The DOE budget submission will provide for deployment of PHEVs in demonstration activities to allow for different commercial applications of the vehicles. PHEV technology is adaptable to all vehicle platforms—from large trucks to commuter cars.

Austin Energy supports Congressional appropriations to increase the availability of PHEVs and demonstrate its capacity as a solution to our "oil addiction." Austin Energy is also willing to support the federal effort by overseeing a national grass-roots campaign to demonstrate the consumer market for PHEVs, a project underway for more than a year now.

Austin Energy's "Plug-In Partners" is an initiative to demonstrate to the automobile manufacturers that a consumer market already exists for PHEVs. Utility rebates and incentives, state, county and municipal government endorsements, and citizen petitions are evidence of an expanding interest in PHEVs. A key aspect of the Plug-In Partners campaign is the "soft" fleet orders. Fleet owners, both private and governmental, sign a pledge to strongly consider purchasing a certain number of PHEVs when available from an original equipment manufacturer. While the fleet

owner understands that the cars are not presently on line, the belief in the concept of a PHEV is sufficient for them to make the soft fleet order. This helps demonstrate a market to automakers. After one year of the Plug-In Partners campaign, over 8,400 vehicles have been pledged by soft fleet orders.

Austin Energy's Plug-In Partners campaign was founded nationally on January 24, 2006 at the National Press Club in Washington, DC. This past January, in the Russell Senate Office Building, Plug-In Partners celebrated its one year anniversary. Senator Orrin Hatch of Utah spoke at both events of the importance of PHEVs to ending our reliance on foreign oil. The Plug-In Partners campaign has been joined by more than 500 partners in 41 states, including the cities of Austin, Albuquerque, Aspen, Baltimore, Boston, Boulder, Chicago, Cleveland, Colorado Springs, Dallas, Fort Worth, Denver, Des Moines, Honolulu, Las Vegas, Los Angeles, Kansas City, MO, Milwaukee, Minneapolis, Philadelphia, Phoenix, Portland, OR, Sacramento, Salt Lake City, San Antonio, San Francisco and Seattle. The New York State Energy & Research Development Authority (NYSERDA), American Corn Growers Association, Soybean Producers of America, Alliance To Save Energy, American Council on Renewable Energy, American Wind Energy Association, Consumer Federation of America, Energy Future Coalition, Environmental and Energy Study Institute and the South Shore Clean Cities of Northeast Indiana support the Plug-In Partners campaign. The Center for American Progress and Set America Free are among the many public interest groups that are members of the coalition. Finally, Plug-In Partners has been endorsed by the American Public Power Association and almost 200 of its members around the country as well as the Edison Electric Institute, National Rural Electric Cooperative Association and the Washington Public Utility District Association.

Austin Energy has also committed \$1 million for rebates to Austin Energy customers who purchase plug-in hybrids when they become available.

The Congress, by funding DOE initiatives to develop and deploy PHEVs, will help speed the commercialization by auto manufacturers and will be a significant step in lessening American dependence on imported oil.

PREPARED STATEMENT OF THE NATIONAL ASSOCIATION OF STATE ENERGY OFFICIALS

Mr. Chairman and members of the Subcommittee, I am Peter Smith of New York and Chair of the National Association of State Energy Officials (NASEO). NASEO is submitting this testimony in support of funding for a variety of U.S. Department of Energy programs. Specifically, we are testifying in support of no less than \$80 million for the State Energy Program (SEP). We wanted to take this opportunity to thank the Subcommittee for its support for an increase for this program in fiscal year 2007. We were also pleased that the Subcommittee added \$300 million to the final fiscal year 2007 Continuing Resolution for energy efficiency and renewable energy programs. Recently, 30 members of the Senate wrote to you to fund SEP at least at \$74 million and Weatherization at a \$275 million level in fiscal year 2008. SEP is the most successful program operated by DOE in this area. Within an \$80 million funding level for SEP we would support the Administration's proposed \$10.5 million competitive program, but we do not support such an effort at the proposed funding level of \$35 million for the core SEP activities. SEP is focused on direct energy project development, where most of the resources are expended. SEP has set a standard for state-federal cooperation and matching funds to achieve critical federal and state energy goals. We also support \$300 million for the Weatherization Assistance Program (WAP). These programs are successful and have a strong record of delivering savings to low-income Americans, homeowners, businesses, and industry. We also support the increase proposed in the President's budget for the Energy Information Administration (EIA) to \$105 million, including an increase of \$600,000 for EIA's State Heating Oil and Propane Program, in order to cover the added costs of increasing the frequency of information collection (to weekly), the addition of natural gas, and increasing the number of state participants. EIA's new state-by-state data is very helpful. EIA funding is a critical piece of energy emergency preparedness and response. This funding will permit EIA to maintain key Forms 182, 856 and 767 (involving crude oil and emissions). NASEO continues to support funding for a variety of critical deployment programs, including Building Codes Training and Assistance (\$7.5 million), Rebuild America (\$3.8 million), Energy Star (\$6.8 million) and Clean Cities (\$9.6 million). NASEO supports funding for the Office of Electricity Delivery and Energy Reliability, at least at the fiscal year 2006 request of \$161.9 million, with specific funding for the Division of Infrastructure Security and Energy Restoration of \$18 million, which funds critical energy assurance activities. We strongly support the R&D function, Operations and Analysis and Distributed En-

ergy activities within this office. The industries program should be funded at a \$74.8 million level, equal to the fiscal year 2005 levels, to promote efficiency efforts and to maintain U.S. manufacturing jobs, especially in light of the loss of millions of these jobs in recent years. Proposed cuts in these programs are counter-productive and are detrimental to a balanced national energy policy. We remain concerned that a number of programs authorized in the Energy Policy Act of 2005 (EPACT 2005) have received no funding. Of special interest are sections 124, 125, 126, and 128 of EPACT 2005. We were pleased that funding has been provided for the pilot program under Section 140 of EPACT 2005.

Over the past five years, both oil and natural gas prices have been rising in response to international events, increased domestic use and the result of the 2005 hurricanes. We expect \$60 oil to continue for an extended period of time, with an expanded problem as summer approaches. Gasoline prices have been spiking recently. In addition, we now have quantifiable evidence of the success of the SEP program, which demonstrates the unparalleled savings and return on investment to the federal taxpayer of SEP. Every state gets an SEP grant and all states, the District of Columbia and territories support the program.

In January 2003, Oak Ridge National Laboratory (ORNL) completed a study and concluded, "The impressive savings and emissions reductions numbers, ratios of savings to funding, and payback periods . . . indicate that the State Energy Program is operating effectively and is having a substantial positive impact on the nation's energy situation." ORNL updated that study and found that \$1 in SEP funding yields: (1) \$7.22 in annual energy cost savings; (2) \$10.71 in leveraged funding from the states and private sector in 18 types of project areas; (3) annual energy savings of 47,593,409 million source BTUs; and (4) annual cost savings of \$333,623,619. The annual cost-effective emissions reductions associated with the energy savings are equally significant: (1) Carbon—826,049 metric tons; (2) VOCs—135.8 metric tons; (3) NO_x—6,211 metric tons; (4) fine particulate matter (PM₁₀)—160 metric tons; (5) SO₂—8,491 metric tons; and (6) CO—1,000 metric tons. The report done by DOE's Inspector General in April 2006 criticized DOE monitoring of SEP but affirmed that state actions were consistent with the applicable law and regulation. State monitoring and verification has confirmed SEP's effectiveness.

State Energy Program Special Projects and Other Deployment Programs.—Through fiscal year 2005, SEP Special Projects provided matching grants to states to conduct innovative project development. It had been operated for ten years and has produced enormous results in every state in the United States. We could support funding of DOE's new, proposed SEP competitive program, but only within an \$80 million SEP appropriation. The other deployment programs, including Rebuild America, Building Codes Training and Assistance, Clean Cities and Energy Star, should receive funding of \$27.7 million in fiscal year 2008.

Industrial Energy Program.—A funding increase to a level of \$74.8 million for the Industrial Technologies Program (ITP) is warranted. This is a public-private partnership in which industry and the states work with the Department of Energy to jointly fund cutting-edge research in the energy area. The results have been reduced energy consumption, reduced environmental impacts and increased competitive advantage of manufacturers (which is more than one-third of U.S. energy use). The states play a major role working with industry and DOE in the program to ensure economic development in our states and to try to ensure that domestic jobs are preserved.

Examples of Successful State Energy Program Activities.—The states have implemented thousands of projects. Here are a few representative examples.

California.—The California Energy Commission has operated energy programs in virtually every sector of the economy. The state has upgraded residential and non-residential building codes, developed a school energy efficiency financing program, industrial partnerships in the food and waste industry, instituted a new replacement program for school buses utilizing the newest natural gas, advanced diesel and hybrid technologies. The buildings program has reduced consumption by enormous amounts over the past few years, through alternative financing programs and outreach. The state has worked closely with the western governors to implement a variety of new programs. California's greenhouse gas mitigation plans and a new solar initiative are moving forward.

Colorado.—The state has initiated new energy legislation this year and is greatly expanding both renewable energy and ethanol/biofuels development. In addition, the state is working to assist new and existing building energy efficiency projects. Fifty new building projects have received assistance and the state has arranged \$170 million of investments in 80 performance contracting projects.

Hawaii.—Three major pieces of energy legislation were passed in 2006. The state energy office is working with state agencies to satisfy LEED Silver requirements

and utilize Energy Star products. The state has been promoting ethanol and bio-diesel development, developing a new Hawaii Energy Strategy in 2007, developing a major hydrogen energy program and implementing a large Renewable Portfolio Standard. The energy efficient buildings program has saved \$10 million annually and the "Green Business Program" has saved \$175 in water, energy and waste minimization for every \$1 in SEP funds invested.

Idaho.—In Idaho the state has rated homes utilizing the Energy Star tools and signed-up 93 new builders to participate in the program. An aggressive energy efficiency financing program has produced more than 2,500 loans, totaling over \$16 million, resulting in significant energy savings. The agricultural energy program has focused on reducing irrigation costs and usage to improve agricultural productivity and costs. The state has initiated a new industrial program.

Kentucky.—The programs supported by SEP have assisted in construction of high energy performance K-12 schools, developed \$45 million in energy savings performance contracts and funded energy efficiency and renewable energy projects at universities and local governments. The state is a leader in promoting Energy Star and they have an R&D grant program for energy efficiency and renewable energy.

Louisiana.—The state energy office within the Department of Natural Resources is still heavily involved in post-Katrina relief. In addition, the state operates a cash rebate program of up to \$2,000 for homeowner energy efficiency improvements. Thus far, almost 16,000 rebates and loans have been issued totaling \$21 million, and leveraging \$199 million more in private funds. The state has also been expanding renewable energy development, working to enact stronger energy codes and promoting alternative transportation fuels.

Mississippi.—The state operates an energy investment loan program targeted to schools, hospitals and manufacturers. They are focused on reducing energy consumption in state and school facilities and they have developed 50 energy management plans. Mississippi has been very active in the Energy Star program and has been attempting to conduct post-Katrina reconstruction in an energy efficient manner. They have also developed a rural business opportunity program.

Missouri.—The energy office in Missouri has been operating a low-interest energy efficiency loan program for school districts, colleges, universities and local governments. Thus far, public entities have saved more than \$75 million each year, with more than 400 projects. The state energy office has also worked with the Public Utility Commission and the utilities within the State to get \$20 million invested in residential and commercial energy efficiency programs. A new revolving loan for bio-diesel has also been initiated.

New Jersey.—The state's Clean Energy Program has invested over \$124 million thus far with resulting bill reductions to consumers projected to be almost \$2 billion. 36 MW of solar has already been installed, and the state is implementing rebates, net metering, standardized interconnections and a Solar Renewable Energy Certificate trading program. The state also has an alternative fuel, bio-heat and bio-diesel rebate program.

New Mexico.—With new state legislation, the state energy office is supporting and expanding renewable energy usage, tax incentives for hybrid vehicles, school energy efficiency programs, technical assistance to the wind and solar industries, and expansion of geothermal resources. The state has arranged approximately 40 energy performance contracts with annual energy savings in the millions. There has also been an expansion in the use of ethanol and bio-fuels.

North Dakota.—As Kim Christianson testified before Chairman Dorgan's Subcommittee on Energy on February 12, 2007, the state energy office is supporting programs for wind, ethanol and bio-diesel promotion. 578 MW of wind projects have been developed, with nine ethanol and bio-diesel plants in various stages of development. Projects in 412 buildings has led to \$24 million in energy efficiency improvements. The state has also funded energy efficiency programs for local builders, schools and for lower income households.

Rhode Island.—The state has reorganized and elevated the energy agency, instituted new renewable energy and energy efficiency programs, joined with the neighboring states in expanded cooperative efforts and also focused on energy emergency preparedness.

South Dakota.—The state has focused on supporting wind, ethanol and bio-diesel development. In addition, a matching energy efficiency grant program has been established for heating controls, lighting, etc. The state also operates an energy loan program for state-run facilities and a technical energy analysis program for those facilities.

Texas.—The Texas Energy Office's Loan Star program has long produced great success by reducing building energy consumption and taxpayers' energy costs through efficient operation of public buildings. This saved taxpayers more than \$200

million through energy efficiency projects. Over the next 20 years, Texas estimates that the program will save taxpayers over \$500 million. In another example, the state promoted the use of “sleep” software for computers, which is now used on 136,000 school computers, saving 42 million kWh and reducing energy costs by \$3 million annually. The state has initiated the Texas Emissions Reduction Plan/Texas Energy Partnership in 41 urban counties to reduce emissions through cost-effective energy efficiency projects.

Utah.—SEP funds have been utilized to support solar and wind programs, as well as implementation of a stronger energy building code through training programs. The state has also supported local government energy efficiency and has developed a public building energy efficiency pilot.

Washington.—The state energy agency works with the Northwest Energy Efficiency Alliance to target over \$20 million in funding for energy efficiency and renewable energy projects. The state is also closely involved in energy emergency preparedness and response. The Resource Efficiency Managers Program, supported by SEP, conducts on-site training for energy savings. For example, working with Ft. Lewis and Puget Sound naval facilities, the program has saved over \$2.5 million. A major focus on energy efficiency programs in buildings has been successful.

West Virginia.—The energy office has focused on industrial energy programs savings, including identified savings of \$3.7 million in 2006 alone. Energy projects in the industrial sector have totaled \$33 million during the past 10 years. The state has also supported dramatic expansion of renewable energy programs and is projecting \$3 million in school energy cost savings each year through energy efficiency programs. Other project areas include lighting demonstrations and energy audits, poultry house bio-filters, building energy use in conjunction with West Virginia University and innovative energy technology opportunities in conjunction with Marshall University.

PREPARED STATEMENT OF BP EXPLORATION (ALASKA), INC.

GAS HYDRATE RESOURCE ASSESSMENT ON THE NORTH SLOPE OF ALASKA, APRIL 2007

The 2002 through present cooperative research between BP Exploration (Alaska), Inc. (BPXA) and the U.S. Department of Energy (DOE) in collaboration with the U.S. Geological Survey is helping to assess Alaska North Slope (ANS) methane hydrate resource potential. Since gas hydrate resource potential is unconventional and unproven, industry would not be able to perform this research without external support. Industry provides shallow 3D seismic and well data and access to infrastructure and DOE provides major research funding. This region is unique in that it combines known gas hydrate presence and existing production infrastructure. Continued full funding of the DOE Methane Hydrate program authorized by the Methane Hydrate Acts of 2000 and 2005 is essential to the success of this research. Reservoir characterization, reservoir modeling, and associated studies culminated in the drilling of an approximately \$4.3MM Stratigraphic Test well, MtElbert-01, in early 2007. This well successfully acquired critical gas hydrate-bearing formation and fluid data, which will help mitigate potential recoverable resource uncertainty. Future production testing is a key goal of the Federal Research and Development program and may follow, but this remains to be decided following Stratigraphic Test data analyses. Future studies, if approved, would acquire additional static data and would include production testing, likely from a gravel pad within production infrastructure.

Methane hydrate may contain a significant portion of world gas resources within offshore and onshore arctic regions petroleum systems. In the United States, accumulations of gas hydrate occur within pressure-temperature stability regions in both offshore and also onshore near-permafrost regions. USGS probabilistic estimates indicate that clathrate hydrate may contain a mean of 590 TCF in-place ANS gas resources (Figure 1). Over 33 TCF in-place potential gas hydrate resources are interpreted within shallow sand reservoirs beneath ANS production infrastructure within the Eileen trend (Figure 2). Regional reservoir modeling studies indicate that from 0 to 12 TCF of this 33 TCF in-place might potentially be recoverable, but future exploitation of gas hydrate would require developing feasible, safe, and environmentally-benign production technology, initially within areas of industry infrastructure. In the United States, the ANS onshore and Gulf of Mexico (GOM) offshore are currently known to favorably combine these factors. In addition to the clear benefits that would accrue to the State of Alaska through realization of gas hydrate as an energy resource, the information and technology being developed in this onshore ANS program will be an important component to assessing the possible productivity

of the potentially much larger marine hydrate resource. The resource potential of gas hydrate remains unproven, but if proven, could lead to greater U.S. energy independence.

Although up to 100 TCF in-place gas may be trapped within the gas hydrate-bearing formations beneath existing ANS infrastructure, it has been primarily known as a shallow gas drilling hazard to the hundreds of well penetrations targeting deeper oil-bearing formations and has drawn little resource attention due to no ANS gas export infrastructure and unknown potential productivity. There remain significant challenges in quantifying the fraction of these in-place resources that might eventually become a technically-feasible or possibly a commercial natural gas reserve.

If gas can be technically produced from gas hydrate and if future studies help prove production capability at economically viable rates, then methane dissociated from ANS gas hydrate could help supplement fuel-gas, provide additional lean-gas for reservoir energy pressure support, sustain long-term production of portions of the geographically-coincident 20–25 billion barrels viscous oil resource, and/or potentially supplement conventional export-gas in the longer term. Continued government-industry collaborative support of this research is needed to help determine this future resource potential.

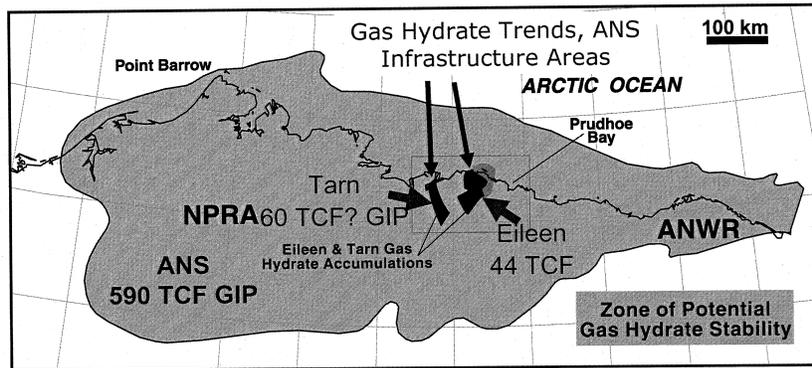


FIGURE 1.—ANS Gas Hydrate Stability Zone Extent. The USGS has estimated 590 TCF methane in place in hydrate form in this region (Courtesy USGS).

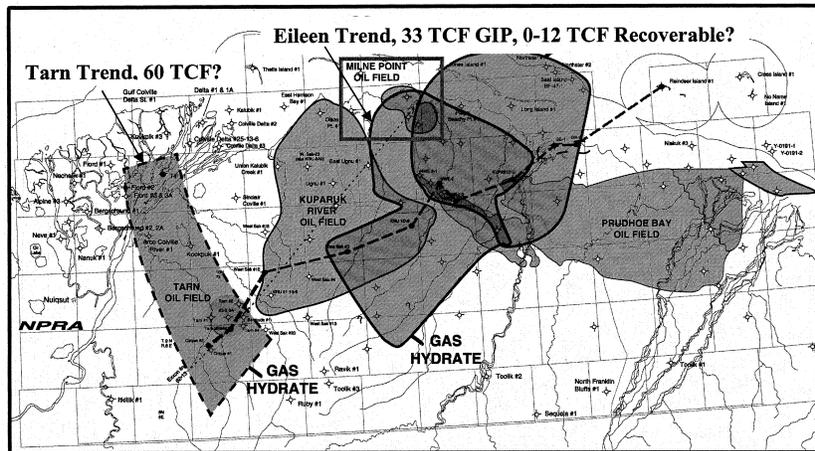


FIGURE 2.—Eileen and Tarn Gas Hydrate Trends and ANS Field Infrastructure (modified after Collett, 1998).

PREPARED STATEMENT OF THE ALLIANCE FOR MATERIALS MANUFACTURING EXCELLENCE

AMMEX organizations include the basic materials manufacturing sector (aluminum, chemicals, forest products, glass, metal casting, steel) in the U.S. economy along with several stakeholders in materials manufacturing, such as the Northeast Midwest Institute, the National Association of State Energy Officials and the American Council for an Energy-Efficient Economy. We are writing to urge Congress to restore funding to the Industrial Technologies Program (ITP) at the Department of Energy at a level of \$125 million dollars and to restore the structure of the program to one that emphasizes new process development in all six materials industries as opposed to cross-cutting research.

ITP is a true public-private partnership. DOE and materials manufacturers jointly fund cutting-edge research that addresses the needs of the Nation and materials manufacturers. All projects have the shared goals of reducing energy consumption, reducing environmental impact and increasing competitive advantage of U.S. materials manufacturers. The program is unique because we select only projects with "dual benefits"—a public benefit such as reduced emissions or petroleum use, and an industry benefit such as a more efficient process.

The Department of Energy's Industrial Technology Program (ITP) and U.S. materials manufacturers have a long history of joining forces to develop and deploy new technologies which save energy, improve our environment and enable U.S. materials manufacturers to have the world's most advanced technology on the plant floor.

The chart below is representative of the gains in energy efficiency made by materials manufacturers since 1990, i.e., during the time they have partnered with DOE.

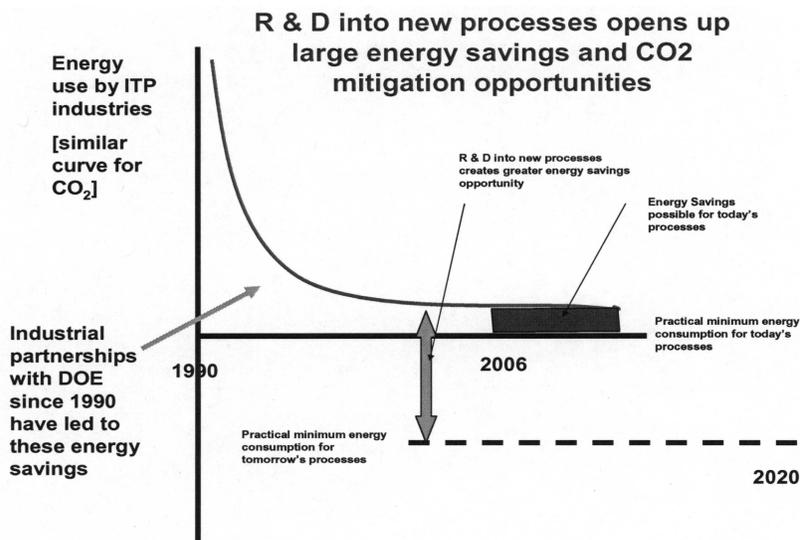
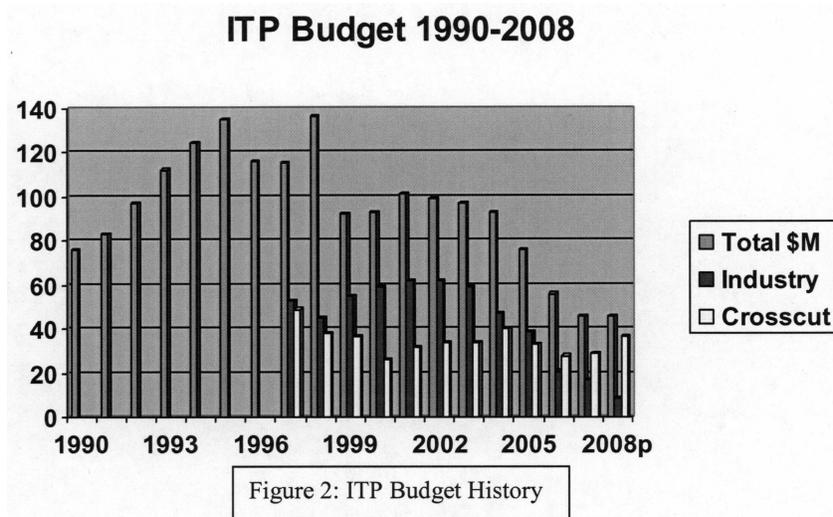


Figure 1: Materials Manufacturers have greatly reduced energy use since 1990 because of their co-investment with DOE

This chart also shows that materials manufacturers have become very efficient for the processes they operate today and that to make the type of gains in the future that have been seen since 1990, new process development is required.

The chart below shows the funding history of the DOE ITP program since 1990.



In the years 1990–1996 the program consisted largely of “industry funding” and averaged \$100 million annually. There were some “cross-cutting” projects in this time, but they were a small percentage of the total. Even in the years 1999–2003, spending on industry projects [black] vs. crosscutting [white] was approximately 2:1.

Beyond 2003, the ITP program was not only the target of drastic cuts but remaining funds were rebalanced to favor crosscutting vs. industry specific projects. As shown in Figure 1, the level of energy efficiency of materials industries dictates that new process development (“industry specific” projects) are required vs. the cross-cutting (incremental) projects.

Our request entails two parts:

—A return to a total program level of \$125 million.

—A re-structuring of the program so as to return to the structure that was so successful from 1990–2003—a focus on new process development via industry specific research with at least a ratio of 2:1 of new process research to crosscutting (incremental) investments.

AMMEX members have identified their top new process development concepts (not in priority order) which would be pursued at the funding levels and structure defined above;

Aluminum

Improved, energy-efficient burners and furnaces for aluminum melting.
Improved energy efficiency and recovery rates for recycling technologies.

Chemicals

Development of alternative feedstocks for the chemical industry to reduce dependence on petroleum and natural gas derived feedstocks.

Nano-manufacturing scale-up methodologies for key unit operations: synthesis, separation, purification, stabilization, and assembly.

Development of low-energy, low-capital membrane or hybrid separations technology.

Glass

Submerged Combustion Melter.

Waste Heat Recovery and Use as Electrical or Chemical Energy.

Low Residence Time Glass Refining Technologies.

Forest Products

Advanced water removal and high efficiency pulping.

Gasification of Spent Pulping Liquors and Biomass Residuals.

Metal Casting

Simulation of Dimensional Changes and Hot Tears.

Engineered Coatings for Aluminum Pressure Dies.

Developing a lightweight production cast aluminum metal matrix composite alloy.

Steel

Ironmaking by Molten Oxide Electrolysis.
Ironmaking by Flash Smelting using Hydrogen.
Demonstration of the Paired Straight Hearth Furnace Process.

AMMEX MEMBER ORGANIZATIONS

Kurtz Bros.	West Virginia Development Office
American Iron and Steel Institute	Weyerhaeuser
Glass Manufacturing Industry Council	Columbia Steel Casting Co., Inc.
Aluminum Association	Cunningham Pattern & Engineering, Inc.
Waupaca	GSC Investment Castings, Machining & Assembly
American Foundry Society	Delvest, Inc.
Chemical Industry VISION 2020 Technology Partnership	Fan Steel
American Forest and Paper Association	Weatherly Casting & Machine Co.
Hyatt Die Cast	Citation Innovative Metal Components
North American Die Casting Association	Magma
National Association of State Energy Officials	Atchison Casting
Northeast Midwest Institute	Yankee Casting
Gibbs Die Casting	Saint Clair Die Casting, LLC
Intermet Corning Glass	Ahresty
Smith Foundry Co.	The BOC Group
Anheuser Busch—Longhorn Glass	Saint Paul Metalcraft Inc.
Glass Service, Inc.	Thakar Aluminum Corporation
Carteret Die Casting Corp	Eclipse Inc./Combustion Tec
Leone Industries Glass Packaging	Briggs & Stratton
North Carolina Industries of the Future	Johns Manville a Berkshire Hathaway Company
Armstrong	University Center for Glass Research
North Carolina Industries of the Future	Owens Corning
Diagnostic Instrumentation & Analysis Laboratory (Mississippi State Univ.)	CPI Cast Products Inc.
Society for Glass Science and Practices	Pennsylvania Industries of the Future
Praxair, Inc.	Callen Manufacturing Corporation
Siemens Energy and Automation, Inc.	CertainTeed
Gas Technology Institute	ABCO Diecasters Inc.
Nucast	Energy Industries of Ohio
Varicast	U.S. Silica Company
Clinkenbeard	Borax
AVALON Precision Casting Company	A&B Die Casting
Industries of the Future West Virginia	PPG Industries
Visteon	Brillcast, Inc.
Bremen Castings Incorporated	Durametal
Savannah River Technology Center	May Foundry & Machine
Indiana Industries of the future	NEENAH Foundry Company
Bridesburg Foundry	Citation Innovative Metal Components
Oshkosh	SECAT
Federal Bronze, A Division of the One Source Casting Corporation	

PREPARED STATEMENT OF IMPACT TECHNOLOGIES LLC

Dear Honorable Senators: I am a citizen, tax payer, small business owner, engineer, inventor and developer of new technology covering several industries. I am also a small oil producer and investor in the oil and gas industry. I have worked for a very large (major) oil and gas company (Chevron) and smaller independent oil and gas producers. After establishing my own companies I have obtained bank financing, industry financing, angel financing, personal investments, state investment groups and directly with the U.S. Department of Energy (DOE) and other groups supported by DOE funding, including the Petroleum Technology Transfer Council (PTTC), Stripper Well Consortium (SWC) and several universities. In fact, I have invested my time by (previously) serving on the governing boards of the SWC and PTTC.

The return on public investments (DOE, NASA, others) in properly vetted technologies is tremendous. I have found that industry will not support a new tech-

nology unless it is proven. For higher technologies that proving process is expensive and risky—too risky or requiring too long a time frame for all banks, most angel financing and too small for venture capital groups. I have invested significant personal monies in my own projects, but that will only go so far in developing significant technologies. That investment GAP must be filled (fully or partially) by public investment yielding tremendous returns in dollars and in public good.

Industry wide, that tremendous return on public investment through DOE has included the coal bed methane resource development (measured in the trillion of cubic feet of natural gas) for the public benefit. Unconventional oil and gas shale development will only occur with DOE support of key technologies. The public investment of the DOE (directly and through SWC) has allowed technologies to be developed and tested so that private groups can then invest to take the products commercial. Most of these technologies would not become commercial if not for this public investment boost.

Specifically and on a more direct and personal level, approximately \$170,000 in DOE and SWC (cost share) funds has allowed Impact to design and prove of a new, patented pump technology that will gross an estimated \$305 million over 10 years, generating taxes and jobs. This new pump technology will impact the oil and gas, construction, demolition, environmental and job shop industries. It will be licensed to existing pump manufacturers after the 5 years. That small, but significant, DOE and SWC investment will allow private angel investors to see proven technology and feel comfortable enough to invest and take the company to the next commercialization level. It will yield a direct return on investment of over 1,800:1 not counting the benefits it will generate for the impacted industries! It would not have occurred without DOE and SWC funding.

A second technology now being commercialized by Impact is based on a \$180,000 (cost share) investment from DOE and the SWC plus (funds used to leverage other state funds including) Oklahoma's OCAST investment group. With that public investment Impact has built a patented motor prototype and is now building on that success to commercialize these new motors for drilling. This new motor technology will impact the oil and gas, environmental, geothermal, resource mining, utilities and construction industries. That DOE and SWC investment will generate an estimated \$228 million over 10 years, based on our conservative business plan forecasts. That is a return on public investment of over 1,300:1 not including the benefits to the impacted industries and the public through taxes, jobs and improved competition!

A third technology Impact has developed with others is the SPI Gel Technology which is directly a result of the Department of Energy's investment in the Stripper Well Consortium. This is a new patent-pending silicate based gel for reducing water production and pipe repairs. It is environmentally safe for fresh water applications. We are in the field test stage of this technology right now and will license it out later this year. The public investment of \$203,000 (cost share) will return over a 1,000:1 return in gross sales and other benefits to society through jobs, taxes and continued resource production. This technology would not be developed without DOE and SWC funds.

I have personally seen the investments of the DOE directly in and through the SWC and PTTC on small oil and gas producers. These new technologies are significant and will have a major impact on the public energy resources. These investments are small but have a extremely high return (over 1,000:1) and should be continued. These public funds fill the gap between concept and private funding to commercialize good ideas.

PREPARED STATEMENT OF THE NATIONAL MINING ASSOCIATION (NMA)

NMA RECOMMENDATIONS

Department Of Energy (DOE)

\$108 million for the FutureGen project; \$257 million in previously appropriated funds should be designated for FutureGen; \$300 million for base coal research and development programs; \$273 million for the Clean Coal Power Initiative (CCPI); \$8.4 million for the loan guarantee office and \$9 billion cap on federal loan guarantee commitments; \$15 million for DOE's participation in the Asia-Pacific Partnership on Clean Development and Climate.

U.S. Army Corps Of Engineers

Civil Works Program.—\$180 million for the Regulatory Program. See the table below for NMA's list of priority lock and dam projects and recommendations for levels of funding required for their completion.

BACKGROUND

Office of Fossil Energy

NMA strongly supports: the \$108 million requested for the FutureGen project; as a zero cost action, the \$257 million in unused Clean Coal Technology Program funds should be deferred to fiscal year 2009 for the FutureGen project (this action is essential to maintaining private sector cost-share and financing construction); and recommends at least \$300 million be appropriated for base coal research and development programs.

In addition, NMA recommends that CCPI be funded at a level of \$273 million, which would enable DOE to conduct a third solicitation targeting advanced technology systems that capture carbon dioxide for sequestration.

The FutureGen public-private partnership will design and build, in the United States, the first-of-a-kind commercial-scale power plant that will provide the technological capability to: (1) capture and permanently store 90 percent or more of the plant's CO₂ emissions; (2) power about 150,000 American homes with the clean electricity it generates from coal; and (3) co-produce hydrogen and potentially other useful by-products from coal.

The FutureGen Industrial Alliance, comprised of the largest coal producers and users in the world, has signed a cooperative agreement with the DOE to provide \$250 million toward the cost of the project. The alliance members have extensive experience in building large-scale coal-fueled projects, while meeting budget and performance requirements. The alliance remains committed to moving the FutureGen project to its targeted completion in 2012, provided a multi-year funding scenario is secure, and its funding does not come at the expense of other coal research and demonstration programs.

Technological advancements achieved in the base coal research and demonstration programs such as gasification, advanced turbines, and carbon sequestration, provide the component technologies that will ultimately be integrated into the FutureGen project. NMA believes these programs should be funded at a level of at least \$300 million (which should include \$109 for carbon sequestration—\$30 million above the president's fiscal year 2008 budget request). In addition, the advanced turbine program should be funded at \$40 million instead of the requested level of \$22 million. The increase in funding for these and other programs will ensure the FutureGen project meets the intended goals.

In addition, NMA recommends a \$3 million level of funding for the Center for Advanced Separation Technology (CAST), which is led by a consortium of seven universities with mining research programs. The advanced separation program conducts high-risk fundamental research which will lead to revolutionary advances in separation processes for the coal industry and develop technologies that crosscut the full spectrum of mining and minerals industries.

Asia-Pacific Partnership on Clean Development and Climate (APP)

NMA supports the administration's total request of \$52 million for this partnership and specifically, the request of \$15 million to fund the U.S. DOE's participation.

The APP will spur development of cutting edge technologies and practices that support economic growth while reducing emissions, including greenhouse gas emissions. It will result in expansion of market opportunities for U.S. mining and equipment companies and other U.S. businesses.

The APP, involving the United States, Australia, China, India, Japan and South Korea, is important for a number of reasons:

- It will result in real emissions reductions. With the participation by China and India, APP is the only international agreement addressing rapid emissions growth in the developing world, which is forecast to surpass emissions of industrialized nations in 2010. APP is a voluntary, technology-based approach to emissions reduction geared towards future economic growth and energy security and will be more effective than unrealistic mandates or treaties.
- It builds on Methane-to-Markets and other successful programs that reduce greenhouse gas emissions. The U.S. coal industry has captured and re-used 308 billion cubic feet of coal mine methane—the equivalent of removing 40 million automobiles per year from the roads. APP, working with the EPA's Methane-

to-Markets program will use U.S. experience and expertise to accelerate large-scale capture and recycling of methane in China and India.

—It helps preserve coal as an important energy source. The United States, China, India and Japan will be at the center of a significant rise in population, economic activity and energy use in the next 50 years. Coal is essential to sustaining America's competitiveness and vitality in a changing world, as it is in China and India. APP supports improvements in efficiency in both coal mining and use through the acceleration of clean coal technologies, industrial technology strategic planning and energy efficiency best practices.

—It creates new markets for U.S. companies in the emerging economies of China and India.

U.S. Army Corps Of Engineers

Regulatory Program.— NMA supports the Administration's request of \$180 million for administering the Corps' Clean Water Act (CWA), Section 404 permit program and for implementing the Memorandum of Understanding (MOU).

The Corps' Regulatory Branch plays a key role in the U.S. economy since the Corps currently authorizes approximately \$200 billion of economic activity through its regulatory program annually. The ability to plan and finance mining operations depends on the ability to obtain CWA Section 404 permits issued by the Corps within a predictable timeframe. In addition, NMA recommends that a portion of such regulatory program funding be used for implementing the MOU issued on February 10, 2005, by the Corps, the U.S. Office of Surface Mining, EPA and the U.S. Fish and Wildlife Service. The MOU encourages a coordinated review and processing of surface coal mining applications requiring CWA Section 404 permits.

Below is a table indicating NMA's fiscal year 2008 Priority Navigation Projects.

NMA FISCAL YEAR 2008 PRIORITY NAVIGATION PROJECTS

Construction	Fiscal Year 2007 Request	Fiscal Year 2008 Request	NMA Recommendations
Robert C. Byrd Lock and Dams Ohio River, OH/WV	\$1,800,000	\$1,000,000	\$1,800,000
Kentucky River Lock Addition, Tennessee River, KY .....	.....	\$52,000,000	\$52,000,000
Marmet Lock and Dam, Kanawha River, WV	\$50,800,000	\$25,000,000	\$27,000,000
McAlpine Locks and Dams, Ohio River, IN/KY	\$70,000,000	\$45,000,000	\$45,000,000
Locks and Dams 2, 3, 4, Monongahela River, PA	\$62,772,000	\$70,300,000	\$70,300,000
J.T. Myers Locks and Dams, Ohio River, IN/KY .....	.....	.....	\$10,500,000
Olmsted Locks and Dams, Ohio River, IL/KY	\$110,000,000	\$104,000,000	\$104,000,000
Winfield Lock and Dam, Kanawha River, WV	\$4,300,000	.....	.....
Emsworth Dam, Ohio River, PA	\$17,000,000	\$43,000,000	\$43,000,000
Greenup Lock and Dam, Ohio River, KY/OH .....	.....	.....	\$12,100,000

PREPARED STATEMENT OF THE AMERICAN NUCLEAR SOCIETY

Chairman Dorgan, Ranking Member Domenici, members of the subcommittee, on behalf of the more than 10,000 members of the American Nuclear Society, I am pleased to provide testimony on fiscal year 2008 appropriations for the U.S. Department of Energy.

First, as you know, ANS represents a diverse cadre of nuclear professionals. As such, our members' opinions on nuclear issues are often wide-ranging, and perhaps sometimes different from the subcommittee. However, the ANS truly appreciates the thoughtful and deliberate manner in which the subcommittee approaches issues related to nuclear energy, science, and technology.

For fiscal year 2008, the ANS supports a strengthened portfolio of Federal investments in nuclear energy, science and technology. Specifically, the ANS recommends that the subcommittee fully fund the DOE Office of Nuclear Energy's fiscal year 2008 request, including the Advanced Fuel Cycle Initiative, the Nuclear Hydrogen Initiative, and the Generation IV reactor programs.

The ANS also supports full funding for the Yucca Mountain repository program, so that DOE can proceed with its plans to submit a license application to the NRC by June 2008, and \$913 million for the Nuclear Regulatory Commission.

The ANS is aware that the Bush administration has proposed terminating funding for the University Reactor Infrastructure and Education Assistance program line in its fiscal year 2007 and 2008 budget requests.

In response, the ANS created the Special Committee on Federal Investment in Nuclear Education to review the issues and make recommendations on the issue.

This report, entitled “Nuclear’s Human Element,” focuses on longer term issues that need to be addressed by Congress and the executive branch in order to ensure the health and vitality of the U.S. nuclear science and engineering enterprise. It has generated a lot of positive discussion within the nuclear community, and we hope the subcommittee will use it to help guide the scope and structure of future Federal investments in this area.

For fiscal year 2008, the ANS supports the request by the Nuclear Engineering Department Heads Organization (NEDHO) and the National Organization of Test, Research, and Training Reactors (TRTR) to provide \$50.1 million in fiscal year 2008 in funding for university-based nuclear engineering programs, the level authorized by the Energy Policy Act of 2005.

The ANS is aware that the DOE Office of Nuclear Energy has indicated its desire to continue funding university programs through its existing R&D programs and we recognize the debate over funding vehicles is more nuanced than “line-item or nothing.” However, we agree with NEDHO and TRTR that, regardless of the mechanism through which it is provided, DOE funding for university programs must be predictable, growth-oriented, and focused on longer-term scientific and workforce development milestones.

Regarding the Global Nuclear Energy Partnership (GNEP), the ANS recognizes that there are concerns about the aggregate costs and technological pathways associated with implementation of the GNEP initiative. However, the Society supports the administration’s proposed increase in fiscal year 2008 funding for the Advanced Fuel Cycle Initiative which will allow the pertinent cost and design questions to be explored at an expedient pace.

Finally, the ANS supports a fiscal year 2008 funding level of \$100 million for the Next-Generation Nuclear Plant, funded through the Generation IV Nuclear Energy Systems Initiative account. The NGNP holds great promise to employ nuclear energy to meet U.S. hydrogen production and industrial process heat needs, and its development should be accelerated to meet the milestones set forth in the Energy Policy Act of 2005.

PREPARED STATEMENT OF THE AMERICAN GEOLOGICAL INSTITUTE

To the chairman and members of the subcommittee: Thank you for this opportunity to provide the American Geological Institute’s perspective on fiscal year 2008 appropriations for geoscience programs within the subcommittee’s jurisdiction. The President’s budget request for Department of Energy (DOE) research programs provides no funding for oil and gas research and development. Not only would the request terminate basic research for oil and gas, it would also repeal the ultradeep water and unconventional natural gas and other petroleum research funding proposed in the Energy Policy Act of 2005. Given the interest of the administration and Congress to reduce the Nation’s foreign oil dependence and reduce prices on oil and natural gas, it seems like an inopportune time to eliminate programs that could help with these objectives. We are especially concerned about the reduction or outright termination of oil and gas research funding for universities. These programs not only support innovations in oil and gas exploration and extraction, but the teaching and training of the next generation of professionals and faculty in these vital areas. AGI applauds the requested 7 percent increase for the largest supporter of physical science research in the United States, DOE’s Office of Science, and encourages the subcommittee’s full support for this increase. We also support increased funding requests for clean energy research, which focuses spending on solar, biomass/biofuels, hydrogen fuel, FutureGen and nuclear power, however, spending for other clean energy alternatives, such as geothermal, could be included in appropriations while remaining consistent with national needs and objectives.

AGI is a nonprofit federation of 44 geoscientific and professional associations that represent more than 100,000 geologists, geophysicists, and other earth scientists. The institute serves as a voice for shared interests in our profession, plays a major role in strengthening geoscience education, and strives to increase public awareness of the vital role that the geosciences play in society’s use of resources and interaction with the environment.

DOE FOSSIL ENERGY RESEARCH AND DEVELOPMENT

AGI urges you to take a critical look at the Department of Energy’s Fossil Energy Research and Development (R&D) portfolio as you prepare to craft the fiscal year 2008 Energy and Water Development Appropriations bill. Over the past 7 years, Members of Congress have strongly emphasized the need for a responsible, diversified and comprehensive energy policy for the Nation. The growing global competition

for fossil fuels has led to a repeated and concerted request by Congress to ensure the Nation's energy security. Energy Information Administrator Guy Caruso has noted the Nation's need for fossil fuels over the next 30 years and thus the critical need to continue R&D on fossil fuels and all other energy resources. The President's proposal, which provides no funding for oil and gas R&D, is short sighted and inconsistent with congressional concerns. No funding for oil and gas R&D will hinder our ability to achieve energy stability and security.

The research dollars spent by Fossil Energy R&D go primarily to universities, State geological surveys and research consortia to address critical issues like enhanced recovery from known fields and unconventional sources that are the future of our natural gas supply. This money does not go into corporate coffers, but it helps American businesses remain competitive by giving them a technological edge over foreign companies. All major advances in oil and gas production can be tied to research and technology. AGI strongly encourages the subcommittee to ensure a balanced and diversified energy research portfolio that does not ignore the Nation's primary sources of energy, fossil fuels, for at least the next 30 years.

Today's domestic industry has independent producers at its core. With fewer and fewer major producing companies and their concentration on adding more expensive reserves from outside of the contiguous United States, it is the smaller independent producers who are developing new technologies to extract our domestic resources efficiently and cleanly. However, without Federal contributions to basic research that drives innovation, small producers cannot develop new technologies as fast, or as well, as they do today. The DOE program has produced many key successes among the typical short-term (1 to 5 year) projects. And even failed projects have proven beneficial, because they've often resulted in redirection of effort toward more practical exploration and production solutions. Ideally, DOE and private sector participants share the programs R&D funding on a 50-50 basis, with the government contributing actual dollars and the company contributing dollars or "in kind" products and services. To justify the use of public funds, new technology developed from such projects is made available to industry.

In 2003, at the request of the House Interior Appropriations Subcommittee, the National Academies released a report entitled Energy Research at DOE: Was It Worth It? Energy Efficiency and Fossil Energy Research 1978 to 2000. This report found that Fossil Energy R&D was beneficial because the industry snapped up the new technologies created by the R&D program, developed other technologies that were waiting for market forces to bring about conditions favorable to commercializing them and otherwise made new discoveries. In real dollars from 1986-2000 the government invested \$4.5 billion into Fossil Energy R&D. During that time, realized economic benefits totaled \$7.4 billion. This program is not only paying for itself, it has brought in \$2.9 billion in revenue.

Unfortunately, despite this success, the President's fiscal year 2008 budget request continues the alarming reduction of energy R&D funding by eliminating all funding for our primary energy resources, oil and gas. There has been an 85 percent drop in renewable, fossil and nuclear energy R&D funding at DOE since 1978. Federal funding for renewable, fossil and nuclear R&D has decreased dramatically from \$5.5 billion in 1978 to \$793 million in 2005 according to a Government Accountability Office (GAO) report entitled Key Challenges Remain for Developing and Deploying Advanced Energy Technologies to Meet Future Needs and released in December 2006. Such significant under-investment in energy R&D over many decades hinders progress on cost-effective and environmentally-sound exploration and extraction of raw energy resources and clean and efficient development, production and use of energy products.

The Federal investment in energy R&D is particularly important when it comes to longer-range research with diversified benefits. In today's competitive markets, the private sector focuses dwindling research dollars on shorter-term results in highly applied areas such as technical services. In this context, DOE's support of fossil energy research, where the focus is truly on research, is very significant in magnitude and impact compared to that done in the private sector, where the focus is mainly on development. Without more emphasis on research, we risk losing our technological edge in the highly competitive global market place.

As we pursue the goal of reducing America's dependence on unstable and expensive foreign sources of oil, we must continue to increase recovery efficiency in the development of existing domestic oilfields, conserving the remaining in-place resources. Since the 1980s, 80 percent of new oil reserves in this country have come from additional discoveries in old fields, largely based on re-examination of previously collected geoscience data. These data will become even more important in the future with the development of new recovery technologies.

Perhaps one of the most promising areas of R&D for domestic oil supplies are in the ultradeep waters where drilling is allowed in the Gulf of Mexico. The Energy Policy Act of 2005, set aside \$50 million annually from collected offshore royalties for ultradeep water and other unconventional oil and gas R&D to support clean and efficient exploration and extraction in the Gulf. The President's budget request would repeal this program and provide no funding for ultradeep water and other unconventional oil and gas R&D. AGI asks that you consider R&D spending or other incentives to encourage the private sector to invest in clean and efficient technological advances to enhance our unconventional fossil fuel supply in offshore regions where drilling is allowed and significant infrastructure already exists.

The research funded by DOE leads to new technologies that improve the efficiency and productivity of the domestic energy industry. Continued research on fossil energy is critical to America's future and should be a key component of any national energy strategy. The societal benefits of fossil energy R&D extend to such areas as economic and national security, job creation, capital investment, and reduction of the trade deficit. The Nation will remain dependent on petroleum as its principal transportation fuel for the foreseeable future and natural gas is growing in importance. It is critical that domestic production not be allowed to prematurely decline at a time when tremendous advances are being made in improving the technology with which these resources are extracted. The recent spike in oil and natural gas prices is a reminder of the need to retain a vibrant domestic industry in the face of uncertain sources overseas. Technological advances are necessary to maintaining our resource base and ensuring this country's future energy security.

DOE OFFICE OF SCIENCE

The DOE Office of Science is the single largest supporter of basic research in the physical sciences in the United States, providing more than 40 percent of total funding for this vital area of national importance. The Office of Science manages fundamental research programs in basic energy sciences, biological and environmental sciences, and computational science and, under the President's budget request, would grow by 7 percent from about \$4.1 billion last year to \$4.4 billion. AGI asks that you support this much needed increase.

Within the Office of Science, the Basic Energy Sciences (BES) program supports fundamental research in focused areas of the natural sciences in order to expand the scientific foundations for new and improved energy technologies and for understanding and mitigating the environmental impacts of energy use. BES also discovers knowledge and develops tools to strengthen national security.

The Basic Energy Sciences (BES) would remain the largest program in the office with an increase of 5.5 percent from \$1.420 billion in fiscal year 2007 to \$1.498 billion in fiscal year 2008 in the President's request. Within the BES, Chemical Sciences, Geosciences and Biosciences would receive a \$15.4 million increase over their fiscal year 2007 budget. AGI strongly supports the requested increases for these programs.

DOE ENERGY EFFICIENCY AND RENEWABLE ENERGY

Within DOE Energy Efficiency and Renewable Energy, the President's fiscal year 2008 budget request would not support any R&D in geothermal technology. AGI asks that the subcommittee consider supporting geothermal R&D at the fiscal year 2006 level of \$23 million.

PREPARED STATEMENT OF THE ALLIANCE TO SAVE ENERGY

The Alliance to Save Energy (the Alliance) is a bipartisan, nonprofit coalition of business, government, environmental, and consumer leaders committed to promoting energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and greater energy security. The Alliance, founded in 1977 by Senators Charles Percy and Hubert Humphrey, currently enjoys the leadership of Senator Mark Pryor as chairman; Duke Energy President and CEO James E. Rogers is the co-chairman; and Representatives Ralph Hall, Zach Wamp and Ed Markey and Senators Jeff Bingaman, Susan Collins, Larry Craig and Byron Dorgan as its vice-chairs. More than 120 companies and organizations support the Alliance as Associates. The Alliance recommends increases of \$41.3 million for several existing energy-efficiency deployment programs, and \$55 million for new programs in fiscal year 2008.

BACKGROUND

Energy Efficiency—Our Greatest Resource.—Gasoline, natural gas, and electricity prices have all reached all-time highs in the last couple of years. These price increases cost American families and businesses over \$300 billion each year. The President recognized energy security as a major issue in the State of the Union message. And many of the world's top scientists recently reaffirmed the urgent need to address global warming in a timely manner. Energy efficiency is the quickest, cheapest, and cleanest way to address the linked issues of energy prices, energy security, air pollution, and global warming. Energy efficiency already is the Nation's greatest energy resource—we now save more energy each year due to actions since 1973 to increase energy efficiency than we get from any single energy source, including oil. But much more can and needs to be done.

A Record of Success.—DOE programs play a key role in developing the energy-efficiency resource through the research and development (R&D) of new energy-efficient technologies, and by helping to deploy these technologies. A 2001 National Research Council report found that every dollar invested in 17 DOE energy-efficiency R&D programs returned nearly \$20 to the U.S. economy in the form of new products, new jobs, and energy cost savings to American homes and businesses. Environmental benefits were estimated to be of a similar magnitude.

Efficiency-Related Budget Authorizations and Studies.—Several reports and legislative authorizations have supported major increases in funding for DOE energy efficiency programs. The Energy Policy Act of 2005 (EPA 2005) authorized \$865 million for energy efficiency R&D in fiscal year 2007, more than \$1 billion for deployment programs, and additional funds for hydrogen and fuel cells and for electric energy R&D. This follows calls for expanding energy efficiency research by the National Commission on Energy Policy, the President's Committee of Advisors on Science and Technology, the Energy Future Coalition, and the President's National Energy Policy Development Group.

Summary of the President's Energy Efficiency Fiscal Year 2008 Budget Request.—The President's overall fiscal year 2008 budget request for energy-efficiency programs within DOE's Office of Energy Efficiency and Renewable Energy is \$515 million, down nearly \$117 million (18 percent) from the fiscal year 2006 appropriated level. This large cut follows a gradual slide from the \$695 million that was appropriated for these programs in fiscal year 2002. Funding for these programs has decreased by one-third (37 percent) since 2002, after adjusting for inflation. In addition, the request for electricity R&D programs, many of which focus on efficiency, is \$86 million, a decrease of \$50.3 million (37 percent) from the fiscal year 2006 appropriated level. Several deployment programs, along with industrial R&D, have experienced some of the biggest funding cuts.

ALLIANCE RECOMMENDATIONS

In order to address the critical energy problems facing our Nation, the Alliance recommends funding DOE energy-efficiency programs in line with the EPA 2005 authorized levels. Some specific funding requests are outlined below:

It is important to maintain a broad portfolio of programs. The impact of DOE energy-efficiency programs has been multiplied by the combination of research to develop new technologies, voluntary deployment and market transformation programs to move them into the marketplace, and standards and codes to set minimum thresholds for using cost-effective technologies. And while the combination of programs has had tremendous impact, the government has often not been successful at picking winning technologies.

Thus, it is important that the increases proposed in the administration's budget and those proposed below not be paid for through cuts to other highly-effective efficiency programs, which also address critical national energy needs. While the fuel cell and alternative fuels programs are important, they do not take the place of core programs that can have broader, more certain, and more near-term energy savings impacts. In particular, the Alliance opposes repeated cuts that threaten the viability of Industrial Technologies research programs and the dramatic proposed cuts to the distributed energy R&D program and the Weatherization Assistance Program.

Key Existing Deployment Programs (Office of Energy Efficiency and Renewable Energy)

Building Energy Codes (Building Technologies).—While residential and commercial building codes are implemented at the State level, States rely on DOE for technical specifications, training, and implementation assistance. The Alliance estimates that building energy codes could save 7.2 quads of energy by 2025. The new 2006 IECC model residential code includes measures to simplify the code and ease imple-

mentation, and thus presents exciting opportunities to increase code adoption and compliance. Yet the administration has proposed cutting funding for building codes by one-third.

EPAct 2005 (sec. 128) authorized \$25 million per year for building codes, including \$10 million for a new program to help States improve compliance with their codes. Several studies have found poor rates of compliance with building codes, causing unnecessary energy waste. This new program would assist states that have adopted up-to-date building codes to implement a plan to achieve 90 percent compliance through better training, enforcement, or other measures. Thus the Alliance recommends a \$19.4 million increase above the fiscal year 2006 appropriated level, for a total of \$25 million.

Federal Energy Management Program.—This program helped cut Federal building energy use by 24 percent from 1985–2001—a reduction that now saves Federal taxpayers roughly \$1 billion each year in reduced energy costs. But funding has steadily decreased for this program, even though large savings remain untapped. EPAct 2005 and Executive Order 13423, in addition to setting aggressive new Federal energy saving targets, require DOE to implement rules, guidelines, and reports on the targets, Federal building standards, Federal procurement, and metering. A needed funding increase for this program will actually save taxpayers money in lower Federal energy bills. The Alliance recommends a \$5 million increase above the fiscal year 2006 level, for a total funding level of \$24 million.

Equipment Standards and Analysis (Building Technologies).—Appliance energy efficiency standards (e.g. for refrigerators) have already reduced U.S. electricity use by an estimated 2.5 percent and reduced peak power demand by the output of 70 power plants, at minimal cost to the Federal Government, and saving consumers billions of dollars in their energy bills. But the program is years behind on issuing standards for close to 20 products. EPAct 2005 requires additional rulemakings. DOE has issued an ambitious plan to catch up, and has requested a \$3.5 million increase to do so. But a new GAO report says that is not enough to meet a 600 percent increase in workload, and some of the most important standards are not even in the plan. The Alliance recommends a \$10 million increase over the fiscal year 2006 level for total funding of \$20.2 million.

New Deployment Programs (see also Building Energy Codes above)

Energy Efficiency Pilot Program (Office of Electricity Delivery and Energy Reliability).—State and utility energy-efficiency programs have been remarkably successful at reducing electricity demand, strain on the grid, and the need for costly new power plants. However, they have been starved for funds due to electric utility restructuring. A few states are experimenting with innovative performance-based policies to prioritize efficiency resources before increasing energy supplies. EPAct 2005 (sec. 140) authorized \$5 million per year for a new program to provide funding to several States to assist in the design and implementation of energy-efficiency resource programs that will lower electricity and natural gas use by at least 0.75 percent a year. The Alliance recommends \$5 million for this new program.

Zero Energy Commercial Buildings Initiative (Building Technologies).—Buildings are a major part of the problem and solution of high natural gas and electricity use and climate change. The buildings sector in the United States accounts for about 40 percent of total energy consumption and 40 percent of carbon dioxide emissions, and about half of that is from commercial buildings. There is a growing consensus on the need and opportunity for aggressive action to dramatically improve building energy efficiency; the American Institute of Architects (AIA) has called for reducing fossil fuel use in new and renovated buildings by 50 percent by 2010 and eventually by 100 percent. DOE has a zero energy homes program, but achieving this goal for the many kinds of commercial buildings is even more difficult and more complicated. A large concerted multi-year initiative is critical to achieve these deep savings throughout the commercial sector.

The Alliance, along with the AIA, American Society of Heating Refrigerating and Air-conditioning Engineers, Lawrence Berkeley National Laboratory, U.S. Green Building Council, and World Business Council for Sustainable Development, are the founding sponsors of an initiative for zero-energy commercial buildings by 2030. This public-private collaboration will combine better tracking of real energy performance, demonstrations of replicable solution packages for different building types, strategic research, and a market transformation plan. The Alliance recommends \$20 million for this new program in fiscal year 2008, to add to and complement the existing funding request for commercial buildings R&D.

Energy Efficiency Public Information Initiative (Program Support).—The quickest way to reduce energy demand and bring high energy prices down is through consumer education. EPAct 2005 (sec. 134) authorizes \$90 million per year for a public

education program to provide consumers the information and encouragement necessary to reduce energy use. Such programs have a proven track record of success, as in the 2001 “Flex Your Power” campaign in California, which significantly reduced consumer electricity demand and assisted in avoiding further blackouts. DOE has contributed small amounts of funding to effective education campaigns, but much more is needed. The Alliance recommends \$30 million for this new program in fiscal year 2008.

Additional Priorities

Industrial Best Practices (Industrial Technologies—Crosscutting).—One of the most effective DOE industrial programs conducts plant-wide energy assessments, develops diagnostic software, conducts training, develops technical references, and demonstrates success stories. Oak Ridge National Laboratory reports that DOE-ITP’s Best Practices outreach saved 82 trillion Btu in 2002, worth \$492 million. The Alliance recommends a \$3 million increase for Best Practices, for total funding of \$10.9 million.

Energy Star (Building Technologies).—Energy Star is the most successful voluntary, public-private deployment program at EPA and DOE, making it easy for consumers to find and buy numerous energy-efficient products. And it functions on a very small budget. Every Federal dollar spent on the Energy Star program results in an average savings of more than \$75 in consumer energy bills and a reduction of about 3.7 tons of carbon dioxide emissions. With additional funding, the Energy Star program could update its criteria, expand the program to other areas and add more product categories. The Alliance recommends a \$2 million increase over the fiscal year 2006 appropriated level for total funding of \$7.9 million.

Building Technologies R&D.—Of all the DOE energy-efficiency programs, Building Technologies continues to yield perhaps the greatest energy savings. The 2001 National Research Council study found that just three small R&D programs—in electronic ballasts for fluorescent lamps, refrigerator compressors, and “low-e” glass for windows—have already achieved cost savings totaling \$30 billion, at a total Federal cost of only about \$12 million. Buildings R&D should be a priority for funding increases, especially in the areas of Windows and Insulation and Materials R&D.

Energy Information Administration (EIA) Energy Consumption Surveys.—EIA’s Energy Consumption Surveys provide unique and invaluable data to policy makers, industry, and researchers. The Alliance recommends an increase of \$1.9 million, for total funding of \$5.5 million, in order to reinstate the residential transportation survey, last conducted in 1994, and to conduct the Residential, Manufacturing, and Commercial Buildings Energy Consumption Surveys (RECS, MECS, and CBECS) every 3 years, as required by the Energy Policy Act of 1992, instead of the current 4-year schedule.

PREPARED STATEMENT OF WESTERN MICHIGAN UNIVERSITY (WMU)

R&D activities administered through DOE’s Fossil Energy programs play a vital role to discover, develop and produce a significant portion of the Nation’s domestic natural energy needs.

Western Michigan University (WMU) provides invaluable research to develop new technologies for improved exploration and production of hydrocarbons in an environmentally responsible manner. WMU also disseminates this information through workshops to Michigan’s small independent oil companies that cannot develop such technologies on their own.

Most of the oil companies in Michigan consist of a few employees, often referred to as “Mom and Pop” independent producers. In the Midwest, there are thousands of such companies that produce many tens of millions of barrels of oil and equivalent natural gas a year.

Ten years ago, in a consortium with private industry, with funding by DOE, WMU developed and proved a new drilling technology to recover oil from abandoned fields. Subsequent application of this technology has produced more than 20 million barrels of oil and more than 500 billion cubic feet of natural gas in Michigan. We are now studying the origins and evolution of some of Michigan’s major oil and gas reservoirs and using newly developed computer-based 3D models for predicting their distribution. This will create the ability to produce energy more efficiently, in larger quantities, and with less drilling. WMU is one of a limited number of universities nationwide capable of this type of research.

WMU has presented its research results and techniques to several thousand participants at interactive workshops for industry and government. And WMU has an

increasing enrollment of undergraduate and graduate students who are being trained to meet an urgent need for geoscientists.

WMU's website, which receives more than 6,000 hits per month, connects producers, the research community and support services industries that produce hydrocarbons.

This program would not be possible without DOE funding.

WMU is nearing the final year in our current multi-year research program. To cut off funding now, as we are just coming to fruition with new results and technologies would be such a loss of taxpayers' money already invested.

There are those who ask why tax dollars should support oil and gas research and programs such as ours at WMU. My response is that these are vital to the Nation's security and to the domestic economy. This research can improve the domestic supply of oil and gas, which in turn will drive down the price. When constituents of each member of Congress ask what the government is doing about the current high price of oil, one logical response is to say that they support efforts that will improve the domestic supply through R&D funds.

Eighty-five percent of DOE's R&D programs are tailored to the exploration and development activities of the independent producer. These small companies drill 90 percent of the Nation's oil wells and they produce 85 percent of the Nation's natural gas. For these companies, undertaking costly research activities is not a viable option. They must gain education and access to technology from outside their doors, a key function provided by WMU.

There is another benefit to government-supported R&D that is rarely recognized—training urgently needed geoscientists. The research spawns Master's and Ph.D. students who will take critical roles in an industry that suffers from a shrinking population of professionals, particularly American professionals. Where will the domestic industry be in the future if skilled students do not enter the oil and gas industry? All aspects of these professional jobs require increasingly complex skills and abilities. Who will be the explorers and developers of oil and gas for the next generation?

I urge you to reinstate full funding for the DOE Oil and Gas research program at WMU. This is desperately needed for the American economy and its security. We are increasingly dependent on foreign oil and gas to run our economy. When will our dependency on imports be too great? Sixty-five percent? We are there now! Seventy-five percent? Eighty-five percent? I think that such high levels make us very vulnerable to supply interruptions, huge price spikes, and an unstable economy.

PREPARED STATEMENT OF THE AMERICAN FOREST & PAPER ASSOCIATION

The Agenda 2020 Technology Alliance, a Special Project of the American Forest & Paper Association (AF&PA) welcomes this opportunity to provide the committee with its views on our industry's key public-private partnerships within the Office of Energy Efficiency and Renewable Energy (EERE) and to urge increased funding to adequately address industry's challenges in fiscal year 2008. The Industrial Technologies Program (ITP) and the Office of Biomass Programs (OBP) provide vital funding for research, development, and demonstration (RD&D) of technologies that dramatically reduce the forest products industry's energy intensity and transforms our industry into producers of carbon-neutral biofuels—thus addressing strategic national needs associated with energy efficiency, energy security, diversified energy supply, and environmental performance. We recommend industry specific funding of \$6 million for forest products industry in ITP. We support the President's request for \$179 million for Biomass and Biorefinery Systems R&D in OBP and ask that the Committee work to ensure eligibility of forest biorefineries in these programs and keep the appropriations unencumbered to allow for full funding of competitive biomass systems and biorefinery RD&D grants. Furthermore, we recommend that the Committee restore OBP Platforms Research and Development funding of \$10 million for competitive R&D for black liquor gasification, a key enabling technology of the forest biorefinery.

The Agenda 2020 Technology Alliance is an industry-led partnership with government and academia that holds the promise of reinventing the forest products industry through innovation in processes, materials and markets. The collaborative, pre-competitive research, development, and deployment supported through Agenda 2020 provide the foundation for new technology-driven business models that will enable our industry to meet competitive challenges, while also contributing solutions to strategic national needs. The technology solutions developed through Agenda 2020 are aligned to provide solutions to the competitive challenges faced by the U.S. forest products industry, which accounts for approximately 6 percent of the total U.S. manufacturing output, employs more than a million people, and ranks among the

top 10 manufacturing employers in 42 States with an estimated payroll exceeding \$50 billion.

As is the case with many U.S. manufacturing industries, we face serious domestic and international challenges. Since early 1997, 136 pulp and paper mills have closed in the United States, contributing to a loss of 84,000 jobs, or 39 percent of our workforce. An additional 60,000 jobs have been lost in the wood products industry since 1997. New capacity growth is now taking place in other countries, where forestry, labor, and environmental practices may not be as responsible as those in the United States. Several drivers have heightened the need to develop new energy efficiency technologies: the recent volatility of energy markets, especially for natural gas; renewed national focus on climate change and environmental performance; and aging process infrastructure. Global competition, coupled with massive industry restructuring due to financial performance pressures from Wall Street, continue to hinder the ability of U.S. companies to make new investments. Each year without new investments, new technologies and new revenue streams, we lose ground to our overseas competitors.

Currently, energy is the third largest manufacturing cost for the forest and paper industry at 18 percent for pulp and paper mills—up from 12 percent just 3 years ago. For some of our mills, the cost of energy is about to eclipse employee compensation.

Since 1994, the forest products industry has been one of DOE's "Industries of the Future," partnering with ITP through the Agenda 2020 Technology Alliance in RD&D that has yielded successful advances towards our national energy and environmental goals. Agenda 2020 stands as an example of successful industry-government collaboration to develop technologies that hold the promise of reinventing industry, while providing real solutions for strategic national energy needs. Every Federal dollar spent on ITP saves \$7.06 in annual energy costs and 1.3 million in annual source BTUs (2004 estimates). As recently as 2003, the ITP/Agenda 2020 portfolio included a total shared DOE and industry investment of almost \$48 million, with nearly 55 percent coming from direct project cost shares by industry.

Today, after several years of continuous and substantial cuts, the ITP/Agenda 2020 budget has been reduced by over 83 percent since fiscal year 2002. This undermines our progress in achieving crucial energy efficiencies at a time when energy and response to climate change are major factors in the survival of the U.S. forest products industry. Projects rescope or cut in recent years due to budget shortfalls resulted in a lost energy savings potential of 5 trillion BTUs/yr. Recent reductions make us unable to pursue projects in key priority areas such as advanced water removal and high efficiency pulping, which represents a lost savings potential of 100–200 trillion BTUs/yr. In fiscal year 2008, a further funding reduction is proposed and emphasis shifted from industry specific funding. Unfortunately, the type of technologies that cross all industries are not those from which we can achieve the maximum savings for energy and environmental emissions. Furthermore, the proposed funding of \$1.752 million, is barely sufficient to fund ongoing projects, let alone address the high priority R&D needs specific to the forest products industry that have been jointly identified by industry with the DOE.

This comes at a crucial time when the forest products industry, like many energy-intensive industries, is facing unprecedented pressures due to the rising costs of energy and potential climate change mandates. Although we are nearly 60 percent self-sufficient (using biomass), it is imperative that we seek solutions as diverse as fuel switching, finding new energy sources, and options for reducing energy consumption. Thus we are in greater need than ever for the technology-based energy efficiency solutions that could be provided through our Agenda 2020 partnership with ITP. AF&PA's recommended ITP funding for forest products research (\$6 million) would help our industry partially recover its capacity to develop and deploy vital energy efficiency technologies. Restoring Agenda 2020 funding to pre-fiscal year 2005 levels will not only help the competitive position of American industry, but will also serve national strategic goals for reduced dependence on foreign oil.

The Integrated Forest Products Biorefinery (IFPB) is a key Agenda 2020 technology platform and a top technical and economic priority for our industry. The objective is to develop and deploy core technologies that can be integrated into existing processing infrastructure, which would be transformed into geographically distributed production centers of renewable "green" bioenergy and bioproducts. This can be done while co-producing existing product lines, creating higher skilled and better paying jobs, strengthening rural communities, and opening new domestic and international markets for U.S. forest products companies.

The IFBP technology has the potential to integrate agricultural wastes, agricultural producers, forest landowners, agricultural landowners, forest product producers, and the petrochemical industry to produce clean renewable bio-fuels to sup-

port our local economies and the Nation. Widespread application of this technology would not only reduce environmental impact of burning fossil fuels, it would also increase the viability of agricultural, forest products, and other industries that use waste heat. It will create new high paying jobs, both direct and indirect, increasing tax revenue. From an energy perspective, the IFPB has the benefit of making the forest products industry even more energy self-sufficient, serving the DOE strategic goal of reduced energy intensity in industry by reducing fossil energy consumption. In addition, the IFPB would permit the industry to become a producer of renewable, carbon-positive bioenergy and biofuels, contributing to DOE strategic goals to dramatically reduce dependence on foreign oil and to create new domestic bioindustry.

AF&PA supports the President's announced \$179 million budget initiative in fiscal year 2007 for biorefinery research and demonstration.—This initiative provides much needed funding to advance core enabling IFPB technologies, as well as providing major capital cost-share for commercial scale biorefinery demonstration. The forest products industry is an ideal partner to develop and commercialize integrated biorefineries. We have much of the infrastructure and expertise—wood harvesting, transportation and storage, manufacturing and conversion infrastructure, waste handling and recovery—needed to achieve the goals of integrated biorefineries. By and large, they are located in rural communities where they can help realize important synergies between agricultural and forest-based feedstocks. Recent estimates from Princeton University show significant potential for net environmental benefits of IFPBs, inclusive of offsetting other fossil fuel consumption in the mill. The industry-wide potential is to reduce nearly 100 million tons of carbon emissions annually from IFPBs. The study also estimates the cumulative value of savings due to reduced CO₂, SO₂, and NO_x emissions is \$6 million to \$40 billion.

However, private/public investments in RD&D are critical to bring IFPB technologies into full commercial use. Co-investment for RD&D can help mitigate the technical risks (especially integration with capital-intensive, legacy infrastructure) of early adopters of emerging IFPB technologies. Risk mitigation is an important factor in achieving the benefits of IFPBs, especially for integrating biorefinery technologies with existing manufacturing infrastructure. Federal support through research funding and other investments, such as loan guarantees and tax credits, is critical.

In order to achieve the promise of IFPB technologies for the industry and for the Nation, we need greater stability and availability of funds provided through the OBP budget. We urge the committee to preserve the proposed \$179 million funding of Biomass and Biorefinery Systems R&D, so that there will be sufficient appropriations to fund biorefinery demonstration and commercialization projects. We also urge the committee to ensure that forest-based materials are eligible for this and future biorefinery research and demonstration funding. Forest-based materials can sustainably produce enough biofuels to displace up to 10 percent of the country's petroleum production. They are a vital feedstock for achieving reduced dependence on foreign oil and facilitating bioindustries domestically and should be included in programs for biomass and biorefinery RD&D.

A core enabling technology for part of the IFPB is black liquor gasification (BLG), which converts the by-product of the chemical pulping process into a synthetic gas. The synthetic gas can subsequently be burned to directly produce clean, efficient energy, or converted to other fuels such as hydrogen, renewable transportation fuels, and/or other high value chemicals. If fully developed and commercialized, a biorefinery based on BLG can produce up to 10 billion gallons of other renewable transportation fuels, and as much as 20,000 MW of biomass power.

In fiscal year 2006, DOE eliminated funding for BLG and related research, despite recent technical progress to bring the technology to pre-commercial demonstration. BLG is a core enabling technology for the IFPB, and is identified as a priority technology area for biorefineries in technology roadmaps created by industry, as well as in research plans developed by OBP to accelerate biorefineries and development of national bioindustry. Critical research areas identified by OBP include: integrated biorefinery support for thermochemical biorefineries, products core R&D in chemicals and fuels from syngas; thermochemical platform core R&D in BLG and syngas cleanup. AF&PA is recommending that \$10 million be restored in the OBP budget for competitive research in these critical areas and to complete BLG core research and projects that were eliminated in recent cuts. This funding will provide the groundwork needed for next vital steps leading to large-scale demonstration of biofuels and biochemicals production in association with the industry's dominant Kraft pulping process.

We appreciate the committee's interest in ensuring sustained and adequate funding for RD&D partnerships and look forward to working with you to advance industry and national interests.

PREPARED STATEMENT OF THE CENTER FOR ADVANCED SEPARATION TECHNOLOGIES,
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Chairman Dorgan and Ranking Member Domenici of the subcommittee, I represent the Center for Advanced Separation Technologies (CAST), which is a consortium of seven leading U.S. mining schools. I appreciate the opportunity to submit this testimony requesting your committee to add \$3 million to the 2008 Fossil Energy Research and Development budget, U.S. Department of Energy, for Advanced Separations research. Research in Advanced Separations Technology Development is authorized by the Energy Policy Act of 2005, title IX, subtitle F, section 962. I am joined in this statement by my colleagues from the consortium: Richard A. Bajura: West Virginia University; Peter H. Knudsen: Montana Tech of the University of Montana; Richard J. Sweigard: University of Kentucky; Jan D. Miller: University of Utah; Ibrahim H. Gundiler: New Mexico Tech; and Maurice C. Fuerstenau: University of Nevada-Reno.

FUNDING REQUEST FOR CENTER FOR ADVANCED SEPARATION TECHNOLOGIES

The Center for Advanced Separation Technologies (CAST) is a consortium of seven universities with expertise in separations science as applied to energy research. It was established in 2001 to develop advanced technologies that can be used to efficiently produce cleaner fuels in an environmentally acceptable manner and to study the basic sciences and engineering involved. The new technologies developed and the highly skilled personnel produced as a result of its research activities will help the United States develop its domestic energy resources and achieve energy independence.

The United States faces an energy crisis created by an imbalance between domestic supply and demand. While the United States makes up only 4.6 percent of the world's population, it consumes 24 percent of the world's energy resources, 25 percent of oil, and 44 percent of motor gasoline, while its domestic energy production lags behind. As a result, the United States imported 30 percent of its energy needs in 2005, which is expected to grow in the future. On the other hand, the United States has large amounts of untapped energy resources within its borders, which include 271 billion tons of recoverable coal, 2.6 trillion barrels of oil in the form of oil shale, and 20 billion barrels of oil in oil sands. In addition, the United States has 200,000 trillion cubic feet (Tcf) of methane (CH₄) deposited in the form of hydrates in ocean floors and permafrost. The amount of energy deposited as methane hydrates alone far exceeds the amounts of all fossil energy resources combined. There is a dire need to exploit these untapped domestic energy resources by developing advanced separation technologies.

Organization

The Center for Advanced Separation Technologies (CAST) was formed initially between Virginia Tech and West Virginia University with the objective of developing technologies that can help the U.S. coal industry produce cleaner solid fuels with maximum carbon recovery in environmentally acceptable ways. The scope of work was limited to studies on solid-solid and solid-liquid separation methods that are used in the coal industry. In 2002, five other universities listed above joined the consortium to develop crosscutting technologies that can also be used in a broader spectrum of the U.S. resources industries. Therefore, the scope of CAST research was expanded to include studies of chemical/biological separations and environmental control.

By working together as a consortium, the center can take advantage of the diverse expertise available in its member universities and address the interests of different geographical regions of the country. Working together as a consortium is consistent with the recommendations of a recent National Research Council (NRC) report. It stated that "consortia are a preferred way of leveraging expertise and technical inputs to the mining sector," and recommended that DOE should support "academia, which helps to train technical people for the industry."

Progress And Next Step

At present, a total of 59 research projects are being carried out at the 7 CAST member universities. Of these, 20 projects are in solid-solid separation, 5 in solid-liquid separation, 15 in chemical/biological separation, 9 in modeling and control, and 10 in environmental control. These projects were selected by industry panels in accordance with the priorities set forth in the CAST Technology Roadmap, which was developed by an industry panel in 2002. Research results are presented at workshops to provide a forum to exchange ideas, create synergy, and interact with

industry. The next workshop will be held during July 24–26, 2007, in Blacksburg, Virginia.

Despite the high price of coal, many coal companies are losing significant amounts of their mined coal due to the lack of appropriate solid-solid and solid-liquid separation processes. In general, efficiencies of removing ash, sulfur and mercury from coal using these processes deteriorate sharply with decreasing particle size. As a result, many companies discard coal fines to impoundments. According to a National Research Council (NRC) report, the U.S. coal industry discards approximately 70 to 90 million tons of fine coal annually, which represents a significant loss of valuable national energy resource and at the same time creates serious environmental concerns. The NRC report was produced as a result of a congressionally directed investigation of a major impoundment failure that occurred on October 11, 2000, in Martin County, Kentucky. The report recommended a study to identify technologies that can eliminate (or reduce) the need for slurry impoundments.

There are more than 760 impoundments in the eastern United States, many of which are rated “high risk.” Companies have been recovering some of the fine coal from the waste impoundments by taking advantage of the section 29 Synfuels Tax Credit. However, this tax credit is due to expire in 2007; therefore, there is an impending need to develop advanced fine coal cleaning and dewatering technologies that can be used not only to recover the fine coal from impoundments without the benefit of a tax credit but also to eliminate the waste from the source so that there is no need to create future impoundments.

For the reasons described above, CAST has been focusing on developing advanced fine coal cleaning and dewatering technologies. In one project, pilot-scale tests were conducted on the coal slurry from an impoundment (Pinnacle) in Pineville, West Virginia. Based on the successful test results obtained by CAST on the coal samples taken from the impoundment, Beard Technologies constructed a recovery plant in late 2006, and is currently in the process of shakedown testing. This is the first plant designed to recover practically all of the coal in a waste impoundment without the benefit of tax credit. If successful, the company plans to build additional plants using the advanced separation technologies developed by CAST. It is estimated that there are more than 2.5 billion tons of coal discarded in numerous impoundments in the United States.

In another fine coal dewatering project, CAST is developing a hyperbaric centrifuge that can remove water from fine coal using a combination of air pressure and centrifugal force. Recently, a semi-continuous bench-scale test unit has been designed and constructed. In a series of preliminary tests conducted on a coal sample finer than 0.15 mm in size, moisture was reduced to less than 10 percent by weight, which is substantially lower than those obtainable using conventional methods. Decanter Machine Company in Johnson City, Tennessee, has acquired a license from CAST to market the new technology, and is planning to construct a large-scale prototype unit for onsite testing. There are several other dewatering research projects carried out at CAST, all of which are promising. These include a flocculant injection system, which is already in use in many coal cleaning plants, and a deep-cone thickener which is designed to increase the consistency of refuse materials (mainly clay) so that they can be disposed of without using impoundments.

Traditionally, the western United States subbituminous coals are not cleaned before burning for power generation. However, depletion of higher quality reserves may soon force companies to remove impurities prior to shipping to eastern markets. Unfortunately, the water-based coal cleaning methods employed for cleaning eastern coal cannot be used for the western coal due to the lack of water. To address this problem, CAST researchers have been developing ways to clean western coal using a dry solid-solid separation method. A pilot-scale test conducted onsite showed that about one-quarter of the ash and one-third of the sulfur can be removed with high recoveries. Further, the dry cleaning process also removed more than 50 percent of the mercury originally present in the coal. It is anticipated that the technology will be commercialized in 2007.

CAST has also developed metallic filters that can remove mercury from flue gas. The process has been tested successfully at an operating power plant in Colstrip, Montana, with over 90 percent removal efficiencies. The spent filter can be cleaned of the captured mercury and reused, while the mercury stripped off the filter can be stored permanently in stable forms.

Many of the separation technologies developed by CAST can also be used to upgrade fertilizer minerals such as potash and phosphate. In 2006, Mosaic Potash Carlsbad, Inc. implemented a new method of minimizing the harmful effect of clay in processing potash ores and increased recovery by 6 percent. An improvement such as this has allowed mining companies in New Mexico, which produce more than 70 percent of potash in the United States, retain 600 high-paying jobs. At

present, CAST is developing new methods of processing difficult potash ores. These new methods will make it possible to mine 50 million tons of langbeinite ores, which will greatly increase the life of the U.S. potash industry.

The United States is the second largest copper producer in the world; however, much of the ores are of too low grade to be economically recovered using the conventional solid-solid separation methods such as flotation. Therefore, CAST has been developing an alternate method of extracting copper from low-grade ores using a chloride-based leaching, followed by direct electrowinning of dissolved copper. This could replace the traditional methods involving fine grinding, flotation, and smelting, which are energy intensive and, therefore, are not amenable for processing low-grade ores in western United States. The energy savings that can be realized by using this new method can be as high as 25 million Btu per metric ton of copper.

In addition to the more practical projects described above, CAST has also conducted fundamental research. As an example, a mathematical model has been developed to describe froth flotation—the most widely used solid-solid separation process in both the coal and minerals industries. The model is based on first principles so that it has predictive and diagnostic capabilities. In another project, computational fluid dynamic (CFD) simulation techniques have been employed to design optimal flotation machines. This project is cost-shared by Dorr-Oliver EIMCO, Salt Lake City, Utah, the world's largest coal and minerals processing equipment manufacturer. In still another project, the forces acting between two microscopic surfaces immersed in water have been measured using an atomic force microscope (AFM) and a surface force apparatus (SFA). The results showed that strong attractive forces are present between hydrophobic surfaces, the origin of which is not yet known. The new surface force, which is referred to as “hydrophobic force” plays an important role in processing energy minerals, such as coal, oil sands, oil shale, petroleum, and methane hydrates, that are naturally hydrophobic.

Many of the separation processes being developed at CAST can be used for water clean up. For example, the flotation technique which was developed originally for separating one type of mineral from another is used to remove suspended solids from waste water streams. Furthermore, the basic scientific knowledge gained from the solid-liquid and biological separations research at CAST can be used to remove toxic elements present in waste water, mine effluents, and ground water. Water treatment research is of critical importance worldwide, particularly to the western United States which has been under drought conditions since 1999. A recent study showed that by 2050 untreated wastewater could reduce the supply of renewable water supply by one third.

FUNDING REQUEST AND RATIONALE

The United States is by far the largest mining country in the western world. In 2005, the industry produced \$73.8 billion worth of raw materials, including \$22.3 billion for coal, and \$51.5 billion for minerals. Australia is a smaller mining country, but has five centers of excellence in advanced separations as applied to coal and minerals processing. In 2005, Australia established the Mineral Science Research Institute with a funding of \$22.6 million for 5 years. In the United States, CAST is the only consortium serving the U.S. energy and minerals resources industry.

CAST is developing a broad range of advanced separation technologies. Although it is a relatively new center, many of our research projects have yielded technologies that have already been deployed to industry. Many other promising projects are ongoing and require financial support. Continued funding will allow CAST to develop advanced technologies that can be used to exploit the abundant national energy resources in a manner that is acceptable to the environment. For fiscal year 2008, CAST is requesting \$3 million for its research activities.

PREPARED STATEMENT OF THE PETROLEUM TECHNOLOGY TRANSFER COUNCIL

Mr. Chairman and members of the subcommittee, on behalf of the Petroleum Technology Transfer Council (PTTC) and its partners throughout its domestic oil and natural gas industry network, I would like to express our concern if Federal funding for technology research and development is terminated.

The administration has proposed to completely stop Department of Energy natural gas and oil R&D funding through the appropriations process and to rescind R&D funding previously authorized in the 2005 Energy Policy Act (EPACT).

PTTC strongly opposes this policy and believes it will be harmful over the near- and long-term. Among those that will be negatively impacted are:

- The academic community where tomorrow's scientific professionals gain valuable seasoning through participation in DOE-supported projects in their graduate years;
- The young and newly trained scientific professional which is already entering the workforce at near low historic levels; and
- The domestic petroleum supply, which is developed primarily by independent producers that rely heavily on evolving technologies to exploit mature and problematical petroleum resources.

The R&D Consortium created and funded through EPACT, which will be implemented by the Research Partnership to Secure Energy for America (RPSEA), enables focused research in areas critical to the U.S.'s energy future: deepwater offshore and unconventional resources. These needs should be addressed.

Still, there are significant R&D gaps that the Consortium will not cover that must be supported through R&D funding through the appropriations process:

- Enhanced oil recovery, particularly the interplay of CO₂ flooding with carbon capture;
- Field demonstration and technology transfer of newly developed technologies in topic areas outside those addressed by EPACT; and
- Technology transfer for proven yet under-applied technologies.

Rightly so, there is recognition that alternative energy sources are important to the U.S.'s energy future. It will take time for alternative energy R&D spending to lead to sound and significant sources of alternative fuels. The scientific professionals being seasoned in today's natural gas and oil R&D programs will more than likely be those participating in tomorrow's alternative energy research. The academic pipeline that provides those professionals cannot be stopped up by intermittent starts and stops of R&D funding. Our country deserves better.

WHY THE FEDERAL INVESTMENT IN RESEARCH AND DEVELOPMENT IS IMPORTANT

PTTC primarily serves the upstream domestic energy industry by facilitating the transfer of applied technology between technology developers and independent producers who are the driving forces in the domestic natural gas and oil exploration and production (E&P) industry. Independents drill 90 percent of the U.S.'s natural gas and oil wells, produce 82 percent of the natural gas and 68 percent of oil produced domestically. According to the Independent Petroleum Association of America (IPAA), independent producers have been recently investing 150 percent of their domestic cash flow back into domestic oil and natural gas development. Much of that investment is for proven technology that is essential for developing the more difficult to recover unconventional resources that are a primary target of today's exploration effort.

It's a reality that the "easy" natural gas and oil in the U.S. has already been developed. Those resources that remain—deep water, unconventional gas, enhanced oil recovery, even oil shale—are increasingly complex, requiring both more manpower and new technologies, not to mention a tremendous capital investment. Where will those new technologies come from?

Major oil companies have scaled their R&D back, and what research they do fund is focused on larger international opportunities. The technology provider/service sector R&D dollars logically follow this high volume, high profit mark. Technologies that are developed have some application in mature U.S. producing basins, but they often need adaptation and resizing/simplification. And when they are developed, it is more costly for the service sector to connect with "thousands" of dispersed independents.

Independents are the dominant players in the domestic industry and their human resources have reached critical low levels. The few who do have the capital and human resources—not already dedicated to drilling and production activities—typically do not have the technical experience or knowledge to effectively invest R&D dollars.

Collaborative research, partially supported with Federal funding to keep it focused and broadly applicable, makes good economic sense. History is well documented to show that federally funded R&D has led to significant increases in domestic energy supplies. This research also seasons scientific professionals emerging from the academic pipeline, improving their productivity to successfully exploit natural gas and oil reserves and making America more competitive in global energy markets. This higher productivity leads to more natural gas and oil recovery, faster.

In conclusion the Congress has a responsibility to the United States to take logical actions towards a secure energy future. One of those steps is continuing support for natural gas and oil R&D—to both, recover more domestic oil and natural gas and to feed the pipeline for future scientific professionals.

PREPARED STATEMENT OF THE INTERSTATE OIL AND GAS COMPACT COMMISSION

Chairman Dorgan, Ranking Member Domenici and members of the subcommittee, thank you for the opportunity to submit testimony on the appropriation to the U.S. Department of Energy (DOE) and specifically the Office of Fossil Energy. My testimony represents the views of an organization of governors of 30 member States of the Interstate Oil and Gas Compact Commission (IOGCC). These States account for virtually all of the onshore domestic production of crude oil and natural gas.

The States strongly and unequivocally support an appropriation to the Fossil Energy Research and Development "Gas—Natural Gas Technologies" and "Petroleum—Oil Technology" programs in an amount no less than that appropriated in fiscal year 2005 (\$78.76 million), which was the budget year before the President's budget called for the complete elimination of funding for these vital functions. States strongly oppose the administration's fiscal year 2008 budget request that would terminate these programs, which would also effectively eliminate the DOE's Office of Oil and Natural Gas within the Office of Fossil Energy. This would be a colossal mistake for a variety of reasons, set out more fully below. Taxpayers are very supportive of Federal investments in energy security, and there is no better investment than in Research and Development (R&D).

In spite of the fact that the country operates under a constant threat of another "energy crisis," government is proposing to do less to ensure the Nation's resources are fully produced. The U.S. domestic oil industry today is the Nation's largest single supplier of crude oil, providing about 40 percent of the national demand for oil. The rest is imported—and the percentage of imports grows every year—making us more and more vulnerable to international crises and foreign economic manipulation. Our dependence on others for our energy security has never been greater. However, domestic natural gas suppliers provide about 85 percent of all of the natural gas demand in the Nation, with most imports coming from Canada. The United States even exports natural gas and has an abundant supply.

One thing we can count on, however, is that domestic supplies of crude oil and natural gas are our best hedge against this vulnerability and increasing import dependency. In addition to energy security, there are a myriad of other reasons why domestic production is preferable to imports:

- Our domestic resources are produced under the world's most effective environmental protections, which have been established and are enforced primarily by the States.
- Domestic resources create high-quality jobs here at home and provide the energy that powers our standard of living. For example, few realize that stripper oil wells (wells producing less than 10 barrels per day) account for about one-quarter of the lower 48 States' onshore domestic oil production and stripper gas wells (wells producing 60 Mcf per day or less) about 10 percent of onshore domestic gas production. This is a critical natural resource and it should not be abandoned in favor of imported energy.
- Despite perceptions to the contrary, large quantities of oil and natural gas remain onshore in the United States. These resources represent the most stable and secure energy available. These resources may exist in fields that have already been discovered and await a new technology that results in cost-effective recovery. Or they may lie in reservoirs yet undiscovered due only to a lack of technology appropriate for deeper horizons or greater geologic complexity. The bottom line is vast reserves remain untapped. While recovery rates have increased dramatically in the past 50 years and exciting new tools have been developed for exploration, still more can be done to reach the full production potential for reservoirs.

The U.S. Department of Energy's Office of Oil and Natural Gas, which is funded by the programs set forth above, is the only place in the U.S. Government that is responsible exclusively for oil and natural gas policy. It is also the only place in the U.S. Government that fully understands and is thus able to represent within the administration the critical importance of domestic oil and natural gas to our country, our economy, and our national security. This resident expertise is a national asset—one that is especially important as other agencies embark on rulemaking and take other actions which impact our domestic oil and natural gas industry. Terminating this office and its programs, including its critical Research and Development programs, would be a tragic mistake. For these reasons the IOGCC and its member States strongly support the continued existence and viability of DOE's Fossil Energy Office of Oil and Natural Gas and an appropriation in fiscal year 2008 at least equal to the fiscal year 2005 appropriation.

Turning to critical area of R&D specifically, many experts believe R&D is the most important factor in maximizing the availability and utilization of petroleum resources, especially domestic reserves.

A recent report compiled by the IOGCC confirms the declining trend in R&D expenditures while the country is experiencing a corresponding increase in reliance on imports. Major oil companies once poured millions into research and development. Today, however, many large companies have shifted their focus overseas and offshore. Eighty five percent of the wells in the United States are drilled by independent oil and natural gas producers (producing roughly 40 percent of the domestic oil and 65 percent of the domestic natural gas). Such smaller independents lack both the resources and infrastructure for significant R&D and it is here where government—State and Federal—can fill an obvious void.

The decline of Federal and private support for oil and gas research is well documented. The reasoning for cutting government support seems steeped in politics and a failure to understand the importance of Federal R&D to our domestic oil and gas industry and our energy security. However, this is a new era of uncertainty in our energy security that requires a fresh look at spending priorities.

An IOGCC publication entitled “Who Will Fund America’s Energy Future?” states that “A strong domestic energy policy demands a strong R&D component. As the largest holder of domestic oil and gas resources, the Nation benefits from their production. Domestic production creates wealth for other royalty owners, contributes significantly to State, Federal and local economies and tax bases, offsets imports on a barrel-per-barrel basis, and cuts into trade deficits that are running at record levels.”

If the United States is to maintain its ability to produce its domestic supplies of oil and natural gas, Federal expenditures on R&D must fill the leadership role left behind by private industry. Federal funding on oil and natural gas must increase if the United States is to maintain its ability to produce the domestic oil and natural gas resources our country so desperately needs. But instead the administration’s budget for fiscal year 2008 eliminates oil and natural gas research.

In fact, the proposed budget calls for cutting the petroleum technology R&D program at the very moment that our country could benefit the most from technology breakthroughs that can be applied to our own resources.

Informed taxpayers support funding R&D to protect the environment and produce more energy—precisely the mission of DOE’s oil and gas research program. Much promising work lies ahead including developing new methods of drilling that reduce impacts to the environment; inventing new materials that allow better, faster drilling; creating new chemicals and biological tools that increase production; identifying better uses of renewables in the production of fossil fuels; minimizing waste; and creating high quality jobs.

There have been many success stories from the DOE oil and gas research program. One recent, striking example of how DOE makes a real contribution to advances in environmental protection, energy production and innovation comes from a DOE–IOGCC project in California. Under DOE’s Preferred Upstream Management Practices (PUMP) program, the project is proving that unmarketable gas can be used on site to provide power to oil wells previously idle. At the same time, the project is meeting the strict air quality standards in the Los Angeles area. DOE funding for this project was matched 100 percent by other partners, which enabled the government to double its R&D investment. Every government program investment should be as effective.

This is but one example of DOE helping provide leadership in demonstrating a technology that may have much broader implications for operators in 30 other oil and gas producing States who now won’t have to reinvent the well in order to satisfy environmental restrictions and the urgent need for domestic energy.

Through careful regulation, IOGCC member States have helped maximize production and minimize wasteful practices that can lead to the premature abandonment of reservoirs. States have also developed innovative approaches to deal with temporarily idled wells, created incentives that maximize production and supported R&D that improves recovery rates and lowers finding costs.

Going forward, the IOGCC believes that a balanced and effective energy policy must encompass a number of fundamental principles, with R&D serving as a centerpiece in each. Other guiding principles include conservation of resources both in the producing and consuming sectors, encouraging domestic production to create economic growth and stability, increasing access to public lands for responsible development and prolonging production from wells at economic risk.

We strongly encourage the subcommittee’s support of funding oil and gas research and development as a positive step toward our national security today and our energy security in the future.

PREPARED STATEMENT OF STRAND ENERGY, L.C.

Dear Sirs or Madams: I am the project manager for a small DOE award (DE-FG26-00BC15254) granted to Strand Energy, L.C. (Strand) under the Technology Development with Independents program which is administered by the National Energy Technology Laboratory (NPTL). This \$75,000 grant is for the optimization and implementation of an improved oil recovery project in a small oil field operated by Strand and located in southwest Arkansas, the St Mary Barker Sand Unit (SMWBSU).

I am writing you to present testimony concerning the benefits of this award in fostering the development of technical skills for Strand Energy that are allowing us to add value to this domestic energy asset through local and regional job development and increased reserves that are benefiting the citizens of Arkansas through increased tax revenues and royalties. Specifically, the award has allowed Strand engineering and geological staff to develop a skill set in the science of reservoir modeling; computer characterization and simulation of reservoir processes. This is guiding Strand in our efforts to reduce development risk while increasing oil reserves for this property.

Although less than \$5,000 of the \$75,000 award has been used to date it is expected the remainder of the award will be invested during 2007 and early 2008 in new technologies for this active small domestic independent exploration, exploitation and production company operating in the southwestern U.S. and specifically in adding further value to the SMWBSU. Strand Energy and our Partners have invested to date in excess of \$600,000 in equipment and well workovers in the SMWBSU property to implement the improved oil recovery project.

The DOE-NPTL grant program requires that technologies and practices developed as a result of the project award be published publicly to the domestic oil and gas independents community. This will further benefit development of our domestic energy resources through improved oil recovery projects implemented by other active operators as well as by Strand as we acquire additional mature oil properties for redevelopment through secondary and tertiary recovery processes and practices experienced successfully at the SMWBSU field.

I hope, as well as do the professors and graduate students I have worked with on this project, that the DOE will be allowed to continue the administration and development of additional programs like the NPTL's Technology Development with Independents in the future.

 PREPARED STATEMENT OF THE COAL UTILIZATION RESEARCH COUNCIL

CURC submits this testimony in support of an increase of \$288 million in the fiscal year 2008 Department of Energy Fossil Energy budget request, as follows: \$88 million for the Coal R&D program (for a total of \$333.5 million); and \$200 million for the CCPI program (for a total of \$273 million). CURC supports the administration's request to fund FutureGen at \$108 million. Details supporting these recommendations are discussed below.

INTRODUCTION

Coal is our country's most abundant, low cost source of fossil energy providing more than one-half of the electricity generated domestically and capable of supplying transportation fuels, chemical feedstocks, and pipeline quality synthetic natural gas. The challenge has been to sustain cost effective ways to use this abundant domestic energy resource in a manner that continues to provide low cost power and products for the American consumer while meeting environmental goals and national energy security needs. In large measure, technology is the means to these ends.

More than three decades of experience has proven that any barriers to the use of coal can be overcome through the collaborative efforts of industry and government in jointly pursuing technology solutions. Now, global warming and concerns that the use of fossil fuels is an important factor in causing changes to the climate are a central focus of technology development. Equally important is the need for reliable, safe, and cost effective energy (and electricity) for the American consumer. These dual needs should be the focus of the Department of Energy's clean coal program.

In light of the growing concerns over climate change and the need for reliable, domestically secure energy resources, it is vitally important that the DOE's technology research, development, demonstration and deployment programs, undertaken in partnership with the private sector, be robust and occupy a key spot on the national agenda. Unfortunately, even while there is acknowledgement over the impor-

tance of technology, there is not the corresponding commitment in dollars and focus. The DOE fiscal year 2008 budget request must be focused specifically upon the dual needs of energy security and achieving our Nation's environmental goals, and that budget must be dramatically increased if we are to succeed in developing technologies to address these needs.

THE CLEAN COAL TECHNOLOGY ROADMAP

The CURC–EPRI Roadmap defines the steps necessary to achieve near zero emissions from coal use, including the cost effective capture and long-term storage of CO₂. The Roadmap includes a technology development program for carbon management, defined as the capture and storage of carbon dioxide. The Roadmap targeted two approaches to carbon management: (1) higher efficiency; and (2) capture and storage of CO₂ in geologic reservoirs. The goal of the Roadmap is to have, by 2025, new combustion and gasification based systems that can reduce emissions of traditional pollutants an order of magnitude beyond the performance of current technologies, capture and store 90 percent or more of the carbon in the coal, achieve improved efficiency over today's systems, and do all of these things while maintaining competitive low cost power generation. Our analysis suggests that the combined Federal and industry investment necessary to achieve the goals of the Roadmap is approximately \$11 billion between now and 2025.

When the Roadmap costs were first estimated, the cost of steel and other key power plant commodities had been relatively stable. In the last 2 years, these prices alone have risen by more than 50 percent and there is every likelihood that such prices will not lower. This means that the estimate of the Roadmap's projected cost to develop and demonstrate these improved technologies will likely increase dramatically as well. That analysis is underway, but was not completed in time for this written statement. At a minimum, demonstration programs will be most clearly impacted by these increased costs. Secondly, while much of technology development simply requires time to initiate and complete, it is also true that focusing efforts upon carbon capture and storage (CCS) technologies and augmenting funding in related areas will best insure the availability of such technologies in a timely fashion. Adequate funding for CCS technology development and demonstration is critical to addressing climate change; reduced funding levels that stretch out the time required to complete RD&D is not an option.

The "good news" finding from the Roadmap is that there is a clear pathway to reach our technology performance goals for coal, and the ultimate technology products will be highly competitive if we conduct the needed RD&D. And industry stands ready to contribute its part, in money and intellectual resources, to the program of collaborative research. The "bad news" is that government funding, to date, has not been adequate and moreover, the fiscal year 2008 budget request is not sufficient. In sum, CURC believes that current funding for R&D is substantially inadequate, and funding for demonstrations is totally inadequate.

Recognizing the fact that we are operating within a severely constrained budget, and Congress is intending to develop legislation to address global warming, CURC believes that funds provided for the entire DOE Clean Coal Program should focus primarily on those technology development programs that will enable both short- and long-term CCS technology development and an extended near term program for mercury control technology. Activities that do not support these activities should be considered lower priority and only funded if additional funding is made available for those activities.

RECOMMENDATIONS

Using the roadmap as a tool to identify our Nation's coal research, development and development (RD&D) needs, CURC has examined the President's fiscal year 2008 budget request for coal and submits the following recommendations.

Clean Coal Power Initiative (CCPI).—The funding proposed for the CCPI, \$73 million in fiscal year 2008, is wholly inadequate to meet the needs that this program was created to address. This is DOE's only program that can support the demonstration of CO₂ capture technologies that might be retrofitted to the existing fleet of coal fired power generation. Equally important, funding for this program will support demonstrations of CO₂ capture and storage technologies integrated with advanced combustion and IGCC based systems. The CURC–EPRI Roadmap recommends approximately \$5.6 billion in funding for these types of demonstrations through 2015. The President's request is clearly not enough to fund the scale and magnitude of the projects needed. CURC recommends that funding for CCPI in fiscal year 2008 be increased by an additional \$200 million. Combined with other resources currently available for the program, this should be sufficient to allow a 3rd

CCPI solicitation for project proposals to be issued in calendar year 2007, with anticipated awards made in 2008. CURC also recommends that the next CCPI solicitation primarily focus on large scale, fully-integrated power generation and carbon capture and storage demonstrations.

FutureGen.—The Roadmap recognizes the benefits to technology development that the FutureGen project can provide and CURC supports this important R&D program that can serve as a test bed for validating technologies developed out of the DOE's R&D program. To succeed as originally envisioned, basic R&D activities must continue to provide the technology components needed in FutureGen. The administration seeks to use previously appropriated funds to support FutureGen in fiscal year 2008, which CURC supports. The administration also seeks to rescind \$149 million in prior year appropriations. CURC recommends that this \$149 million be deferred for future use. The FutureGen Industrial Alliance has stated previously that FutureGen, CCPI and the coal R&D programs each must be adequately funded because all of these programs are necessary to support commercial deployment of advanced clean coal technologies. CURC also endorses this position.

Coal R&D Program.—The coal R&D program should be focused on technology R&D designed to address efficiency improvements to reduce CO₂ emissions and on alternative CO₂ capture technologies that might provide long term technology options, one result of which would be to drive down the costs of carbon management. CURC has concluded that the basic R&D needs identified in the CURC–EPRI Roadmap cannot be met with the fiscal year 2008 budget request for the coal R&D programs. CURC recommends that funding in fiscal year 2008 be increased by \$88 million, without funding for earmarks, and be directed to the coal R&D program as follows:

—*Innovations for Existing Plants (IEP).*—Much progress has been made in developing and deploying technologies to reduce emissions from existing coal-fired power plants. However, there is a need to focus additional attention on mercury emissions control. Expert opinion concluded initially that controlling and capturing mercury emitted from combusting bituminous coals would be the least problematic, while the lower rank (western) coals would be most challenging. With this focus, control problems related to western coals have been solved, but unexpected issues arose with bituminous coals and problems remain in that area. It is imperative that funding for this program be restored to \$25 million in order to continue long-term (more than 30 day) mercury control field tests so that industry can be equipped with the technologies necessary to comply with the USEPA Clean Air Mercury Rule.

—*Carbon Sequestration.*—CURC recommends an increase of \$30 million to support the front end of a multi-year carbon sequestration RD&D program. CURC recommends that DOE expand the focus of the program that is supporting novel approaches to capturing CO₂ from the existing fleet of coal plants as well as pre- and post-combustion and oxy-coal combustion. CURC also recommends that sufficient funds be made available to initiate or complete the Phase II CO₂ injection pilot-scale tests in reservoirs other than oil/gas reservoirs, unless tests in oil and gas reservoirs would add significant knowledge to the monitoring, measurement and verification of injecting CO₂ into other reservoirs. It is very important that these recommended additional funds support those projects that advance the science of sequestration in reservoirs other than oil/gas reservoirs, which is a commercial technology in use today. Additionally, the DOE budget justification indicates 3 or 4 large scale CO₂ injection demonstrations will be initiated to validate carbon storage techniques through Phase III of the regional partnerships. CURC supports the DOE shift to Phase III, but recommends that DOE conduct numerous large scale demonstrations in a variety of permanent storage reservoirs other than applications for enhanced oil recovery, which is a commercial activity. These demonstrations need to be undertaken in multiple regions of the country with uniquely different reservoir characteristics. Finally, every effort should be made to couple Phase III demonstrations with coal-based energy projects that include CO₂ capture (if such CCS projects are undertaken then significantly more funding for demonstrations will be required).

—*Advanced Turbines.*—This program should be increased by \$12 million to insure that the development of the hydrogen turbine is not delayed. The hydrogen turbine is an essential component of FutureGen. It is also important that other advanced turbines that will use synthesis gas derived from coal should be supported, as well. In both instances, such turbines are essential to increase plant efficiencies and reduce carbon emissions. The primary objective of this program must be to focus upon the development of large scale turbines needed to support advanced generation coal power facilities. University research programs to ensure long term technology development are also important.

—*Advanced Research*.—CURC recommends an additional \$8 million for ultra supercritical materials research activities. This program, which has been under funded for the past 2 years, supports the development of high temperature materials that will enable boiler systems and steam turbines to become more efficient, resulting in the reduction of power plant CO₂ emissions. Advanced materials derived from a successful high temperature materials program will enable efficiency gains which, in turn, will reduce CO₂ emissions. Therefore, this program is very important for its applicability to new ultra supercritical and IGCC systems.

—*IGCC*.—CURC recommends an additional \$5 million to continue important ongoing R&D at the Power Systems Development Facility and on alternative gasification based systems that are critical to supporting both FutureGen and future gasification technology needs.

—*Coal to Liquids*.—CURC recommends an increase of \$8 million to focus on coal to liquids activities. Any funding increase should be directed towards activities that will achieve the dual goal of increased energy security and reduced CO₂ emissions from coal to liquids facilities.

CURC is concerned that the practice of earmarking funds undermines the competitive nature and fundamental goals of the DOE clean coal program. Understanding that some earmarks may be consistent with the DOE program goals and those of the CURC-EPRI Roadmap, CURC believes that Congress and DOE should consider a set of principles to govern the earmark process. These principles would insure that the earmarks have been reviewed by Congress through hearings or through other measures to make certain they are consistent with the goals of the program and focus on the development of critical CCS technologies.

CONCLUSION

Continued long term use of coal, and realization of its benefits, will only occur if an extensive commitment to technology development allows coal to overcome environmental challenges. The fiscal year 2008 budget request does not reflect such a commitment. Congress must support the development of FutureGen, and substantially increase funding for the R&D and CCPI programs with broad support for the development of both combustion- and gasification-based technologies, if we are to develop effective technology solutions to address climate change.

PREPARED STATEMENT OF THE ELECTRIC DRIVE TRANSPORTATION ASSOCIATION

The Nation has come to understand that achieving real national security and addressing climate change will require a concerted effort to end America's oil dependence. The electric drive technologies being developed by the Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE), in particular, the Vehicle Technologies and Hydrogen and Fuel Cell Technologies programs, are integral to the success of that effort. As you assemble the fiscal year 2008 Energy and Water Development budget, we respectfully request that you fund these programs at levels commensurate with their major contribution to ending our oil dependence.

At the Electric Drive Transportation Association (EDTA), our mission is promotion of electric drive technologies, which reduce petroleum consumption and decrease emissions of greenhouse gases and of air pollutants. Using electricity, by itself or in conjunction with another fuel, electric drive technologies power the wheels of vehicles that are being used today throughout the transportation sector, including passenger vehicles, trucks, tractors, locomotives and ground support equipment. Electric drive also powers transportation infrastructure, such as truck refrigeration and truck stop electrification facilities, which allow idled trucks to power with clean, alternative electricity.

Electric drive technologies also complement the national effort to increase the use of biofuels with their ability to use renewable fuels in hybrid applications and to use renewable power in exclusively electric operation.

Multiple fuel and vehicle technologies, including hybrids, battery electric vehicles, fuel cell vehicles, and plug-in versions of these electric drive vehicles, need to be part of the national plan to end America's oil dependence. A substantial and consistent level of Federal support for research, development and deployment is essential to moving these technologies fully into the mainstream.

EERE's Hydrogen and Fuel Cell Technologies Programs and the Vehicle Technologies Programs are the leading edge of the Federal effort to advance these technologies and to bring us closer to our energy goals. For instance, increased energy storage technologies, such as advanced batteries, are the foundation of the next wave of electric drive. They are the key to commercialization of plug-in electric

drives and will accelerate advances in all electric drive vehicles. The administration's \$41 million request for energy storage research and development is a step in the right direction. However, it is too small a step when considered against what is at stake and what can be achieved.

For Fuel Cell and Hydrogen Technology Programs, the administration wisely maintains its overall commitment to hydrogen and fuel cell development, but the request falls short in two key areas. In the Technology Validation program, hydrogen infrastructure and fuel cell systems are certified under real world conditions. This work guides research agendas and helps establish the "real world" data collection necessary to develop fuel cell vehicles. However, DOE's allocation of fiscal year 2007 funds for this work is unclear at this time and the \$30 million fiscal year 2008 program request is \$3 million lower than the fiscal year 2006 appropriated level and nearly a third (\$9.5 million) lower than the 2007 request. We urge you to provide the appropriate guidance and ensure continuous and credible funding for the Technology Validation program's critical work.

An additional tool in speeding commercialization of hydrogen fuel cells was created in the Title VII Federal procurement programs of EPAct05. The programs were designed to use the power of the Federal Government to promote increased overall fuel cell production and reduce costs by helping Federal agencies defray the incremental costs of purchasing hydrogen energy systems and fuel cell vehicles and equipment. Unfortunately, these market transition programs have not yet been funded and were not included in the administration's fiscal year 2008 request.

We ask you to implement the EPAct05 procurement programs with sufficient funds to maximize agencies' hydrogen and fuel cell purchases and leverage the Federal Government's purchasing power to increase and build the market for these clean, efficient energy systems.

The Clean Cities program is another deployment program with a record of success. The Clean Cities program consists of voluntary local and regional coalitions working to build clean and efficient fleets, including schools, airports, and municipal buses, with advanced technology and alternative fuel vehicles. The program's ability to help more communities reduce petroleum consumption is limited only by lack of resources.

The administration's \$9.6 million request for the program is a welcome increase over the prior year's request, but still represents a missed opportunity for oil savings and clean technology deployment. We request that you provide technology- and fuel-neutral funds above the requested level to maximize the program's proven ability to reduce petroleum use and emissions while helping to commercialize new technologies, fuels and infrastructure.

Other important demonstration and deployment efforts are advanced in the EPAct fleet programs. By requiring the use of alternative vehicles and fuels in Federal, State and utility fleets, the EPAct program requirements reduce petroleum consumption while helping to demonstrate and build markets for new technologies. Implementation of the EPAct05 alternative compliance waiver, which recognizes hybrid vehicles in compliance efforts for the first time, will also be part of the program's fiscal year 2008 responsibilities.

The administration's request of \$1.8 million will not support effective implementation of these key fleet programs. We request that you provide funding at a level that will allow the program to work as intended and to secure the oil savings, environmental benefits and new technology deployment that Congress intended.

EDTA appreciates the committee's support for EERE's vehicle and hydrogen and fuel cell technology programs. We ask that you make the necessary investments to help transform the fuel consumption of the U.S. fleet with electric drive technologies and finally break our dependence on oil. Only then can we achieve real national security and a cleaner and more sustainable environment.

PREPARED STATEMENT OF THE AMERICAN SOCIETY FOR MICROBIOLOGY

The American Society for Microbiology (ASM) is pleased to submit the following testimony on the fiscal year 2008 appropriation for the Department of Energy (DOE) science programs. The ASM is the largest single life science organization with more than 42,000 members. The ASM mission is to enhance the science of microbiology, to gain a better understanding of life processes, and to promote the application of this knowledge for improved health and for economic and environmental well-being.

The DOE Office of Science supports research that drives discovery and innovation to create alternative energy sources, efficient energy production, and a sustainable environment. Increased resources for the DOE Office of Science are necessary to meet these challenges and the ASM supports the President's request of \$4.398 bil-

lion for the DOE Office of Science, an increase of \$602 million over the fiscal year 2007 funding level.

The requested increase is consistent with the American Competitiveness Initiative (ACI) and the Advanced Energy Initiative (AEI). DOE supported research on microbial biology is essential in meeting the goals of these initiatives. Microbial biology research is critical for advances in bioenergy. Microbial research contributions includes:

- Novel bioenergy production methods, and improved biofuel production by microbes. Different microbes produce a variety of energy products such as ethanol, hydrogen, oils and even electrical current. Discovery of new processes that use microbes and microbes that enhance the efficiency of these processes, genetic engineering microbes that achieve this goal and learning to manage consortia of microbes to optimize biofuel production are all needs that will enhance the economics of bioenergy.
- Discovery of novel plant cell wall decomposition enzymes. Microbes have a tremendous diversity of undiscovered biochemical capabilities, including enzymes that naturally recycle biomass. Capturing this diversity for more efficient release of plant carbon for conversion to energy is a central need for better bioenergy processes.
- Efficient, sustainable plant-soil systems for biofuel production. Healthy, low-cost, and productive plant communities require a supportive soil microbial community to recycle nutrients, protect against root pathogens, produce plant growth factors, fix nitrogen and aid soil structure. Furthermore, management of these plant-soil systems must be done to minimize greenhouse gas production.

The ASM strongly encourages DOE to support a balanced research portfolio as it seeks to increase production of bioenergy sources. While the ASM recognizes that the AEI and ACI are critical for meeting the Nation's competitiveness and energy challenges, it also encourages the DOE to maintain support for other science and technology solutions to long-term environmental challenges, such as climate change and environmental remediation.

BIOLOGICAL AND ENVIRONMENTAL RESEARCH

Within the DOE Office of Science, the Biological and Environmental Research (BER) division uses peer-reviewed research at national laboratories, universities, and private institutions to build a science, technology, and knowledge base for understanding and harnessing the capabilities of microbial and plant systems that will lead to cost-effective, renewable energy production, greater energy security, clean-up of legacy wastes, and mitigation of increases in atmospheric carbon dioxide. The ASM supports the President's request to fund the BER at \$510 million, an increase of \$70 million over fiscal year 2007 for base BER programs, with \$75 million directed to GTL Bioenergy Research Centers.

BER research programs such as the Genomic: GTL program, Environmental Remediation Sciences Division (ERSD), the Joint Genome Institute (JGI), and Climate Change programs are instrumental for understanding microbial biology, how microorganisms interact with and respond to their environments, and how microorganisms can be harnessed to produce clean, efficient energy, remove excess carbon from the atmosphere, and help clean up the environment.

The fiscal year 2008 request for BER would support about 1,500 graduate students and post-doctoral investigators at universities and national laboratories. Fellowship programs are also supported by BER for undergraduate and graduate students through its Global Change Education Program. This support for undergraduate and graduate students and post-doctoral investigators is critical for the development of the next generation of scientists, engineers, and science educators.

GENOMICS: GTL

GTL research conducts explorations of microbes and plants at the molecular, cellular, and community levels. The goal is to gain insights about fundamental biological processes and, ultimately, a predictive understanding of how living systems operate. The resulting knowledge base—linked through DNA sequence and freely available—will catalyze the translation of science into new technologies for energy and environmental applications.

Microbes make up the foundation of the biosphere and sustain all life on earth. DOE has sponsored the genome sequencing of key model plants and some 200 microbes relevant for generating clean energy, cleaning up toxic waste from nuclear weapons development, and cycling carbon from the atmosphere.

In May 2006, the National Research Council of the National Academies of Science completed an independent review of the Genomics: GTL program that endorsed the systems biology approach of the program, applauded the research conducted by its grantees, and recommended the formation of interdisciplinary research centers focused on fundamental research addressing DOE mission needs, including bioenergy. The DOE embraced this recommendation, and is currently reviewing proposals for GTL Bioenergy Research Centers. The administration requested that \$75 million be provided in fiscal year 2008 for three of these centers. The ASM believes the GTL Bioenergy Research Centers are an important step forward to addressing national energy needs but they must be supplemented by a vigorous and well funded research effort. Funding for the GTL centers should not be at the expense of the core BER science programs.

ENVIRONMENTAL REMEDIATION SCIENCES DIVISION

The Environmental Remediation Sciences Division (ERSD) sponsors and supports fundamental scientific research to understand the complex physical, chemical, and biological properties of contaminated sites for new solutions to environmental remediation. DOE is responsible for the largest, most complex, and diverse collection of environmental remediation challenges in the Nation.

DOE's remediation challenges occur in the field where highly interactive natural processes, over a broad range of scales, control the fate and transport of contaminants. The ERSD goal is to help provide the basis for development of innovative remediation measures to support decision making critical to long-term stewardship. Of the 144 sites where DOE has remediation, waste management, or nuclear materials and facility stabilization responsibilities, nearly 100 have soils, sediments, or groundwater contaminated with radionuclides, metals, or organic materials.

The ASM is concerned with the steady decline in funding for the ERSD from fiscal year 2004 to fiscal year 2007. The ERSD research conducted on microbes is an essential component in developing effective, sustainable remediation technologies. ASM urges Congress to provide at least the President's fiscal year 2008 request of \$97.4 million for ERSD.

JOINT GENOME INSTITUTE

The DOE Joint Genome Institute (JGI) has completed the sequence of the 100 microbial genomes and released this information for the benefit of the global research community. The JGI is the primary source of genomic data for non-medical microbiology and immensely benefits the community.

The JGI's Community Sequencing Program (CSP) devotes all of its sequencing capacity to the merit-reviewed sequencing needs of the broader non-medical scientific community, while addressing the DOE mission-relevant criteria of energy production, carbon sequestration, research and bioremediation research, and low dose radiation research. JGI is an integral component as the area of metagenomics for both energy and carbon sequestration grows.

The ASM supports the President's fiscal year 2007 request of \$62 million for JGI, a \$10.5 million increase over fiscal year 2006, and a \$2 million increase over the President's fiscal year 2008 request.

CLIMATE CHANGE RESEARCH

The mission of the Climate Change Research subprogram is to provide the scientific base for making predictions and assessments of the potential effects of greenhouse gases and aerosol emissions on climate and the environment, such as abrupt climate change, understanding the global carbon cycle and the development of approaches for enhancing biological carbon sequestration in terrestrial ecosystems. The ASM supports the President's fiscal year 2008 request of \$138 million for Climate Change Research.

Research exploring the responses and behavior of microorganisms in ecosystems is necessary in understanding the changes in the expanded plant and animal systems. Greater collaboration with the Genomics: GTL program and climate change research would provide a stronger basis for understanding the core elements of the ecosystem and its responses. The ASM urges greater linkages between the GTL program and Climate Change Research, similar to the current collaborative relationship between GTL and the ERSD.

WORKFORCE DEVELOPMENT

Cultivating a well-trained workforce of teachers and scientists is vital for maintaining our Nation's competitiveness, and meeting the challenges of the future. The

ASM supports the President's request of \$11 million for Workforce Development for Scientists and Engineers within the DOE Office of Science, through undergraduate research internships, graduate and faculty fellowships, and pre-college activities. These programs build links between the national laboratories and the science education community, provides mentor intensive research experiences at national laboratories for undergraduate and graduate students, and encourages middle and high school students in the fields of math and science.

CONCLUSION

The ASM supports the President's 16 percent increase for the DOE Office of Science in fiscal year 2008, and urges Congress to provide adequate funding for the BER, including ERSD, Genomics: GTL, JGI, and Climate Change Research programs, which are essential in meeting DOE's mission. The DOE Office of Science programs enhance U.S. competitiveness through fundamental research for advanced scientific breakthroughs that will revolutionize our approach to the Nation's energy and environment challenges.

The ASM appreciates the opportunity to provide written testimony and would be pleased to assist the subcommittee as it considers the fiscal year 2008 appropriation for the DOE.