WATER SUPPLY AND RELIABILITY: THE ROLE OF WATER RECYCLING

OVERSIGHT HEARING

BEFORE THE

SUBCOMMITTEE ON WATER AND POWER

OF THE

COMMITTEE ON RESOURCES
U.S. HOUSE OF REPRESENTATIVES

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C O N T E N T S

OVERSIGHT HEARING ON WATER SUPPLY AND RELIABILITY: THE ROLE OF WATER RECYCLING

Thursday, March 27, 2003
U.S. House of Representatives
Subcommittee on Water and Power
Committee on Resources
Washington, DC

The Subcommittee met, pursuant to notice, at 10:04 a.m., in room 1324, Longworth House Office Building, Hon. Ken Calvert [Chairman of the Subcommittee] presiding.

Present: Representatives Calvert, Tancredo, Osborne, Renzi, Pearce, Nunes, Napolitano, Inslee and Baca.

Also Present: Representative Gonzalez.

STATEMENT OF THE HON. KEN CALVERT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. CALVERT. The oversight hearing of the Subcommittee on Water and Power will come to order.

The Subcommittee is meeting today to hear testimony on the role of water recycling and reliability. Under Committee Rule 4[g], the Chairman and Ranking Minority Member can make opening statements.

Recent drought conditions, critical water shortage, and increasing water competition are requiring communities to look beyond the traditional ways of developing and maintaining dependable and safe water supplies. Nontraditional water supply projects are being demonstrated nationwide and implemented to a greater extent than ever before in response to increasing demands on limited, high-quality water supplies.

This hearing is one of a series of hearings that will focus on such mechanisms and projects that seek to improve water supply availability and reliability in not only the Western United States but throughout the country. It is also part of our examination of how Federal resources can be most effective in developing new water supplies while protecting our environment. Today we will focus on how communities are meeting their water needs through recycling.

In water deficit regions, such as southern California, recycled water is considered a dependable, controlled, and renewable source of water, which is often utilized in the same context as traditional water supplies. Overutilization of the Rio Grande, California's need

to comply with the Colorado River 4.4 plan, and a need to decrease diversions from environmentally sensitive waters, have helped us to become acutely aware that expanded water reuse will be a critical component of a comprehensive water management solution. Water recycling allows communities to become more drought resistant and less dependent upon imported and traditional water sources.

Today, we have the privilege of hearing from several leaders who have first hand knowledge of successful water reuse projects. I thank the panel for being here today and look forward to hearing your views on water recycling and your vision of an appropriate Federal responsibility in this area.

[The prepared statement of Mr. Calvert follows:]

Statement of The Honorable Ken Calvert, Chairman, Subcommittee on Water and Power

Recent drought conditions, critical water shortages and increasing water competition are requiring communities to look beyond the traditional ways of developing and maintaining dependable and safe water supplies.

Non-traditional water supply projects are being demonstrated nationwide and implemented to a greater extent than ever before in response to increasing demands on limited high quality water supplies.

This hearing is one of a series of hearings that will focus on such mechanisms and projects that seek to improve water supply availability and reliability in not only the Western States but throughout the country. It is also part of our examination of how Federal resources can be most effective in developing new water supplies while protecting our environment.

Today, we will focus on how communities are meeting their water needs through recycling. In water-deficient regions such as southern California, recycled water is considered a dependable, controlled, and renewable source of water which is often utilized in the same context as traditional water supplies.

Over-utilization of the Rio Grande, California's need to comply with the Colorado River 4.4 Plan, and a need to decrease diversions from environmentally sensitive waters have helped us to become acutely aware that expanded water reuse will be a critical component of comprehensive water management solutions. Water recycling allows communities to become more "drought resistant" and less dependent on imported and traditional water sources.

Today, we have the privilege of hearing from several leaders who have first-hand knowledge of successful water reuse projects. I thank the panel for being here today and look forward to hearing your views on water recycling and your vision of the appropriate Federal responsibility in this area.

It is now my privilege to recognize Mrs. Napolitano, the Ranking Democrat Member, for her opening statement.

STATEMENT OF THE HON. GRACE NAPOLITANO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mrs. NAPOLITANO. Thank you, Mr. Chairman, for convening this hearing on water recycling. I am eternally grateful to you for opening the door so that we can move on this very important issue for not only California but all the southern region of the United States.

It is entirely appropriate that this Subcommittee take the initiative to learn more about water recycling and explore other uses of technology that can help improve and stabilize water supplies not only, as I said, in California and the southwest, but in many other states that are facing a critical shortage of water.

I trust that today we will hear firsthand from witnesses who are already successful in making and using recycled water to improve

their communities and quality of life, improve business, many things that affect our everyday life. We also will develop a better understanding and learn more about the frustrations that our many community leaders and water districts have faced as they have tried to obtain Federal financial assistance for their projects under Title XVI, Public Law 102-575.

The Title XVI water recycling program offers tremendous potential to help solve problems of water supply shortages and water use conflicts in some critical areas of the western States. It is, indeed, frustrating that this administration has little or no interest in this program. They keep decimating the budget and I think it's important for us to bring this to light and show how important, how valuable, how critical the water is, the recycled water and the water we use is to the many states that have benefited from it. We want to be sure that, as the fresh water supply pressures and demands mount throughout the United States, especially in our western States, that we do not ignore our most valuable entire class of water development options.

Mr. Chairman, again your leadership is laudable and very encouraging to me, and I agree with your proposal to use our Subcommittee hearing process as a means to thoroughly investigate how we can help bring to light how our local governments successfully apply technologies to their water supply programs. I look forward to hearing from our witnesses and welcome all of you.

Thank you, Mr. Chairman.

Mr. CALVERT. Thank you.

Our colleague, Mr. Gonzalez from Texas, is here with us today. I would ask unanimous consent that Mr. Gonzalez be allowed to sit with us and be able to question the witnesses. Without objection, so ordered.

Mr. Gonzalez, we have a special guest from San Antonio, and I understand you would like to introduce him. You are recognized.

STATEMENT OF THE HON. CHARLES A. GONZALEZ, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. GONZALEZ. Thank you very much, Mr. Chairman, and Ranking Member Napolitano, members of the Committee. First of all, thank you for allowing me to sit up here with you.

It is a great privilege and pleasure today to introduce one of my constituents, General Gene Habiger, who will actually be testifying today. The General became president and CEO of the San Antonio Water System in 2001. Prior to his service with SAWS, General Habiger served 35 years with the United States Air Force, rising to the rank of a four-star general, and served as Commander in Chief of the U.S. Strategic Command, where he was responsible for all United States Air Force and United States Navy Strategic Nuclear Forces.

As Commander in Chief of the Strategic Command, he established an unprecedented military-to-military relationship with his Russian counterparts that dramatically improved relationships between the nuclear commands of the United States and Russia. His work in this area was highlighted by both "60 Minutes" and CNN.

After retiring from the United States Air Force, he served as the Department of Energy's security tzar, where he was responsible for

implementing the Secretary's security reform plan and changing the security culture at the Department of Energy.

General Habiger's tenure at SAWS has seen the long overdue fluoridation of the San Antonio water supply, as well as the aggressive development of water recycling efforts. Additionally, it is not surprising, given General Habiger's career, that SAWS quickly developed an effective security and cyber security plan after 9/11. I am sure we're going to have him testify before Homeland Security. He was the right man, at the right time, at the right place.

San Antonio, like most of Texas, faces serious, long-term water supply challenges that will inevitably endanger its economic growth in the future if they are not handled now. The San Antonio Water System under the General has faced these challenges head on, both in a visionary yet practical way. San Antonio has been very fortunate to have the contribution of General Habiger's talent and experience at this critical time, and I thank you for holding these hearings and I think you're going to find his testimony informative and refreshing.

Mr. CALVERT. I thank the gentleman.

Any other opening statements? The gentleman from Arizona.

STATEMENT OF THE HON. RICK RENZI, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ARIZONA

Mr. RENZI. Mr. Chairman, thank you. I just want to welcome from my home State of Arizona the Honorable Peggy Neely. Thank you so much for your testimony today. I know your expertise is going to be invaluable to us today. Coming from the desert community of Arizona, it's an absolute that we must maximize every drop of water, and your experience in that is something that I'm looking forward to hearing.

As you know, up in Flagstaff, Arizona we're trying to find ways to recycle our water, and in particular to use it to make snow. There's a real controversy up there, whether that water is pure enough, whether it contains carcinogenics. Recently we are finding out that it is pure water. It is going to be a quality water supply that we'll be able to use to make snow up there.

In addition, I ran on a platform of conservation of water, trace area uses of water where we grow fish, and then use that water for aquaculture to grow plants, and then sell the water to the golf courses, particularly up there in the Prescott area. So for me, it's a real valuable lesson to have you here today, and I welcome you from my home State.

Thank you, Peggy.

Mr. CALVERT. I thank the gentleman.

Any other opening statements? Mr. Pearce.

STATEMENT OF THE HON. STEVAN PEARCE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW MEXICO

Mr. PEARCE. Thank you, Mr. Chairman.

The concept of water reuse is especially important all through the West. In New Mexico, we have a source of water that in the State legislature I began to submit legislation for, and that is produced water from oil wells. The Pecos River runs through the

eastern side of my district, up above the Pecos River, and some small hills. We have produced water that is actually cleaner, except for the hydrocarbons, and has less salt content than the Pecos River. Current regulation requires that we dispose of that water in a salt zone so that the water is contaminated then to about 200,000 parts per million instead of about 1,000 parts per million. So the next time we clean that water up, Mr. Chairman, it's going to be extremely expensive.

I think that, for the West, that it is not enough to recycle water. We have got to begin to clean up these new sources of water and to use the brackish waters that are available underneath the Earth's surface.

Mr. Chairman, I look forward to working with you on this Committee and thank you for calling this hearing.

Mr. CALVERT. I thank the gentleman.

Mr. PEARCE. Thank you.

Mr. CALVERT. We have an extensive panel today, and we certainly want to hear from everyone. I would state that we attempt to try to stay within the 5-minute rule, especially when we have such a large panel, so we would appreciate your attempting to do that.

Miss Betsy Cody, Specialist in Natural Resources, Congressional Research Service, is with us today. The Honorable Peggy Neely, Councilwoman from Phoenix, Arizona; General Eugene Habiger, United States Air Force [Retired], President and CEO of the San Antonio Water System; Mr. Joseph Grindstaff, General Manager, Santa Ana Watershed Project Authority, accompanied by Mr. Richard Atwater, CEO and General Manager of the Inland Empire Utilities Agency; Mr. Mike Gritzuk, the First Vice President, WateReuse Association; and Mr. Doug Scott, Director of the U.S. Water/Sewer Group Coordinator, Fitch Ratings.

With that, I would now recognize Miss Cody for your 5-minute testimony. There are some lights on the table that indicate when your time has concluded. Certainly any additional information will be included in the record.

With that, I recognize Miss Cody.

STATEMENT OF BETSY A. CODY, SPECIALIST IN NATURAL RESOURCES POLICY, CONGRESSIONAL RESEARCH SERVICE

Ms. CODY. Good morning, Mr. Chairman, and thank you for the opportunity to appear before the Subcommittee today.

I should say at the outset that CRS's comments are for background and analytical purposes only, as CRS takes no position on pending legislation or amendments to existing programs.

In providing an overview of the Federal Government's involvement in wastewater reclamation, I would like to submit for the record, with your permission, of course, a CRS report that describes current Federal water supply and treatment programs.

Mr. CALVERT. Without objection, so ordered.

[NOTE: The CRS Report entitled "Federally Supported Water Supply and Wastewater Treatment Programs" updated March 25, 2003, has been retained in the Committee's official files.]

Ms. CODY. This report also describes the Federal Government's historical role in providing assistance for municipal water projects.

Although my testimony will focus on the Bureau of Reclamation's reuse and recycling program, Title XVI, it is important to note that to date the States have been most active players in pursuing water reuse technologies. In particular, Florida and California, in partnership with other private and public entities, appear to have pretty well-established water reuse programs, although growing programs.

It appears that there are more than 460 recycling projects in Florida, and more than 230 in California. Although it is not clear how many projects there are nationwide, some have estimated that they number close to 1,500.

I focus today on the Bureau of Reclamation's Title XVI program because it is the only active Federal program providing localities with financial and technical assistance for the development of water reclamation and reuse facilities. Although both Corps and the EPA have some limited authority to provide assistance to local entities for recycling projects, neither has an established, regularly funded program for these activities.

The genesis of the Bureau's Title XVI program appears to have been the longstanding drought of the late 1980's and early 1990's. The drought hit California and the Southwest particularly hard. As such, this Committee spent much time debating Federal water supply policies. The result of several years effort in addressing these issues was the Reclamation Projects Authorization and Adjustment Act of 1992.

While much attention has been given to Title XXXIV of that Act, the CVPIA, Title XVI authorized five reclamation water reuse and recycling projects. Additionally, the Act authorized some studies, including a comprehensive reuse study, for Southern California. The latter appears to provide specific statutory authority to activities that were underway in 1991. And those were related to an announcement by Secretary Lujan for a comprehensive water reuse initiative for Southern California to potentially decrease the area's dependence on imported water supplies from the Colorado River.

Title XVI has since been amended six times since 1992, resulting in a total of 27 authorized projects. To date, the Bureau has undertaken planning, design, and engineering activities on 18 projects. The Bureau has largely completed its funding obligations for three projects, two in California and one in Utah. Total obligations and expenditures for the Bureau's Title XVI program are expected to hit about $285 million by the end of 2003. The total amount of non-Federal investment in Title XVI projects appears to be between $800 million and one billion, although that is a little sketchy.

The projects on line so far are producing an estimated 98,000 acre-feet of water annually. For a perspective, that's roughly 25 percent of what California water recycling programs were producing in the year 2000.

The projected water yield for the 27 authorized projects ranges from 500,000 acre-feet up to about 640,000 acre-feet annually, depending on changes that the programs go through once they come on line.

Questions relating to the Bureau's Title XVI program appear to have increased in recent years, possibly because of the nature of the project authorization and the lack of a clear program funding

process that is typical of other Federal water programs, such as EPA's state revolving loan funds for wastewater and drinking water.

Unlike these other programs, each Title XVI project is specifically authorized by Congress and funded via the annual appropriations process. As such, there appears to be no specified or promulgated development or evaluation criteria for Title XVI projects prior to authorization. That being said, it has been noted that the Bureau's guidelines for developing water reclamation and reuse projects provide solid criteria prior to funding of those projects.

These issues were highlighted during development of the Fiscal Year 2004 budget request, whereupon OMB reviewed the program to assess its strengths and weaknesses. While the Title XVI program fared reasonably well on most of its evaluation criteria, it was found to be weak in providing a clear link between Federal funding progress and specific outcomes and in planning long term.

The Title XVI OMB review concludes by stating that the program should be scaled back because it serves a largely local function and local responsibility, and that it is not one of Reclamation's "core functions." However, I should note here that documents leading up to that report did imply that it was linked to the mission of that program very clearly. Consequently, the Administration's budget request for Fiscal Year 2004 is $12.6 million, 59 percent less than what was enacted in 2003 and 65 percent less than what the Congress appropriated for Fiscal Year 2002.

The OMB review and, of course, the congressional response, including this hearing, raise several policy issues not unique to the Title XVI program. First, it highlights the tension between congressional and administration priorities; second, it raises questions regarding the appropriate Federal role in water supply development for M&I uses, including recycling. For example, is Congress redefining the Federal Government's role in M&I water supply as it authorizes new site-specific projects? To what degree should the Federal Government provide incentives for water supply development via new technologies such as recycling, and what factors should be considered? Is there any need for coordination or realignment of Federal water activities? Last, is there a need for technical evaluation of these projects prior to project authorization?

This concludes my testimony. I will be happy to answer any questions from the Chairman or other members of the Subcommittee. Thank you.

[The prepared statement of Ms. Cody follows:]

Statement of Betsy A. Cody, Specialist in Natural Resources Policy, Resources, Science, and Industry Division, Congressional Research Service

Thank you Mr. Chairman for the opportunity to appear before the Subcommittee today. My name is Betsy Cody. I am a specialist in natural resources policy with the Congressional Research Service, Library of Congress, where I have worked on western water policy and natural resources issues since 1989. I have been asked to provide Members of the Subcommittee with an overview of the Federal Government's involvement in wastewater reclamation, recycling, and reuse. With permission of the Subcommittee, I would like to submit for the record a CRS report that outlines current Federally supported water supply and water treatment programs. [1]

[1] U.S. Library of Congress, Congressional Research Service, Federally Supported Water Supply and Wastewater Treatment Programs, CRS Report RL30478, updated March 24, 2003.

This report provides an overview of current projects and programs, as well as a description of the historical role of the Federal Government in providing assistance for municipal water supply development and treatment. Although the Federal Government has a significant role in developing water quality regulations and standards for municipal and industrial (M&I) water use, historically it has provided a relatively small percentage of direct funding for construction of M&I water supply and treatment facilities. In recent years, Congress has been asked more and more to fund development of M&I water supplies, including providing Federal support for water reuse and recycling projects.

Although my testimony will focus on the Bureau of Reclamation's Reclamation Reuse and Recycling Program (Title XVI of P.L. 102–575, or Title XVI), it is important to note that, to date, the states have been the most active players in pursuing water reuse technologies. In particular, Florida and California have well established water reuse programs. It appears that there are more than 460 water recycling projects in Florida and more than 230 in California; however, it is not clear how many projects are on-line nationwide. Efforts to track these activities more precisely are currently underway. Standards for recycled water quality are set at the state level; however, U.S. Environmental Protection Agency (EPA) guidelines provide recommendations for reuse practices and technical information to assist states in formulating state-level regulations. [2]

Title XVI: Reclamation Water Reuse and Recycling

The Bureau of Reclamation's Title XVI program is the only active Federal program providing localities with financial and technical assistance for the development and construction of water reclamation and reuse facilities. [3] Although both the U.S. Army Corps of Engineers and the EPA have limited authorities to provide assistance to local entities for recycling projects (e.g., specific provisions in 1992 and 1999 Water Resources Development Acts, [4] and a pilot program by EPA under the Alternative Water Sources Act), [5] neither has an established, regularly funded program for such activities.

The genesis for the Bureau's wastewater reclamation, recycling, and reuse program was the long-term drought of the late 1980s and early 1990s. The drought hit California and the Southwest particularly hard. As such, this Committee spent much time debating Federal water supply policies, including how to address conflicts between the need and desire for continued operation of the Federal Central Valley Project and the application of state and Federal environmental laws that could potentially limit water deliveries to protect certain species or comply with water quality standards. The result of several years' effort in addressing this conflict was the Reclamation Projects Authorization and Adjustment Act of 1992 (P.L. 102–575). While much attention has been given to Title 34 of that Act (the Central Valley Project Improvement Act), Title XVI (the Reclamation Wastewater and Groundwater Studies and Facilities Act) authorized construction of five reclamation water reuse and recycling projects in Arizona and California. Additionally, the Act authorized a comprehensive reuse study for Southern California, including Colorado River hydrologic regions as defined by the California Department of Water Resources. The latter language appears to provide specific statutory authority for activities that were underway in 1991 in response to Secretary of the Interior Manuel Lujan's announcement of a "Comprehensive Water Reuse Initiative" for Southern California. [6]

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[2] U.S. Environmental Protection Agency, Guidelines for Water Reuse, EPA/625/R–92/004 available at: [http://www.epa.gov/ordntrnt/ORD/NRMRL/Pubs/625R92004/625R92004prel.pdf].

[3] U.S. Executive Office of the President, Office of Management and Budget, Performance and Management Assessments. Budget of the U.S. Government, Fiscal Year 2004 (Washington, DC: U.S. Govt. Print. Off., Feb. 2003), p. 173. See also, PART worksheets for the Department of the Interior's Title XVI water reclamation and reuse program at: [http://www.whitehouse.gov/omb/budget/fy2004/pma.html] p. 2.

[4] Sec. 217 of P.L. 102–580, and Sec. 502 of P.L.106–53, respectively. Some of these activities received funding for Fiscal Year 2003 in Title I of the Energy and Water Development Appropriation Act for Fiscal Year 2003 (P.L. 108–7; Division D). The Corps also has authority for design and construction of Everglades wastewater reuse technology (P.L. 106–541). In all, it appears $110.5 million in assistance has been authorized for Corps water reuse activities, with approximately $22.6 million appropriated to date.

[5] Title VI of P.L. 106–457.

[6] Department of the Interior News Release, Office of the Secretary, dated August 5, 1991. According to materials provided to CRS on October 25, 1991, the Bureau undertook a number of activities that fall, including developing a detailed action plan for promoting the initiative. By October 23, 1991, the Bureau had held its first pre-planning committee meeting for the Southern California Water Reclamation and Reuse Study.

It was envisioned that a comprehensive water reuse program would help to decrease the area's dependence on imported water supplies from the Colorado River.

Title XVI has been amended six times since 1992,[7] resulting in the addition of 22 specific projects for a total of 27 authorized projects. The Federal share of project costs is limited to 25% of total project costs; however, amendments in 1996 added 18 new projects (of the current 27) and new program guidance, which retained the 25% Federal/non-federal cost share, but also limited the Federal share of project costs to no more than $20 million. To date, the Bureau has undertaken planning, design, and engineering activities on 18 projects. The Bureau has completed its funding obligations for two projects: 1) the Los Angeles (CA) area water reclamation and reuse project, and 2) the Tooele (UT) wastewater treatment and reuse project. Bureau involvement with a third project, the Mission Basin/Oceanside (CA) groundwater desalting demonstration project is nearly complete. Obligations and expenditures for the Bureau's Title XVI program to date have totaled approximately $255 million and are expected to reach $285 million by the end of Fiscal Year 2003. The total non-federal investment in Title XVI projects is estimated to be between $800 million $1 billion. The projects on line so far are producing an estimated 98,000 acre-feet of water annually (roughly 25% of all recycled water in California in the year 2000), according to the Office of Management and Budget. The projected water yield for the projects authorized ranges from 500,000 - 640,000 acre-feet annually. While the Bureau has guidelines for the development of water reclamation and reuse projects,[8] no official rules or regulations for the program have been promulgated.

Questions relating to the Bureau's Title XVI program appear to have increased in recent years possibly because of the nature of project authorization and the lack of a clear program funding process that is typical of other Federal wastewater and drinking water programs. Unlike other Federal water assistance programs, such as state revolving loan funds for wastewater and drinking water, each recycling project is specifically authorized by Congress and funded via the annual Energy and Water Development appropriations bill. As such, there appear to be no specified or promulgated development criteria and no competitive grant processes for Title XVI projects; however, it has been noted that the Bureau's guidelines for developing water reclamation and reuse projects provide "solid criteria ... to evaluate potential projects prior to funding, and also to monitor and evaluate projects under construction."[9]

These programmatic issues were highlighted during development of the Fiscal Year 2004 budget. The Office of Management and Budget (OMB) reviewed the program using the Program Assessment Rating Tool (PART)—an analytic tool used to assess program strengths and weaknesses. While the Title XVI program fared reasonably well on most evaluation criteria, it was found to be weak in providing a clear linkage between Federal funding and progress toward specific outcomes, and in planning for the long-term. The supporting Fiscal Year 2004 PART review documents prepared by OMB describe the program as an "earmark-driven grant program for local projects" for which there is no competitive grant process. While supporting documents state that the program helps the Bureau "meet its mission to manage and develop water and related resources in an economically and environmentally sound manner" (and specifically notes the role of the program in assisting Southern California to reduce its reliance on Colorado River water), the OMB's summary overview of the PART review opines that the water reclamation and reuse activity is "not one of Reclamation's core functions." The Title XVI PART review concludes by stating that the program should be scaled back because it serves a largely local function and local responsibility. Consequently, the Administration's budget request for Fiscal Year 2004 is $12.6 million—65% less than was enacted for the program for Fiscal Year 2002 and 59% less than was enacted for Fiscal Year 2003.

The OMB's Fiscal Year 2004 PART review raises several specific policy issues not unique to the Title XVI program. First, it highlights the tension between

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[7] P.L. 104–266 (1996 amendments) authorized specific construction projects in California, Utah, New Mexico, Nevada, and Texas; P.L. 105–321 (1998) authorized a project in Oregon; P.L. 106–554 (1998) authorized an additional project in Nevada; P.L. 106–566 extended the Secretary's research and planning authority to include projects in the State of Hawaii; P.L. 107–344 (2002) authorized a project in Washington state; and P.L. 108–7 (2003) authorized an additional project in Nevada.

[8] U.S. Department of the Interior, Bureau of Reclamation, Guidelines for Preparing, Reviewing, and Processing Water Reclamation and Reuse Project Proposals Under Title XVI of Public Law 102–575, as Amended, (Washington DC: Bureau of Reclamation, 1998).

[9] U.S. Executive Office of the President, Office of Management and Budget, OMB Program Assessment Rating Tool (PART), Competitive Grant Programs. PART worksheet for the Department of the Interior's Title XVI water reuse and recycling program at [http://www.whitehouse.gov/omb/budget/fy2004/pma.html], p. 6.

Congressional and Administration priorities. Second, it raises questions regarding the appropriate Federal role in water supply development for M&I uses; for example, is Congress redefining the Federal Government's role in M&I water supply and treatment as it authorizes new site-specific projects? To what degree should the Federal Government provide incentives for water supply development via new technologies, and what geographic, regional, or social factors should be considered? Lastly, is there needed coordination or realignment of certain Federal water activities to ensure efficient use of scarce Federal resources.

This concludes my testimony. I will be happy to answer questions from the Chairman and other Members of the Subcommittee. Thank you.

Mr. CALVERT. Thank you.

The Honorable Peggy Neely, Councilwoman, Phoenix, Arizona. You're recognized for 5 minutes.

STATEMENT OF HON. PEGGY NEELY, COUNCILMEMBER, CITY OF PHOENIX, ARIZONA

Ms. NEELY. Thank you.

Chairman Calvert and members of the Subcommittee, thank you for the opportunity to appear before you today to testify in support of stronger Federal participation in water reuse and water recycling initiatives.

My name is Peggy Neely. I serve on the City Council for the City of Phoenix, Arizona, representing the growing northern portion of the City. I serve on the City's Natural Resources Subcommittee. In my work with the City, I have developed an appreciation for the foresight and dedication needed to maintain the quality of life we now enjoy in our thriving metropolitan area of over three million people. Nowhere is this more important than in the acquisition and management of sufficient high-quality supplies for our desert environment.

Over many decades, our Federal, state and local leaders have ensured that the water supply needs of this rapidly growing region can be met, most notably through the acquisition of the Colorado River water through the Central Arizona Project. As our population is expected to double in the next 40 years, we realize that our need for sustainable water supplies will extend far beyond the availability of these supplies, which took the better part of the last century to plan, litigate and construct. The job is nowhere near complete. Yet, there are no projects of the scope of the CAP on the horizon.

As we are continually reminded of the finite nature of our water resources, we must ask an uneasy question: where will our next supplies come from? It is widely speculated that the ancient Hohokam Indians, who were the builders of the first system of canals in our area, did not find a satisfactory answer to that question. The Hohokams were peaceful farmers who inhabited the Salt Valley River for about a thousand years, from 300 A.D. to about 1450. The University of Arizona's research provides evidence that the region encountered a devastating drought at the tail end of the tribe's existence in the area, giving us the best explanation yet of the Hohokam's demise.

In the Phoenix area, reclaimed water will be a key source, and one that could ultimately serve between one-quarter and one-third of the region's municipal water demand. Our ability to effectively utilize this supply will be highly dependent on safe and cost-

effective means to treat and distribute the supply for a wide range of uses, including potable delivery. However, to get there, we will need a stronger Federal participation in the research and demonstration of expanded technologies.

The City of Phoenix currently operates three significant water reclamation facilities that together serve a population of over two million. The largest of these facilities is co-owned by Phoenix and four other cities, providing water for the cooling towers at the Palo Verde Nuclear Generating Facility. Water from this plant is also used for area farmlands and for restoration of wildlife habitat at the City's Tres Rios River Restoration Project. Tres Rios, which is currently being expanded to a full-scale project from its demonstration phase in partnership with the U.S. Army Corps of Engineers, is a remarkable example of how reclaimed water can be used to benefit the environment while enhancing education and other quality of life objectives. I invite you, when you visit the Phoenix area, to tour this remarkable project.

The City of Phoenix and our municipal partners in the Valley of the Sun continue to lead the way in planning and utilizing reclaimed water for landscaping areas, agriculture, and for the storage of highly treated water underground to restore the depleted ground water tables. Reclaimed water is, by nature, drought proof, an important feature in Phoenix, where our surface water supplies are subject to periodic shortfalls.

In addition, reclaimed water will also help reduce the need for additional water treatment plant capacity and help us meet the state's requirement to use sustainable water supplies. For these and many other reasons, we value this resource highly in our future water supply planning efforts, and encourage continued Federal efforts to facilitate more effective use of this important resource.

One of the challenges we face in using reclaimed water is the high salinity content, which limits its effective utilization for certain uses. Much of this salinity originates in source water, but additional salts are contributed through the urban disposal to our wastewater systems. Phoenix has been a driving force in bringing this and other salinity-related issues to a national forum through the efforts of the Multi-State Salinity Coalition. Your Subcommittee staff participated in our first salinity summit last December in Las Vegas. At the summit, we emphasized that one of our top challenges in addressing salinity is how to dispose of the salt concentration from the treatment process. We appreciate the continued Federal participation in salinity-related research to meet our water supply objectives.

Arizona's rural communities, which are critical to the state's tourism economy, are rapidly coming to grips with water supply shortfalls. These communities are growing rapidly, and the vast majority lack access to adequate sustainable water supplies. The problem has been seriously compounded by the recent drought in our state, necessitating significant water use cutbacks by many of these communities. Rural Arizona could also benefit substantially from further water reclamation research, technological advancements, planning and infrastructure assistance.

In summary, our reclaimed water supplies will be increasingly relied upon to sustain the high quality of life we enjoy in the desert community, while accommodating our new residents who are attracted to this lifestyle. I appreciate the opportunity to provide this testimony to you today, and ask your support for funding the projects necessary to effectively utilize this important water resource.

Thank you.

[The prepared statement of Ms. Neely follows:]

Statement of Peggy Neely, Councilmember, City of Phoenix, Arizona

Chairman Calvert and members of the Subcommittee, thank you for the opportunity to appear before you today to testify in support of stronger Federal participation in water reuse and water recycling initiatives.

My name is Peggy Neely. I serve on the City Council for the City of Phoenix, Arizona, representing the northern portion of the City. I also serve on the City's Natural Resources Subcommittee. In my work with the City, I have developed an appreciation for the foresight and dedication needed to maintain the quality of life we now enjoy in our thriving metropolitan area of over 3 million people. Nowhere is this more important than in the acquisition and management of sufficient high quality water supplies for our desert community.

Over many decades, our Federal, state and local leaders have ensured that the water supply needs of this rapidly growing region can be met—most notably through the acquisition of Colorado River water through the Central Arizona Project. We realize, though, that the region's need for sustainable water supplies will extend far beyond the availability of this important supply, which took the better part of the last century to plan, litigate and construct.

As we are continually reminded of the finite nature of our water resources, we must ask an uneasy question: Where will our next supplies come from? It is widely speculated that the ancient Hohokam Indians, who were the builders of the first system of canals in our area, did not find a satisfactory answer to that question. The Hohokam were peaceful farmers who inhabited the Salt River Valley for about a thousand years, from about 300 A.D. to about 1450. The University of Arizona's research provides evidence that the region encountered a devastating drought at the tail end of this tribe's existence in the area, giving us the best explanation yet of the Hohokam's demise.

Though our present culture is fortunate to have access to imported water sources, advanced water treatment technologies and sophisticated infrastructure to serve our cities, our job is nowhere near complete. Our population is expected to double in the next 40 years, and there are no large imported water sources of the scale of the Central Arizona Project on the horizon.

As we plan our water supply future, it is clear that reclaimed water will be a key source, and one that could ultimately serve between one-quarter and one-third of the region's municipal water demand. Our ability to effectively utilize this supply will be highly dependent on safe and cost-effective means to treat and distribute the supply for a wide range of uses—including potable delivery. However, to get there, we will need stronger Federal participation in the research and demonstration of expanded technologies.

The City of Phoenix currently operates three significant water reclamation facilities that together serve a population of over 2 million. The largest of these facilities, which is co-owned by Phoenix and four other cities, provides water for cooling towers at Palo Verde Nuclear Generating Facility. Water from this plant is also used for area farmlands and for restoration of wildlife habitat at the City's Tres Rios River Restoration Project. Tres Rios, which is currently being expanded to a full scale project from its demonstration phase in partnership with the U.S. Army Corps of Engineers, is a remarkable example of how reclaimed water can be used to benefit the environment while enhancing education and other quality of life objectives. I invite any of you who visit the Phoenix area to tour this remarkable project.

The City of Phoenix and our municipal partners in the Valley of the Sun continue to lead the way in planning and utilizing reclaimed water. An example is our effort to store highly-treated reclaimed water underground. This will restore depleted groundwater supplies, provide a reliable source during surface water shortages, and provide a dependable future supply for our community. Numerous local parks and golf courses use reclaimed water, and we are continually identifying additional large institutional, industrial, commercial, and recreational customers.

The major sources of water to the Phoenix area are surface water supplies that are subject to periodic, but inevitable, shortfalls. Because reclaimed water is, by its nature, substantially drought proof, a solid water reclamation and reuse program can significantly reduce the impacts of these shortages. In addition, reclaimed water use should also help reduce the need for additional water treatment plant capacity and help us meet the State's requirement to use sustainable water supplies. For these and many other reasons, we value this resource highly in our future water supply planning efforts, and encourage continued Federal efforts to facilitate more effective use of this important resource.

One of the challenges we face in using reclaimed water is the high salinity content, which limits its effective utilization for certain uses. Much of this salinity originates in our source water, but additional salts are contributed through urban disposal to our wastewater systems. Phoenix has been a driving force in bringing this and other salinity-related issues to a national forum through the efforts of the Multi–State Salinity Coalition. Your Subcommittee staff participated in our first Salinity Summit last December in Las Vegas. At the Summit, we emphasized that one of our top challenges in addressing salinity is how to dispose of the salt concentrate from the treatment process. We appreciate the continued Federal participation in salinity-related research to meet our water supply objectives.

Arizona's rural communities, which are critical to the State's tourism economy, are rapidly coming to grips with water supply shortfalls. These communities are growing rapidly, and the vast majority lack access to adequate sustainable water supplies. This problem has been seriously compounded by the recent record drought in our state, necessitating significant water use cutbacks in many of these communities. Rural Arizona could also benefit substantially from further water reclamation research, technological advancements, planning and infrastructure assistance.

In summary, our reclaimed water supplies will be increasingly relied upon to sustain the high quality of life we enjoy in our desert community, while accommodating our new residents who are attracted to this lifestyle. I appreciate the opportunity to provide this testimony to you today, and ask your support in funding the programs necessary to effectively utilize this important water resource.

Mr. CALVERT. Thank you.

General Eugene Habiger.

STATEMENT OF GENERAL EUGENE E. HABIGER, USAF [RETIRED], PRESIDENT AND CHIEF EXECUTIVE OFFICER, SAN ANTONIO WATER SYSTEM

General HABIGER. Thank you, Mr. Chairman, members of the Committee. My name is Gene Habiger and I very much appreciate the opportunity to come before you this morning to tell you the story of the successes of recycled water in San Antonio, TX.

Today in San Antonio, 100 percent of our water source comes from one pool of water. That's the Edwards Aquifer. The Texas State legislature, in 1997, mandated that the entire State be broken down into 16 regions, and each of those regions would come up with a water plan to ensure that viable water supplies were available through the year 2050. We were part of that process. By the year 2030, instead of being 100 percent reliant on the Edwards Aquifer, we will be 30 percent reliant.

The first step in that journey was our recycled water program. We have, over the past 6 years, invested $125 million to build a 72-mile pipeline system to ensure that recycled water was an integral part of getting us to the point where we had viable water sources by the year 2050. We have 35,000 acre-feet of recycled water available for use in the City of San Antonio to our 300,000 customers.

Conservation has also played a critical role in our process to wean ourselves off the Edwards Aquifer. Over the past 15 years, San Antonians have reduced water consumption by 32 percent,

while our population has increased by 50 percent. That is extraordinary. The closest city that we've been able to find in the State of Texas to our conservation efforts is El Paso. Consumption per capita in San Antonio today is 143 gallons per person per day. El Paso is at 155. Fort Worth, Dallas, Houston, Austin, are in excess of 200 gallons per capita today. We have done extraordinary things with conservation, and we're going to do extraordinary things with water recycling.

It's a viable program. There are over a hundred different communities in the State of Texas that have viable programs. For example, we're watering five of our six municipal golf courses with recycled water. Many of our educational institutions in San Antonio are using recycled water for landscape irrigation. It works, it's effective, and it's safe. It's the right thing to do, and it's a sign of the future.

Mr. Chairman, I appreciate the opportunity to come before you today, and I would like to submit my entire testimony for the record, if that meets your approval.

Mr. CALVERT. Thank you, General. Certainly your testimony will be submitted for the record, without objection.

[The prepared statement of General Habiger follows:]

Statement of General (Ret.) Eugene E. Habiger, President and Chief Executive Officer, San Antonio Water System

Good morning. I am Gene Habiger, President/CEO of the San Antonio Water System (SAWS). Thank you for inviting me to share with you the importance of recycled water not only for San Antonio, but also for many communities in Texas and our nation. SAWS is a municipally owned water utility serving approximately one million people in South Central Texas.

We provide drinking water, wastewater and recycled water service to nearly 300,000 connections including three military bases (Lackland AFB, Brooks City Base, Fort Sam Houston). Reclaimed, or recycled, water is an important tool for the nation's cities as they work to manage the water demands of a growing population.

Nowhere is this more true than in Texas—where over 100 recycled water systems put recycled water to beneficial use. The reasons for such an abundance of reclaimed water applications in Texas range from the need to dispose of reclaimed water to meet water quality concerns in receiving streams or from the need to develop "drought proof" supplies for business and industry. San Antonio provides a good example of the critical role of recycled water for meeting water resource needs.

In 2002, SAWS completed the first phase of its system to recycle treated wastewater effluent for irrigation and industrial uses. For San Antonio, recycled water is an important part of our integrated approach to water resource management that relies on reducing, reusing and recycling our water supplies before developing new fresh water resources. Our recycled water is of very high quality—almost to drinking water standards. Two cities that are comparable to our water quality levels are San Jose and San Diego.

We have reduced our per capita water demands by approximately 32% over the last 15 years, so that we are using less water today than we did in 20 years ago even though our population has grown by 55%.

To further supplement our water supply, we began using recycled water for cooling lakes required for the cities electrical utility. This system was expanded to include a 35,000 acre-foot/year direct reuse, or recycled water, system which provides a firm, drought-proof supply for industries, cooling towers, military bases, universities, municipal parks, golf courses and river maintenance.

This 72-mile pipeline system took about 6 years to design and construct at a cost of over $125 million dollars.

San Antonio is well recognized for its "River Walk". The City of San Antonio welcomes over 8 million visitors a year—generating over $4 billion of economic impact. Our Recycled Water System is designed to supply 4,250 acre-feet per year, or over a billion gallons, into the San Antonio River—thus assuring a reliable source of water year round.

San Antonio has determined that we must do everything we can to conserve and reserve our existing resources. Additionally, the decision to invest in this source of supply was especially important for our community as we faced limits on our historic water supply due to pumping from the Edwards Aquifer, home to threatened and endangered species.

For this reason, San Antonio may be uniquely positioned for achieving clear Federal purposes as it implements its long-range water resources programs including recycled water. These purposes include, as a minimum, ecosystem restoration and protection of endangered species.

In addition to the funds expended for the recycled water program, SAWS will invest in excess of $2.6 billion dollars over the next 50 years to diversify its water supply. This will reduce our reliance on the Edwards Aquifer, provide us with a reliable water supply for San Antonio and help maintain the habitat of Federally protected species.

Other communities, which are not faced with endangered species issues, are using recycled water as a way to ensure that key industries and business interests are provided a secure source of water even during drought. Especially during these times of economic uncertainty, ensuring reliable water is critically important for protecting our local, state and Federal economies; for protecting jobs.

Just as local users are helping to achieve Federal purposes, the Federal Government can assist communities further the use of recycled water by:

1. Providing grants or cost-share funds for studies related to water quality and the treatment needed for use of recycled water in certain applications (e.g. concrete for highway construction, industrial uses such as micro-chip or other specialty manufacturing, etc.);

2. Providing assistance and training for design, construction and operation of recycled water systems;

3. Creating incentives for the reuse of water from wastewater treatment plants rather than discharging it into streams to further the goals of Clean Water Act when low-flow conditions in the receiving stream is not a concern;

4. Requiring the use of recycled water at Federal installations, Federal office buildings, for projects funded with Federal funds, and by contractors when such supply is available; and

5. Funding such use from the Federal budget rather than shifting those costs to the local communities.

These are just a few ideas of policies and programs that could be developed to encourage the development of recycled water facilities throughout the nation. Such use of our precious natural resources is an important component of managing the needs of a growing population, protecting the environment and keeping our economy vibrant.

Again, thank you for inviting me to speak today. I will be happy to answer any questions you have.

Mr. CALVERT. Our next witness today is Mr. Joseph Grindstaff.

STATEMENT OF JOE GRINDSTAFF, GENERAL MANAGER, SANTA ANA WATERSHED PROJECT AUTHORITY, ACCOMPANIED BY RICHARD W. ATWATER, CEO AND GENERAL MANAGER, INLAND EMPIRE UTILITIES AGENCY

Mr. GRINDSTAFF. Thank you, Mr. Chairman. I also would like for my testimony to be submitted for the record, and I will just summarize that briefly.

Mr. CALVERT. Without objection, your testimony will be entered into the record.

Mr. GRINDSTAFF. Thank you.

I represent the Santa Ana Watershed Project Authority, which the Santa Ana River is the largest coastal river in southern California. For those of you who don't know, Orange County, Riverside, and San Bernardino Counties are the primary areas that we serve, and there are something over five million people. In the 2000 Census, there were five million people in that region. We expect that number to be seven million people within 20 years.

We are tied to two Federal projects, the Colorado River and to the Central Valley project through the Bay-Delta. In both cases, we expect that our water supply will either be reduced or, at best, remain the same. Yet, as our population grows, we have to find ways to supply water.

At the present time, we currently have about 100,000 acre-feet per year of recycled water in our region. We have plans that will allow us to add an additional 270,000 acre-feet of water, and our goal is to be able to totally drought proof the region such that we can come off of both the Colorado River and northern California water supplies in times of drought. That provides significant benefit not only to the residents in our area but to the entire Colorado River Basin and to the entire area in northern California that gets water through the Bay-Delta. That's a very significant program. Water recycling is key to making that happen.

Typically in our region, water recycling projects are leveraged on average to Federal dollars 10 to 1. The largest project in our region is leveraged more than 20 to 1, with local funds to the Federal funds. The largest recycled water project in the Nation is the Orange County Groundwater Replenishment System, which will provide 70,000 acre-feet of water per year, every year, in southern California. That's a significant contribution to our water supply.

As we look ahead, it is really important that the Federal Government provide seed money to help these projects move. I don't know that the Orange County Groundwater Replenishment System would have been able to be developed if the Bureau of Reclamation hadn't been able to commit $20 million to that project. That $20 million is a small part of the total project cost of $450 million, but it was a significant seed that helps people say yes, we need to get this done.

I want to point out that grant programs sometimes have a bad name, but my experience with grants is that local agencies perform very well when their own money is on the line. So if a grant program is developed that gives five or 10 percent, twenty percent or thirty percent of the money—and in the case of Title XVI, it's up to 25 percent—the local agency still retains real financial interest in that. That is very important for the management of the program. It caps the responsibility of state and Federal Government. I think that's a significant benefit. It causes local agencies to attempt to manage their projects better. I have personally been involved in projects that were built by my agency as a regional entity, where local agencies did not feel as compelled to reduce costs. But when we find a way to make the local agencies responsible by giving them grants, they feel much more motivated, to cut out everything but the essentials. I think that's a really important benefit for grant programs. I think project proponents are much more likely to get them done on time, so I think that's an important benefit for the program.

I guess last, when you do a grant program, there is no ongoing O&M and no ongoing liability for the Federal Government. I see that, if you look at our past, a large part of what we're spending money on in the Bureau of Reclamation is ongoing O&M and ongoing liability for water supplies. That was necessary at the time. It seems to me that, as we develop new water supplies in the future,

the water recycling program offers an opportunity to limit the liability of the government and yet inspire people to do more.

Thank you.

[The prepared statement of Mr. Grindstaff follows:]

Statement of Joe Grindstaff, General Manager, Santa Ana Watershed Project Authority

Chairman Calvert, Ranking Member Napolitano, Members of the Subcommittee, thank you for providing me this opportunity to address the vital role that recycling must play in meeting growing water demands in Southern California and the suitability of a Federal grants program in achieving this objective.

The Santa Ana River Watershed has been recycling water for over 100 years. This hearing is very important not only to Southern California, but to all metropolitan areas throughout the United States; water recycling will become significant to all cities.

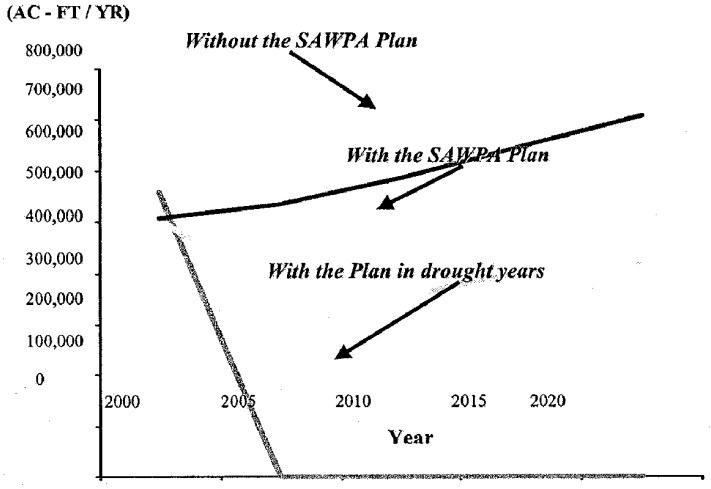
The Santa Ana Watershed Project Authority (SAWPA) represents the Santa Ana River Watershed. This river is the largest coastal river system in Southern California and flows from the San Bernardino Mountains over 100 miles southwesterly to the Pacific Ocean at Huntington Beach. The watershed covers over 2,650 square miles of widely-varying terrain. This area, which includes parts of San Bernardino, Riverside, Los Angeles and Orange Counties, was home to 5.1 million people during the 2000 census. The population is expected to increase to 7 million by 2020.

SAWPA was founded in 1972 after 80 years of controversy and court battles, at one time including more than 3,000 parties. Thus, SAWPA came into being some 30 years ago as a way to solve problems, rather than just litigate. Today, SAWPA has five member agencies—Eastern Municipal Water District, Western Municipal Water District, San Bernardino Valley Municipal Water District, Inland Empire Utilities Agency and Orange County Water District. Each agency has specific individual interests, but shares the "watershed-wide" responsibility of insuring that there is reliable, high-quality water available for the 5 million residents.

Integrating the management of surface water, groundwater, water recycling, habitat, groundwater cleanup and groundwater banking are the tasks that SAWPA faces. When fully implemented, this integrated program offers the realistic capability of drought proofing the entire region. In saying this term, I mean that SAWPA's five member agencies will be able to roll off or significantly decrease sources of imported water from the Colorado River and Northern California that are the region's lifeblood. Recycling and the clean-up of contaminated groundwater are at the heart of this innovative plan to reduce our dependence on imported water demand.

Results of the Program

Projected Water Import Demands



By storing or "banking" recycled water in groundwater basins during normal and wet years, we will be able to withdraw it during droughts and watershed wide offset the need for any imported water during the drought. Given the problems facing California water agencies by reason of the failure of the QSA, our plan to become essentially self-sufficient in times of drought should come as welcome news in other regions of the state and throughout the Colorado River Basin, since our program is the only resource plan that literally leaves water in both the State Water Project and the Colorado River in times of crisis, rather than taking more out. In this respect, SAWPA is completely unique among those state and local agencies that bear the burden of providing water to their residents.

To accomplish this ambitious objective in an efficient and effective way, all components of our plan must be tightly coordinated and all activities integrated. Our efforts to provide such a program were greatly improved by the passage of the State Water Bond on March 7, 2000. Chapter 6, Article 5, the Southern California Integrated Watershed Program, or "SCIWP," was intended by the legislature to fulfill this opportunity. Many members of the legislature worked to assure this section was included in the water bond.

More recently, the passage of yet another state water bond, Proposition 50, has given SAWPA potential access to additional state funding for implementation of the SCIWP. What is needed now is Federal funding through a carefully conceived and developed grants program under the direction of the U.S. Bureau of Reclamation. This will help us to leverage these state and local resources to the greatest extent possible. It will also help to further advance the national interest by developing recycling technology and applications for use throughout the West and elsewhere in the nation.

Orange County Water District and Central & West Basin have received funding from Title XVI. Many other local projects were funded by Proposition 13. For example, Inland Empire Utilities Association's $120 million investment of 70,000 AFY of new water recycling by 2010 at a total capital cost of $125 million. Title XVI grant is $20 million or about a 15% cost share. Further, the Orange County Water District's GWR project is $450 million with current authorization of $20 million grant from the U.S. Bureau of Reclamation.

In the Santa Ana Watershed, about 100,000 AFY is currently recycled by SAWPA and its member agencies. Funding for some of our projects has been through Title XVI, and some through other Federal, state, regional and local programs. In testimony presented before this Subcommittee on June 18, 2001 at a field hearing in Cerritos, California, I enumerated several of our success stories.

The bottom line for SAWPA is for us to implement the SCIWP which will triple the amount of recycled water from the current level of 100,000 AFY to 300,000 AFY or more over the next twenty years. We can achieve this important goal using exist-

ing technology, but only with the assistance of state and Federal cost sharing programs such as the Southern California Comprehensive Water Reclamation and Reuse Study ("SCCWRRS").

In 1993, the U.S. Bureau of Reclamation, seven Southern California water agencies and the California DWR agreed to fund and initiate a multi-million comprehensive feasibility study on the potential to recycle and reclaim water throughout the coastal plain of Southern California. This eight-year study was completed over two years ago. The draft report, although never submitted to Congress, identified cost effective projects that would develop over 800,000 AF of new supplies that could be developed and implemented by 2010. The Federal investment under Title XVI would be approximately $150 million. The rest of the costs, over $1 billion, would be borne by Proposition 50 and the local sponsors. This is a very cost effective investment given the incredible issues facing the Colorado River and the CAL–FED Bay–Delta Program.

For many years, dedicated and highly competent staff members of the U.S. Bureau of Reclamation have promoted the concept of water recycling. In many studies, not just limited to the SCCWRRS report, the benefits of water reclamation and reuse have been analyzed and found to be the most feasible way of meeting the demands of an ever-growing populace. These benefits extend throughout our region, our state and the 17 reclamation states, and even arguably the entire world as undeveloped water resources become increasingly scarce.

On numerous occasions, representatives of the U.S. Department of the Interior have rendered testimony before this and other Congressional committees and published a significant body of literature on the value of recycling on the website of the U.S. Bureau of Reclamation. In summarizing those statements, it is apparent that water recycling and reuse contribute significantly to the accomplishment of many Federal objectives at the least possible cost to the U.S. Treasury:

1. The U.S. Bureau of Reclamation is charged with the important responsibility of developing and implementing innovative solutions that encourage the efficient use of precious water resources throughout the 17 western states. Through the promotion of financially feasible and environmentally sound watershed plans like the SCIWP, the U.S. Bureau of Reclamation is able to advance new, cost-effective technologies through research and real-world applications to fulfill this important national mandate.
2. Using more efficient water use measures to stretch limited water supplies, the U.S. Bureau of Reclamation can improve water quality and reduce or entirely avoid the costs associated with the development of new water storage projects and treatment facilities.
3. By promoting regionally planned and implemented programs like the SCIWP, the U.S. Bureau of Reclamation can promote economically and environmentally sound decision-making by state and local governments and promote regional and/or watershed-based planning perspectives.
4. Regionally-based programs, like the SCIWP, will promote the formation of collaborative partnerships between the Federal Government and such other entities as state, tribal and local governments to integrate water supply and water quality issues, thus narrowing the gap between those who supply, use, treat and regulate water.

Why then, in the face of such overwhelming evidence, is the Administration backing away from such cost effective and environmentally sound approaches to fulfilling this aspect of the Bureau of Reclamation's core mission?

When Congress enacted the legislation authorizing the SCCWRRS in 1992, it called for a cooperative partnership between the U.S. Bureau of Reclamation and the local agencies that would benefit from the study. Pursuant to that partnership, SAWPA and other local agencies contributed millions of dollars to the cost of the report with the understanding that upon completion in six years, the SCCWRRS would be presented to Congress. In fact, the authorized legislation directed the Bureau to complete and return its report within that timeframe. Now, Mr. Chairman, some 11 years later, the Bureau has yet to return the SCCWRRS to Congress.

Out of a sheer sense of frustration, SAWPA sent a letter to Regional Director, Robert Johnson in Boulder City, Nevada on February 21, 2003 again urging that the SCCWRRS immediately be returned to Congress or, the alternative, that the $300,000 contributed by SAWPA for the cost of the study be refunded (copy of letter attached as Exhibit A). To date, no reply has been received.

SAWPA recommends that this Subcommittee immediately schedule legislative hearings to authorize funding for the water recycling projects determined to be feasible and identified in the SCCWRRS and then mark up and report appropriate legislation. More than $6 million has been invested in this study by the U.S. Bureau of Reclamation in partnership with the California Department of Water Resources

and several regional water agencies, including SAWPA, MWD and others. As a result, feasibility studies have been completed on an aggregation of local projects that will develop more than 450,000 AFY of new water by 2010. Even more remarkable is the fact that more than 270,000 AFY of this total will be developed within the Santa Ana River Watershed, specifically in the Inland Empire and Orange County.

Turning to another subject, I would like to address some issues that arise from my own personal experience with the management of projects where there is a cost sharing arrangement that implicates Federal, state and local sources of funding.

Cost sharing is a tried and true principle that has proven its worth in many areas of involvement by the Federal Government. From the standpoint of the U.S. Government, it is an absolute necessity to ensure local commitment and support for the project. It also provides a significant opportunity for the Federal Government to obtain the greatest leverage for its investment in a local project. For example, a 25% Federal share results in a 3:1 return for each Congressionally-appropriated dollar.

Additionally, there are other, albeit more subtle benefits to be obtained through the use of cost sharing in a Federal grants program like Title XVI:

- Local agencies perform a lot better when their own money is on the line.
- Since there is a cap on both the Federal and the state share, the responsibility for any project overruns devolves entirely upon the local entity. Thus, there is no incentive to "gold plate" projects.
- Project proponents are more likely to get done on time, thereby avoiding added expense through escalating costs of construction or costly claims procedures for delay damages.
- Significantly, both title to a cost-shared project and the responsibility for ongoing operation and maintenance (O&M) remain with the local sponsors, thereby avoiding a never-ending obligation that would otherwise be borne by the Federal Government.
- The burden of construction management normally remains with the local project proponent, again relieving the U.S. Bureau of Reclamation of a costly responsibility and permitting it to focus its efforts on broader Federal activities such as feasibility analyses, research and technology transfer.

In conclusion, as I again express my appreciation for this invitation to address your Subcommittee, I would observe that water recycling must be at the heart of any sound resource management plan in this new century. The reason for this conclusion is clear: Until we master a cost effective way to desalinate sea water, there will be no other "new water," only existing water put to additional uses through recycling.

Recycling is the last "river" that we will harness for the benefit of our customers in Southern California. We invite your leadership and active participation in this great venture.

Mr. Chairman, I would be pleased to respond to any questions.

SANTA ANA WATERSHED PROJECT AUTHORITY

COMMISSION FOR THE PROJECT AUTHORITY
EASTER MUNICIPAL WATER DISTRICT
INLAND EMPIRE UTILITIES AGENCY
ORANGE COUNTY WATER DISTRICT
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
WESTERN MUNICIPAL WATER DISTRICT

GENERAL MANAGER
P. JOSEPH GRINDSTAFF

February 21, 2003

Mr. Robert Johnson
Regional Director, Lower Colorado Region
U.S. Bureau of Reclamation
P.O. Box 61470
Boulder City, NV 89006–1470

Dear Mr. Johnson:

The Board of Directors and Member Agencies of the Santa Ana Watershed Project Authority (SAWPA) request that the U.S. Bureau of Reclamation refund the $300,000 advanced to your agency to fund the preparation of the Southern

California Comprehensive Water Reclamation and Reuse Study (Final Report) which Congress authorized in 1992. [1]

The U.S. Bureau of Reclamation completed the Feasibility Study in April 2001, twenty-two months ago, but it was not submitted to Congress, notwithstanding the mandatory statutory requirement, in Section 1606(c), that:

the Secretary shall submit the [feasibility] report authorized by this section to the Committee on Energy and Natural Resources of the Senate and the Committee on Interior and Insular Affairs of the House of Representatives not later than six years after appropriation of funds authorized by this title.

SAWPA was, as you and your staff are aware, one of the eight cost-share partners [2] who, together, advanced approximately $3 million for the $6 million study. SAWPA's apportionment of those costs was $300,000.

After April 2001, almost two-years since the completion of the Feasibility Study, SAWPA was repeatedly informed that the Feasibility Study would be submitted to Congress. For reasons not disclosed to SAWPA or its member agencies, it was not. This is not right. Furthermore, letters from Senator Feinstein and others have been as yet unheeded in releasing this report.

More than a decade ago, Secretary Lujan and the U.S. Bureau of Reclamation invited the State of California and local and regional water agencies in Southern California to form a partnership to examine the feasibility of constructing and operating local and regional water recycling projects. The State of California, SAWPA, and others responded to the challenge. All together, more than 50 local water agencies, cities, and municipalities participated in the effort. As a result, the Lujan Initiative was subsequently incorporated into the 1992 Act.

The U.S. Bureau of Reclamation conducted a comprehensive, detailed and multiphased feasibility study, over more than a six-year period. The table below sets forth the U.S. Bureau of Reclamation's conclusion for both a Short–Term Program and a Long–Term Program.

U.S. BUREAU OF RECLAMATION

COMPREHENSIVE FEASIBILITY STUDY CONCLUSION

NEW WATER SUPPLIES IN SOUTHERN CALIFORNIA FROM WATER RECYCLING [4]

Timetable New Supplies	2010	2040
Amount of Water	451,500 Acre Feet	747,800 Acre Feet

According to the U.S. Bureau of Reclamation's Study, more than 270,000 acre-feet of the 451,500 acre-feet of the new water to be developed from water recycling by 2010 will occur within Orange County, and the area designated within the Study as the Inland Empire, within the Santa Ana Watershed.

This Feasibility Study and the construction of the projects recommended are essential to SAWPA's mission and crucial to the future within our watershed. A recent and more complicating factor has now occurred. On January 1, 2003, the Secretary of the Interior abruptly reduced more than 600,000 acre-feet of water deliveries to Southern California from the Colorado River, further challenging our region.

The U.S. Bureau of Reclamation's Study states, "the need for [the] study...is based on the premise that the increased use of recycled water will reduce pressures on imported water supplies and provide a continuous and dependable local source of supplemental water for Southern California.

The immediate need to implement the recommendations found in the U.S. Bureau of Reclamation's Feasibility Study is greater than ever.

Requests for completion and filing and inquiries have been made by many members including:

- Rep. John Doolittle, Chairman, Water and Power (106th Congress);
- Rep. Grace Napolitano, Ranking Member, Subcommittee on Water and Power;
- Rep. Ken Calvert, Chairman, Subcommittee on Water and Power;
- Rep. Jim Hansen, Chairman, Committee on Resources (107th Congress);

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[1] Reclamation Projects Authorization and Adjustment Act of 1992, P.L. 102–575, Title XVI, Section 1606.

[2] The cost-share partners, in addition to SAWPA, include the California Department of Water Resources, Central and West Basin Municipal Water Districts, City of Los Angeles, City of San Diego, Metropolitan Water District of Southern California, San Diego County Water Authority, and the South Orange County Reclamation Authority.

[4] Final Report, Southern California Comprehensive Water Reclamation and Reuse Study, April 2001, Executive Summary, Page ES–31.

- Rep. George Miller, former Ranking Member, Committee on Resources;
- Rep. Nick Joe Rahall, Ranking Member, Committee on Resources;
- Senator Dianne Feinstein; and
- Senator Barbara Boxer.

On February 4, 2003, I met with Commissioner Keys in Washington D.C. When I inquired as to the status of this Feasibility Study, he was unable to tell me its status or anything about it.

Since the Feasibility Study has not been submitted to Congress as required by law, and it is now almost two years since the Study was finalized, SAWPA requests that:

(1) The U.S. Bureau of Reclamation provide three full and complete copies of the Study to SAWPA; and
(2) The U.S. Bureau of Reclamation refund, in full, the $300,000 SAWPA paid to the U.S. Bureau of Reclamation for this Study.

In closing, SAWPA extends its thanks and appreciation to you and your staff in Boulder City and at the Southern California office for the professional manner in which you organized and conducted this undertaking.

Thank you for your prompt attention to this matter.

Sincerely,

Santa Ana Watershed Project Authority
P. Joseph Grindstaff
General Manager

EXHIBIT B

U.S. BUREAU OF RECLAMATION FEASIBILITY STUDIES
WATER RECYCLING IN CALIFORNIA

U.S. Bureau of Reclamation Feasibility Study	Amount of Water to be Developed	To be Constructed by
Southern California Comprehensive Water Reclamation and Reuse Study	451,000 AF	2010
San Francisco Bay Area Regional Water Recycling Program	125,000 AF	2010
TOTAL – NEW CA SUPPLIES	**576,000 AF**	**2010**

Source: U.S. Bureau of Reclamation

Mr. CALVERT. Thank you.

I now recognize Mr. Gritzuk to testify, the First Vice President of WateReuse Association.

STATEMENT OF MICHAEL GRITZUK, VICE PRESIDENT, WATEREUSE ASSOCIATION, AND DIRECTOR, WATER SERVICES DEPARTMENT, PHOENIX, ARIZONA

Mr. GRITZUK. Thank you, Mr. Chairman, and members of the Subcommittee. The WateReuse Association is pleased to have the opportunity to present this testimony on the role of water reuse in ensuring an adequate water supply for the Nation in the 21st century. I am Mike Gritzuk, Vice President of the WateReuse Association, and I am also Director of the City of Phoenix Water Services Department.

I want to commend you, Mr. Chairman, for convening this hearing today. The hearing is especially timely, given the numerous challenges facing local agencies in their quest to ensure future sources of water and water supply.

The WateReuse Association is a national organization whose mission is to increase the amount of high-quality water available to communities and the environment by promoting increased reclamation, recycling, and reuse.

The association has grown rapidly since it became a national organization. WateReuse now has members that total more than 270 nationwide, including more than 125 local water and wastewater agencies.

The practice of recycling water in the United States is a large and growing industry. An estimated 1.7 billion gallons per day is reused daily in the U.S. Recycled water use on a volume basis is growing at an estimated 15 percent per year. While four States—Arizona, California, Florida and Texas—accounted for an estimated 91 percent of all recycled water in 1995, various other States have growing programs, including States such as Nevada, Colorado, Georgia and Virginia.

Water reclamation and reuse will play an expanding role in water management in the 21st century, not only in the semi-arid Western States and the Sun Belt States, but perhaps in all 50 States. There are several reasons why this is true. Populations are growing rapidly in States such as Nevada, Arizona, California, Texas and Florida. There are no readily available sources of new water supplies in many geographic areas.

Drought events, such as the one being experienced by more than half the country, debilitate available sources, and alternative sources of supply such as desalinization, are currently, in most cases, more expensive than recycled water.

Long-term water projections in States such as Texas, for example, show that the demand will exceed supply by the year 2020. More rivers in the West, such as the Colorado and Rio Grande, have allocations that greatly exceed their supply. The only dependable, controllable and reliable supply of water in several fast-growing cities, such as Phoenix, Tucson, and El Paso, is recycled water in the long term.

I would like to underscore a statement which you made in early 2001, Mr. Chairman, and one which the Association strongly

agrees with. Referencing the energy crisis of a couple of years ago, you said, "Without adequate water supplies, the power crisis of today will become our water crisis out of tomorrow." How true.

The Federal Government must adopt the leadership role in promoting water reclamation and reuse. If appropriate actions are taken now, it will be possible to avoid the coming water crisis.

We also believe it is critically important for the Federal Government to provide adequate funding for research. One of the many issues faced by water researchers today is to understand the meaning and potential health and ecological impacts of hundreds of organic compounds that have been identified at trace levels in drinking water and wastewater.

We believe the first appropriate action for the Federal Government would be to establish a multiagency task force, including the U.S. Bureau of Reclamation, the Environmental Protection Agency, the Department of Defense, the Department of Energy and others, to conduct a governmentwide study of reuse issues. Possibly headed by the Council on Environmental Quality, this task force would assemble an inventory of Federal agency efforts in the areas of water reuse and water use efficiency.

The task force could produce a report to the President and Congress which would identify opportunities for improving and promoting water use efficiency. The net result of this effort would be to increase the visibility and importance of the issue of water reuse and water use efficiency to the Nation's future well-being.

I would also like to touch briefly on the Bureau of Reclamation's Fiscal Year 2004 budget request. I understand that decisions on funding levels are a matter for another congressional committee, but I also believe the Administration's request for Fiscal Year 2004 deserves this Subcommittee's attention and involvement.

The Administration's funding request for a total of only about $12.7 million to support a few Title XVI projects has been significantly decreased compared to prior years. This eliminates support for authorized projects that have not received funding in the past. Equally troubling, the budget request contains an explicit statement that water reuse has been determined not to be part of the core mission of the BOR. It further suggested this is a program without controls or sound management.

This evaluation could not be further from the truth. The Administration may believe that water reuse is not part of the Bureau's core mission, but the statutory obligations of Title XVI suggest otherwise. We request that you contact your colleagues on the Committee on Appropriations and urge them to increase Title XVI funding levels and to include language that reinforces water reclamation and reuse as part of the core mission of the BOR.

In summary, we believe that increased beneficial water reuse will be a critical component of the Nation's water supply in the 21st century. To ensure that this important resource is fully utilized and that appropriate actions are taken now in order to avoid a future water crisis, the Federal Government must play a leadership role. Some of the specific actions that should be taken by the Subcommittee include the following:

Support the formation of a multiagency task force, as I have indicated; support additional research on water reuse that is essential

to developing answers to questions on environmental pollutants of concern and to gaining public acceptance; direct the U.S. Bureau of Reclamation to continue to include water reuse as part of its core mission; and support increased funding for the Title XVI program.

Once again, the WateReuse Association wants to thank you, Mr. Chairman, for convening this hearing. We would be happy to work with you in addressing critical issues related to water reuse, and we are strongly supportive of your efforts to ensure adequate and safe supplies of water in the future.

One further request. Recently there was a video news clip on recycled water from ABC News on January 9th, which featured the Orange County Water District. We ask that that video, which was provided to your staff, be included in your official record.

Thank you, Mr. Chairman.

Mr. CALVERT. Without objection, so ordered.

NOTE: The ABC News video entitled "Groundwater Replenishment System'" submitted for the record has been retained in the Committee's official files.

[The prepared statement of Mr. Gritzuk follows:]

Statement of Michael Gritzuk, P.E., Vice President, WateReuse Association, and Director, Water Services Department, Phoenix, Arizona

Introduction

Mr. Chairman and members of the Subcommittee, the WateReuse Association is pleased to have the opportunity to present this testimony on the importance and role of water reuse in ensuring an adequate water supply for the nation in the 21st century. I am Mike Gritzuk, Vice President of the WateReuse Association, and I am representing the Association today. I am also Director of the Water Services Department of the City of Phoenix. On behalf of the Association's Board of Directors, I want to commend you, Mr. Chairman, for convening this hearing. The hearing is especially timely, given the numerous and increasing number of challenges facing local agencies in their continuing quest to ensure future sources of water supply.

As a way of introduction, the WateReuse Association is a national organization whose mission is to increase the amount of high-quality water available to communities and the environment by promoting increased reclamation, recycling, and reuse ("reuse"). One of the Association's primary goals is to assist our members in implementing water reuse projects that yield valuable benefits to their communities. We accomplish this overarching goal by encouraging more Federal, state and local involvement in water reuse efforts such as sponsoring research that demonstrates to the public that reclaimed water is a safe and reliable water resource, engaging in outreach services to provide information to the public about the safety and benefits of recycled water, and in funding partnerships.

WateReuse has been especially effective in California—where the Association began—in successfully eliminating barriers to reuse and in securing grant and loan funding for local agencies to build projects and conduct research. For example, the Association was instrumental in getting legislation enacted in 2001 that established the Department of Water Resources (DWR) Water Recycling Task Force, which is directed to advise DWR on opportunities for using recycled water in industrial and commercial applications and in identifying impediments and constraints to increasing the industrial and commercial use of recycled water in California.

The Association has grown rapidly since it became a national organization three years ago. WateReuse now has more than 270 members nationwide, including more than 125 local water and wastewater agencies in six states. One of the reasons the Association has been effective is due to its diverse membership which, in addition to local agencies, includes state and Federal Government agencies, consultants, equipment suppliers, and prominent researchers from the academic community.

The Association also has a long-standing and productive working relationship with the U.S. Bureau of Reclamation (USBR) and its Title XVI program. WateReuse testified on behalf of the original legislation that created this important funding program in 1992 and also actively supported the updated legislation in 1996. We have worked closely with USBR in the development of Title XVI guidelines (i.e., Guidelines for Preparing, Reviewing, and Processing Water Reclamation and Reuse

Project Proposals Under Title XVI of Public Law 102–575, As Amended) and the overall implementation of the program to date.

The Association has also been successful in developing a cost-shared research program with the USBR and other research organizations through its WateReuse Foundation. The Foundation is engaged in conducting "leading edge" applied research on important and timely issues, including: 1) evaluating ways to advance public acceptance of indirect potable reuse; 2) evaluating methods for managing salinity, including the disposal of concentrates from membrane treatment systems; and 3) understanding the occurrence and fate of emerging contaminants, such as endocrine disrupting compounds, in conventional and advanced water recycling systems.

Conducting research on these issues is particularly important to cities such as those in the Phoenix metropolitan area. In the semiarid Southwest, the only new available source of water is reclaimed water. To use reclaimed water for both non-potable and indirect potable applications, the public must be convinced of the safety and efficacy of this approach. Although much research has already been conducted regarding the safety of water recycling, new contaminants and concerns emerge as analytical capabilities advance. Often a "pollutant dejour" is discovered in water or wastewater before the science explaining its significance is completed. Thus, our research efforts related to water reuse must keep up with the latest science so that we can continue to demonstrate to the public that recycled water is chemically and microbiologically safe—and the only way to accomplish that worthwhile goal is through research.

Current Status of Water Reuse in the U.S.

The practice of recycling water in the U.S. is a large and growing industry. An estimated 1.7 billion gallons per day (bgd) is reused daily in the U.S. Recycled water use on a volume basis is growing at an estimated 15% per year. In 2002, Florida reclaimed 584 mgd of its wastewater and California ranked a close second with an estimated total of 525 mgd of recycled water per day. Florida has an official goal of reclaiming one billion gallons per day by the year 2010. California, likewise, has a statutory goal of a doubling of current beneficial use by 2010. Texas currently reuses approximately 230 mgd while Arizona reuses an estimated 200 mgd. This is but a small fraction (4.87%) of the total volume of wastewater generated—34.9 billion gallons per day—according to EPA's soon to be released 2000 Clean Water Needs Survey. Hence, the future potential for reclaiming treated wastewater is enormous.

While four states—Arizona, California, Florida, and Texas—accounted for an estimated 91% of all recycled water in 1995 (source: USGS), several other states have growing programs, including Nevada, Colorado, Georgia, North Carolina, Virginia, and Washington. At least 27 states now have planned recycled facilities and the overwhelming majority of states have regulations dealing with water reuse.

There is a long history of water reuse throughout the country, encompassing a wide variety of applications including landscape and agricultural irrigation, industrial processing, power plant cooling, and groundwater replenishment. There are numerous examples of water reuse success stories, dating from the 1950s. Some of the best known facilities and programs are described in Appendix A. To document the extent of water reuse in the U.S., the Association and the WateReuse Foundation are currently developing a national database of all reuse facilities. We would be pleased to make this information available to the Subcommittee once the project has been completed.

Importance and Benefits of Water Reuse

A growing body of evidence suggests that water reclamation and reuse will play an expanded role in water management in the 21st century, not only in the semiarid western states and "sunbelt" states, but perhaps in all 50 states. There are at least five good reasons why this is true:

- Populations are growing rapidly in states such as Nevada, Arizona, California, Texas, and Florida;
- There are no readily available sources of new water supplies in many geographic areas;
- Reuse meets the needs of industrial uses for non-potable supply and solving environmental discharge problems;
- Drought events such as the one experienced by more than half the country in 2002 debilitate available sources; and
- Alternative sources of supply such as desalination are currently, in most cases, more expensive than water reuse.

While all five factors are driving the growth of water reuse, perhaps none is as important as population growth. In a recent Awwa Research Foundation (AwwaRF) study to assess the future of water utilities, AwwaRF cited a U.S. Bureau of Census projection that predicted the U.S. population would double by 2100 using moderate fertility, immigration and longevity assumptions. The same projections quadruple using aggressive assumptions. State estimates support these projections. California's population is growing at a rate of 700,000 per year which means that the state's population will reach 50 million by 2020. Florida's population will increase from 14.2 million to 20 million by 2020. The population of Texas is increasing by 3000 people per day and is expected to increase from its current level of 20 million to approximately 50 million by 2050. Nevada and Arizona are the two fastest growing states in the country, according to the 2000 U.S. Census.

Long-term water projections in states such as Texas show that demand will exceed supply by the year 2020. Major rivers in the West such as the Colorado and Rio Grande have allocations that greatly exceed supply. The only dependable, controllable, and reliable supply of water in several fast growing cities such as Phoenix, Tucson, and El Paso is recycled water. Denver, Salt Lake City, Albuquerque, Las Vegas, Phoenix, Tucson, and Southern California depend heavily on water imported from the Colorado River to satisfy growing demands; this fast growing area is exploring various options, including water reuse and desalination, to keep up with demand. These hard facts suggest, as many knowledgeable observers routinely predict, that the U.S. will be facing a population-based water crisis, perhaps as early as 2015. If these projections take into account the impacts of localized droughts, then the crisis is already occurring in many parts of the country.

Think of how important water is to the nation's economy. A good example of the importance of water to industrial production can be illustrated by the requirements of Silicon Valley. The South Bay Water Recycling Project in San Jose, CA produces recycled water that provides benefits to 1.3 million area residents. By reusing this water instead of releasing it to the Bay, San Jose has avoided the imposition of a sewer moratorium that would put the brakes on the Silicon Valley economy" an economy which is one of the nation's largest in the development and export of computer hardware and software. It takes 10 gallons of water to make one microchip, and larger manufacturers in Silicon Valley require over a million gallons of water each day.

This one example, of many which could be cited, serves to underscore a statement which you made in early 2001, Mr. Chairman, and one with which the Association strongly agrees. Referencing the energy crisis of a couple of years ago, you said, "Without adequate water supplies, the power crisis of today will become our water crisis of tomorrow."

Water reuse is one of few alternative sources of supply that represents a viable, long-term solution to the challenges presented by growing municipal, industrial, and agricultural demands for water. Reclaimed water has numerous benefits, including the following:

- produces a reliable water supply;
- produces a sustainable supply of water to offset the need to find or develop alternative sources of drinking water supplies;
- uses much less energy than importing water;
- provides local control;
- avoids construction impacts;
- enhances water quality;
- costs less than ocean desalination;
- protects sensitive habitats; and
- reduces the quantity of treated wastewater discharged to sensitive or impaired surface waters.

Technologies, Costs, and Applications

Technologies employed to treat recycled water depend almost entirely on the application, or the "highest treatment for the highest use." As in Title 22, of the California Code of Regulations, bacteriological water quality standards are established based on the expected degree of public contact with recycled water. For example, if the primary application is landscape irrigation or cooling tower water, sand or duel media filtration and disinfection after secondary treatment is sufficient to achieve California's standards. If, on the other hand, the intended application is injection of reclaimed water into groundwater aquifers, advanced technologies such as microfiltration, reverse osmosis (RO), and ultraviolet irradiation must be employed to ensure chemical and microbiological safety of the reclaimed water.

The capital and operation and maintenance (O&M) costs of water recycling treatments depend on several factors including: the technologies employed, which will be

dictated by the application; applicable regulations; and customer needs. The costs are lowest for reclaiming wastewater effluent for irrigation of non-edible crops such as cotton, grasses, orchards, and vineyards. As the quality of water increases, so do the costs. The good news is that the costs of advance technologies are dropping with improvements and innovations as the result of applied research and increasing use. For example, the cost of RO has dropped over the past 30 years from over $5 per 1000 gallons of water to less that $2 per 1000 gallons. Costs also vary by region of the U.S. due to a number of factors including labor and capital costs.

New technologies supported by applied research are critical to providing safe and reliable treatment for recycling to meet our future urban, industrial, agricultural, and ecosystems demands. Research is needed to provide a scientific basis to use new technologies to facilitate the development of future water supplies using recycled water. New and innovative technologies will need to be developed to address a number of concerns. For example, technologies may need to be developed to cost effectively address trace organic chemicals that have unclear long-term health effects, such as endocrine disrupting and pharmaceutically active compounds, and newly identified pathogenic microorganisms.

The Federal Role in Water Reuse

In the opinion of our Association, the Federal Government must not only be a key player, but must adopt a leadership role in promoting water reclamation and reuse, water use efficiency, and conservation. If the appropriate Federal role is identified now and appropriate actions are taken, it may be possible to delay or avoid the coming water crisis.

There are numerous ways in which the leadership role of the Federal Government could manifest itself. Federal subsidies for local water reuse projects and targeted investment through demonstration grants, as well as tax incentives, could be used to promote reuse practices. The Federal Government could mandate increased use of recycled water at Federal facilities (e.g., military bases and new GSA buildings); these could be examples of good stewards of water efficiency and examples of water reuse.

We also believe it is critically important for the Federal Government to provide adequate funding for research. One of the many issues faced by water researchers is to understand the meaning and potential health and ecological impacts of thousands of organic compounds that have been identified at trace levels in drinking water and wastewater. The challenge is that analytical methods, which allow identification of emerging chemical contaminants for both drinking water and wastewater, are ahead of the science that allows us to understand what these emerging contaminants mean in terms of protection of public health and the environment, and ultimately what treatment technologies are needed to ensure safe and appropriate water reclamation. The same challenge is true for microbial contaminants. This is not only a water reuse challenge, but one that also applies to every municipality whose source of water supply is a major river or whose groundwater is impacted by septic tanks or the of wastewater via land application. Only through conducting substantial research can local, state, and Federal Governments provide proper assurance to the public that both drinking water and reclaimed water are safe.

We believe the first appropriate action for the Federal Government would be to establish a multi-agency task force to conduct a government-wide study on reuse issues. Headed by the Council on Environmental Quality (CEQ), this task force would assemble an inventory of Federal agency efforts in the areas of water reuse and recycling, water use efficiency, and conservation. Federal agencies covered would include, but would not be limited to, the Department of Interior's Bureau of Reclamation, the Department of Defense, Department of Energy, Environmental Protection Agency, Department of Agriculture, and the Tennessee Valley Authority.

The Federal task force would produce a report for the President and Congress. In addition to the inventory of current programs, the report would identify opportunities for improving and promoting water use efficiency. The net result of this overall effort would be to increase the visibility and importance of the issue of water reuse and water use efficiency to the nation's future well being.

Title XVI and Proposed FY–2004 USBR Budget Request

Mr. Chairman, I would like to take this opportunity to touch briefly on the USBR's Fiscal Year 2004 budget request. I understand that decisions on funding levels are a matter for another congressional committee, but I believe the Administration's request for Fiscal Year 2004 deserves this Subcommittee's attention and involvement. The request upends years of a policy understanding on the role of the Federal Government in water reuse and generally in the effort to develop substantial additional water yield, while minimizing disruptions to the nation's ecosystems.

The Administration has requested a total of $12.7 million to support 10 Title XVI projects. This denies any support for authorized projects that have not received funding in the past. In addition, the Administration has stated that other programs that support reuse technologies such as research are to be redirected to desalination program needs. We believe that desalination—like water reuse—has an important and vital role to play in ensuring adequate water supplies in the future. However, the Administration's budget abandons a decade old commitment to a balanced approach to developing new water supplies. This is exacerbated by the Administration's decision to seek $9 million in new program assistance for desalination efforts at the expense of ongoing reuse projects. Simply put, if these resources were equitably distributed, we would see new water reuse projects becoming operational in a timely manner. Instead, the decision to reduce funding commitments for reuse and to shift resources into desalination research means extended construction schedules, leading to more expensive projects because of the delays attributable to this decision. If Congress decides to reverse this attempt to eliminate the Federal-local partnership, the dividends will be realized in the production of new supplemental water supplies that are safe, reliable, and impervious to droughts.

Equally troubling is the direction the Administration is pursuing on water reuse policy. Many of the members of this Subcommittee may be aware of the innovative budget and program review tool contained in the Fiscal Year 2004 request. This tool, referred to as the Program Assessment Review Tool (PART), was used by the Office of Management and Budget. It seeks to conduct a seemingly impartial evaluation of Federal programs to determine whether they deserve continued funding and support. The budget request for USBR contains an explicit statement that, based on PART findings, water reuse is determined not to be part of the "core mission" of USBR. It further suggests that this is a program without controls or sound management. This evaluation could not be further from the truth. In fact, if one were to review the internal documents that served as the core research for PART, you would be astonished to learn that the analysis found the program to be effective in creating new water supplies to meet the purposes of Title XVI. Title XVI projects are professionally designed and engineered. Projects must have local cost-share and the Federal exposure is limited to providing the much needed assistance to leverage non–Federal resources to build these projects. These are projects that, I wish to emphasize, help to comply with Federal environmental mandates by providing protection to the environment and ensuring safe water supplies.

One does not need to delve into reams of paper to question the direction the Administration is heading, however. The Administration may believe that water reuse is not part of the Bureau's core mission, but the statutory obligations of Title XVI suggest otherwise. Congress explicitly authorized these projects. We request that you contact your colleagues on the Committee on Appropriations and urge them to reject the proposed budget level and policy direction of the budget by increasing Title XVI funding levels to at least $30 million and to include language that reinforces what is obvious, namely that water recycling and reuse is part of the core mission of USBR.

I also want to take a moment to express our concern about the USBR not providing to Congress to date the reports detailing the results of the Southern California Comprehensive Water Reclamation and Reuse Study (SCCWRRS) and the Bay Area Regional Water Recycling Project (BARWRP). For several years, the projects' co-sponsors have waited patiently for the final reports to be released. Each time an effort is made to secure the studies, we have been told that it is only a matter of weeks before it will be available. More than 70 communities have contributed to the funding of these studies. The time has long passed for patience. We urge the Subcommittee to direct the immediate release of these studies without further delay. Once the Subcommittee and the public has access to these studies, we can then proceed with the development of regional projects that will support compliance with the quantification settlement agreement (QSA), advance the knowledge of water reuse, and enhance economic productivity through increased yield based on reliable sources of water.

The projects specified in SCCWRRS present excellent opportunities for the Federal Government to support the development of water projects that will benefit all Colorado River basin states and substantially leverage Federal resources that would be intested. Benefit-cost ratios in the draft report show that an investment of approximately $500 million in the 34 projects specified in the report would yield $2 billion in benefits.

In summary, we believe that Title XVI is part of the core mission for USBR and the way to bring about water reliability throughout the West is through a solid partnership between the Federal and local governments. With regard to the SCCWRRS and the BARWRP reports, we further believe that "a deal is a deal." When local

communities contribute to Federal studies as partners, based on an understanding that reports would be developed and published, the act of preventing the publication of such studies must be dealt with in a clear and forceful manner.

Summary and Recommendations

In summary, we believe that increased beneficial water reuse will be a critical component of the nation's water supply in the 21st century. To ensure that this important resource is fully utilized and that appropriate actions are taken now in order to avoid a future water crisis, the Federal Government needs to play a leadership role. Some of the specific actions that should be taken by the Subcommittee include the following:

- support the formation of a multi-agency taskforce in CEQ to inventory water reuse programs within the Federal establishment and identify opportunities for enhanced water reuse and water use efficiency;
- support additional research on water reuse that is essential to developing answers to questions on environmental pollutants of concerns and to gaining public acceptance;
- direct the U.S. Bureau of Reclamation to continue to include water reuse as part of its "core mission;" support increased funding for the Title XVI program;
- support the enactment of legislation that would put in place a comprehensive program to authorized much needed water reuse projects similar to the kind of commitment Congress has made to wastewater and drinking water treatment needs; and
- increase Federal "venture capital" targeted grants (e.g., Title XVI) to assist communities in developing innovative reuse projects.

Conclusion

Once again, the WateReuse Association wants to thank you, Mr. Chairman, for convening this hearing. We would be happy to work with you in addressing critical issues related to water reuse, water use efficiency, and salinity management. We are strongly supportive of your efforts to ensure adequate and safe supplies of water in the future for the western United States.

APPENDIX A

EXAMPLES OF SUCCESSFUL WATER REUSE PROJECTS IN THE U.S.

"Water Factory 21" in Orange County (CA)—" The Orange County Water District (OCWD) manages and protects the vast groundwater basin in northern and central Orange County, CA that supplies approximately 75 percent of the water used by over two million residents in the agency's service area. For four decades, the District has advocated treating and recycling municipal wastewater as a reliable supplemental water supply to make its service area as self-reliant as possible. OCWD's premier water recycling project is a groundwater recharge program that has been designed to prevent salt water from infiltrating and contaminating the groundwater basin. OCWD takes wastewater from the neighboring Orange County Sanitation District and processes it through an advanced treatment system that includes granular filtration, reverse osmosis and ultraviolet radiation disinfection. This is OCWD's "Water Factory 21," which is designed to reclaims over 15 mgd of recycled water. After treatment, the recycled water is blended with local well water and is injected into the groundwater basin through a series of 23 multi-point injection wells. The fresh water forms a "water mound," blocking further passage of seawater. The project has been operating since 1976.

City of Phoenix (AZ)—The City of Phoenix operates three water reclamation facilities. The largest facility operates in cooperation with four other municipalities that also own the plant. The reclaimed water produced by this plant is the sole source of water for cooling towers at the regional Palo Verde Nuclear Generating Facility. Reclaimed water is also used for area farmlands and for restoration of wildlife habitat at the City's Tres Rios River Restoration Project. Tres Rios River is an example of how reclaimed water can by used to benefit the environment and enhancing quality of life.

County Sanitation Districts of Los Angeles County (CA) Reclaimed Water Projects—The Sanitation Districts of Los Angeles County (Districts) provide for the wastewater and solid waste management needs of over five million people in 78 cities and unincorporated areas of Los Angeles County, CA. The Districts operate 11 wastewater treatment facilities, 10 of which are involved in water reclamation. These 10 facilities produce 200 mgd of reclaimed water ranging in quality from undisinfected secondary effluent to filtered, disinfected tertiary effluents. The reclaimed water is reused for a variety of applications including landscape and agri-

culture irrigation, industrial process, recreational impoundments, wildlife habitat maintenance and ground water replenishment. There are over 450 water reuse projects serving 26 cities.

Pinellas County Utilities (FL)—Pinellas County Utilities provides drinking water, wastewater, reclaimed water, and solid waste serves to almost 1 million people in the Pinellas County which includes 24 municipalities. Pinellas County has a reclaimed water system that serves golf courses, residences, and commercial customers. The County is in the process of upgrading of two utilities treatment plants to expand capacity from about 13 mgd to 30 mgd and to upgrade the treatment process to an advanced wastewater treatment (AWT) process. These upgrades will allow the continued safe use of reclaimed water in the distribution system as well as allowing for discharges to surface waters during wet weather periods without adverse environmental impacts. The project will also provide for construction of major reclaimed water transmission mains. The use of reclaimed water helps to extend, conserve and protect valuable drinking water resources by off-setting demand.

Harlingen (TX)—" Harlingen, Texas, a city of about 57,000, is an excellent example of a municipal and industrial partnership to reuse reclaimed water. Harlingen provides 65 to 70 million gallons per month of reclaimed municipal wastewater to a hosiery manufacturer for manufacturing, and there is a demand for increased supplies in the future.

West Basin Water Recycling Project (CA)—West Basin Municipal Water District is a public agency that provides imported Colorado River Water and State Project Water to residential customers and water companies in southwest Los Angeles County, CA. In addition, the District provides its customers with recycled water that is used for municipal, commercial and industrial applications. The West Basin Water Recycling Project provides almost 22,000 acre-feet of recycled water annually, distributed to more than 150 sites. These sites use recycled water for a wide range of applications. Based in El Segundo, California, the state-of-the-art Water Recycling Facility is among the largest projects of its kind in the nation, with the ultimate capacity to recycle 100,000 acre-feet per year of wastewater. The150 plus sites use 7.1 billion gallons of West Basin's recycled water for non-drinking applications including irrigation, barrier water and industrial processes. West Basin has been successful in changing the perception of recycled water from merely a conservation tool with minimal applications to a cost-effective business tool that can reduce production costs, water filtration costs, and limit the need for expensive chemicals and dyes. Local oil refineries are major customers for West Basin's recycled water. The Chevron Refinery in El Segundo and the ARCO Refinery in Carson use recycled water for their cooling towers. The Mobil Torrance Refinery uses the water not only in its cooling towers but also in its boiler feed system.

San Antonio's Water Recycling Centers—San Antonio Water System (SAWS) provides drinking water, wastewater, and water reclamation services to over 1 million people in San Antonio, the seventh largest city in the U.S., and the surrounding area. SAWS has one of the largest water recycling systems under development in the U.S. SAWS, which calls its four award-winning wastewater treatment plants "Water Recycling Centers", produce 120 mgd of tertiary treated recycled water (sand filtration followed by chlorination and then dechlorination). By recycling its wastewater, SAWS is improving and protecting receiving stream quality and increasing water supply reliability and redundancy. Making greater use of recycled water will be one of the keys to making more water available for economic growth and development in San Antonio. Recycled water use is growing in San Antonio and includes agricultural irrigation, irrigation of public parks, and improving water quality in the Medina and San Antonio Rivers.

Water Conserv II (FL)—Water Conserv II, one of the largest water reuse project of its kind in the world, is the first water reuse project in Florida to irrigate crops produced for human consumption with reclaimed water. Jointly owned by the City of Orlando and Orange County, it has taken a wastewater effluent previously discharged to surface water bodies and turned it into reclaimed water, as asset that benefits the City, the County, and the agricultural community. The system encompasses two water reclamation facilities connected by transmission pipeline to a distribution center. From the distribution center, reclaimed water is distributed to 76 agricultural and commercial customers. The reclaimed water that is not used for irrigation is distributed to Rapid Infiltration Basins for ground water replenishment. The reclaimed water is monitored and controlled from a central computerized control system.

Monterey County Water Recycling Projects—Monterey Regional Water Pollution Control Agency (MRWPCA) and the Monterey County Water Resources Agency operate a regional water recycling project for agriculture. Nearly 20,000 acre-feet per year of water is used to irrigate over 12,000 acres of food crops. The recycled water

reduces coastal seawater intrusion, as well as replaces groundwater that is often too salty for long-term irrigation. Implementation of the project was made possible by an 11-year study that verified the safety of food crop irrigation. An extensive public outreach program was developed to address the needs and concerns of local growers. MRWPCA and the Marina Coast Water District want to further expand water reuse to urban uses including landscape irrigation and possible industrial applications. This project would involve ground water storage during the winter which has the additional benefit of slowing salt water intrusion.

Mr. CALVERT. Now we will recognize Mr. Scott.

STATEMENT OF DOUGLAS SCOTT, DIRECTOR, U.S. WATER/ SEWER GROUP COORDINATOR, FITCH RATINGS

Mr. SCOTT. Thank you, Mr. Chairman, Committee members.

My role in the financial industry, as a rating analyst, is to evaluate water and sewer credits, and also State revolving fund loan credits, to ensure their economic viability. The tact that I have taken with my submitted testimony is that I consider it the most effective means as far as maximizing Federal appropriations purely from an investment perspective, much in the same way that an investor would evaluate investments for restructuring a portfolio.

My conclusion in my testimony is that, under this approach, Federal moneys utilized to seed capital for a perpetual loan fund is the most economically viable method, as the interest generated would compound and ultimately provide more money for water projects.

Having said this, however, opportunities exist for the Federal Government to participate in types of projects or in individual projects with direct grants which would leverage local dollars and possibly decrease the need for Federal involvement on a larger scale in the future.

I would like to take the rest of my time to briefly discuss the perceived benefits of the Federal involvement in projects from a credit perspective.

In evaluating a credit, one of the areas that a rating agency looks to is the borrower's historical and projected financial operations. With any debt financing in the open market, an investor wants assurances that the debt will be repaid in a timely fashion. To gauge the likelihood of financial performance, the rating agency looks to an issuer's debt service coverage levels; that is, the amount that revenues exceed the liabilities. Stronger credits typically exhibit higher coverage levels than weaker credits, but in order to increase coverage levels, revenues must increase, liabilities must decrease, or a combination of both must happen.

In generating additional revenues, most local governments are limited in their ability to raise additional capital in ways that do not affect their constituencies, so those increased funds typically are borne by local residents in the form of increased taxes or increased utility rates. As a result, Fitch takes into consideration the impact of these increases in terms of economic burden. If Federal funds are available to reduce the needs to generate additional revenues, this is viewed as a credit positive because the financial burden to local residents will be reduced.

Another area of evaluation in the credit process is the amount of debt that a local government has and is expected to incur within the foreseeable future. Obviously, less debt is viewed more favor-

ably than more. So the greater the Federal subsidy, the less need there is for local government to finance debt or raise cash for needed projects. In this case, a direct grant would be more beneficial to an individual borrower from a credit perspective than a loan from the Federal Government, even one that is heavily subsidized.

Another aspect of the debt analysis is the equity contributed to a project. The more equity contributed, the more perceived the security to bondholders and the less for the amount needed to finance a project. In simplistic terms, this is similar to someone applying for a home loan. A home buyer contributing a sizable amount of cash toward the down payment is seen as less of a credit risk because that person has a vested interest to assure that the mortgage will be repaid in order to avoid repossession. Alternatively, a home buyer who contributes very little up front is typically perceived as less creditworthy because the investor is assuming more equity risk.

There are many other factors considered in the rating process, but one last area that's relevant for discussion purposes here is the perceived benefit to investors from a feasibility and willingness to pay perspective. In evaluating credit, Fitch contemplates the necessity of projects within the framework of the local government's primary mission. Projects which further the primary mission are more likely to receive support from the public and, therefore, debts supporting such projects is more likely to be repaid.

From a credit perspective, Federal involvement in a project is typically viewed favorably, in the sense that oversight by the Federal Government is generally assumed to ensure project viability or feasibility, as well as necessity.

I hope this answers some of your questions regarding the perceived benefits of Federal contributions from a rating perspective, and I'll be happy to answer any questions you may have.

[The prepared statement of Mr. Scott follows:]

Statement of Doug Scott, Director, U.S. Water/Sewer Group Coordinator, Fitch Ratings

The U.S. population increased by 13.2% between 1990–2000, with the West and South regions leading the nation in terms of growth at 19.7% and 17.3%, respectively.(1) Future projections indicate this trend will continue through 2025, albeit at a slightly reduced rate of growth overall.(2) To meet the consumptive water needs of this increase in population, additional water supply, treatment, and distribution infrastructure will be required. Historically, the Federal Government has played an important role in financing water projects through direct and indirect funding measures: directly, as in funding the construction of dams through the Bureau of Reclamation and the Army Corps of Engineers, and indirectly, as in the funding of water and wastewater infrastructure through Environmental Protection Agency (EPA) grants to the State Revolving Fund (SRF) programs. While future Federal funding will be driven by policy decisions of the President and the Congress, the method of how those funds are dispersed will determine the leveraging capabilities of the appropriations.

Direct grant funding is arguably the most cost-effective mechanism for disbursing Federal funds on a project basis, but no opportunity exists for leveraging of those dollars. Because direct funding is targeted to specific projects, administrative costs potentially can be minimized thereby providing more actual dollars for a project than if monies are appropriated as part of a Federal or state program. This ultimately would reduce the cost of a project. However, the primary limitation to direct grant funding from a fiscal perspective is that a grant by nature is a one-time source of funds for one specific purpose. This means that funding for other projects would require additional grants. So simply providing direct grants for a specific project, while there may be political, environmental, or economic justification for

such funding, typically limits the benefits of the grant to the immediate recipient and fails to leverage those monies for additional needs.

A method of maximizing Federal dollars is to provide "seed capital" for investment in an interest-bearing account. Additional monies could then be generated and utilized indefinitely or over a set period of time. In the case of a defined spending timeline, the required appropriation to fund a project or set of projects would be reduced based upon the rate of return of the capital investment and the timeframe over which the fund was depleted, essentially functioning in the same manner as an individual retirement account. For purposes of funding water projects, this would mean that grant funds would generate interest earnings, with the interest earnings and a portion of the grant dollars being used as direct grants for projects. The leveraged amount in this case would equal the total interest generated over the lifetime of the draws.

To maximize Federal leveraging further and ensure perpetuity of available funding, the "seed capital" should remain intact and continually be invested (i.e. loaned). For practical purposes, the appropriation could be utilized as a zero-percent loan to entities. This particular method of funding projects enhances the leveraging capacity of the Federal funds over an extended period of time in that repayment of principal would be available for additional projects. At the same time, borrowers receive a direct benefit in the form of an interest subsidy. However, because no interest earnings would be generated, the amount available for future projects would be limited both as to the initial investment and the timeframe of the repayment of the loan or loans.

To enhance the perpetuity of the appropriations and provide the most in terms of leveraging the "seed capital", the principal should be reinvested in loans to prospective entities which are repaid with interest. The Clean Water and Drinking Water SRFs are perhaps the best example of this type of funding program. Federal grants, along with state match monies, are deposited into the respective SRFs. Monies within the SRF fund are then loaned to recipients at rates below that which the applicants could receive on their own in the open market, but the fund continually expands as principal and interest repayments are received and then reloaned to other entities.

To meet the vast water and wastewater demands across the nation, many SRFs also issue leverage bonds in the open market which provide additional sources of revenue for funding water and wastewater infrastructure needs beyond that which could be accommodated from available program funds. These leverage bonds are overcollateralized by Federal grants and state matching monies, meaning that pledged resources exceed projected debt service liabilities, and this overcollateralization typically allows the bonds to achieve Fitch's highest credit rating. By achieving such superior ratings, SRF borrowing costs are typically less than what an individual borrower would achieve if such borrower were to access the open market on their own. Because of this leveraging, use of Federal funds is enhanced as opposed to funding loan projects on an individual basis.

Indicative of the success of the SRF programs to leverage Federal dollars for water and wastewater infrastructure funding is the ratio of Federal capitalization grants contributed to the amount of actual assistance provided. Moreover, for those states that have issued leverage bonds, the ratio of assistance provided is greater than states that have yet to do so. As of June 30, 2002, the EPA reports that the total amount of Clean Water SRF assistance as a percentage of Federal capitalization grants for states issuing leverage bonds was 228%, compared to 144% for states which have not leveraged.(3) Likewise, for the same period Drinking Water SRF assistance as a percentage of Federal capitalization grants for states issuing leverage bonds was 222% compared to 90% for states which have not leveraged.(4) While the SRF programs are perhaps the best example of leveraging Federal dollars, the concept of utilizing Federal monies to provide "seed capital" for a perpetual loan fund and issuing leverage bonds to increase the immediate source of funding availability has the potential to maximize Federal funding for many types of public projects.

Mr. CALVERT. I thank the gentleman.

Obviously, as we all know, a large part of our country is experiencing drought conditions. Happily, we had some snow in the Rockies recently that may help a little bit, but certainly was not enough. We have long-term water needs that we must address. In getting that water, obviously, from Mother Nature, sometimes she's not willing to let loose and we end up with these long-term

droughts. So this Committee, and certainly the Federal Government, over the last number of years, has looked at reclamation as a viable way of having certainty in water supply.

I want to ask this panel generally, what is the importance of Federal assistance to a project's planning, design and construction? What are the benefits of Federal contribution to the construction of local projects that are primarily financed through local mechanisms? As an individual who is more or less a fiscal conservative, as was pointed out by the gentleman in how these projects are financed, this is a great deal, it seems to me, but I don't want to preanswer the question. Just how can we leverage Federal money?

With that, I will ask the panel in no particular order. I guess we can go from left to right.

Ms. CODY. That's an interesting and difficult question. Obviously, from what we've heard today from the project proponents' point of view—and I've already said that CRS takes no position on these types of things—but certainly, from all I've gathered from reading this material, and also the testimony today, the benefits, as I think we just heard, include this leverage issue. It is one that comes up consistently. Another is how recycling compares to other alternatives. Whether they be factors such as firm or yield or, the ability to go on line right away, those are some of the things I think that have been highlighted by project proponents today.

Others on the panel?

Mr. GRITZUK. If I can just add to that, the normal way that a public entity finances a water reclamation project today is by itself, with funds raised by the ratepayers. In light of all the other pressures that we have confronting the water industry today, that is becoming an increasingly more difficult task.

Title XVI is probably the most popular way to fund water reclamation projects today. In Title XVI itself, there is a limit of funding, $20 million, and there is also a percentage limit that Federal funds cannot exceed 25 percent of the overall cost of the project. So you have to look at this as Federal funding provides kind of the seed money and the incentive to get the project going. But the long-term commitment still lies with the entity that is building that project. Also, in the longer term, it is the ratepayer that primarily pays for that.

Picking up on one more point from Mr. Scott here, that seed money that the Federal Government can provide also helps in the municipal bonding, in the bonding rating that the project gets.

Mr. CALVERT. Thank you.

General HABIGER. Mr. Chairman, San Antonio is entering this fight late because, as I said, we've been relying on the Edwards Aquifer. All we had to do was put wells beneath the City and pump the water out, put a little bit of chlorine in it, and we had a viable water source. But we are going to be more and more involved in Federal funding mechanisms in the future.

Our water plant right now, to wean ourselves off the Edwards Aquifer, in a worse case scenario, is in excess of $2.5 billion over the next 15 years. In terms of Title XVI, we received $200,000 about 6 years ago, which proved to be invaluable with our recycled water program. These Federal programs are viable. They shouldn't

be considered as "cash cows", in my view, but to leverage, as Mike pointed out.

Mr. CALVERT. Thank you.

Mr. GRINDSTAFF. Mr. Chairman, very quickly, it seems to me that throughout the West we have overcommitted ourselves, and if we're going to have sustainable systems over the long run, water recycling has to be a key component of that.

I really like the analogy of seed money. It helps people make the decision to move ahead and do the right thing.

Mr. CALVERT. Thank you.

Mrs. Napolitano.

Mrs. NAPOLITANO. Thank you, Mr. Chair.

I have listened with great interest to all of your testimony and I have about 50 questions for each one of you, but I'll try to hone it down to some of the ones that really stand out.

Generally, all of you agree that there is a great need, a great demand and a great benefit in continuing the use of recycled water projects and water reuse. I'm hoping that somebody can tell me how can we get together and get the Bureau—and I'm sure the Bureau has somebody upstairs who is asking them to do with less—but how do we convince the Administration or the powers that ben that have made the decisions to do away eventually with the actual recycling, against the public law that set that up for the Bureau of Reclamation. Would somebody answer that for me?

Mr. GRINDSTAFF. I'll make an attempt.

Back in 1992, the Congress authorized the Southern California Comprehensive Water Reclamation and Reuse Study—the SCCWRRS study it's been called—and they authorized a companion piece in Northern California. The Bureau of Reclamation has done an outstanding job of developing that report. They haven't brought it back to Congress, although I understand from the Department of Interior they are committed to bringing that back this next month.

It seems to me that that kind of work needs to continue, that throughout the West those kinds of studies ought to be done so you can identify the long-term opportunities for doing recycling in every State, and identify, as you do that, how that helps make the systems truly sustainable that have been built in the past.

Then it comes down to this body authorizing those projects after those studies are completed, authorizing the seed money to help really finish the implementation of the core mission of the Bureau of Reclamation, the development of the West. Their core mission was to help develop the West by providing water supplies, and they've done that wonderfully well. But in some cases it's not sustainable, and doing this, I think, helps them implement that core mission.

Mrs. NAPOLITANO. Anybody else?

Mr. GRITZUK. Yes. Particularly in the West, but it's also a national issue, our traditional water supplies, the fresh water, is running out. We don't have enough to sustain the population projections that we're seeing in the future.

So it would seem to us that, if the Federal Government, through what I suggested in my testimony, have the Council of Environmental Quality conduct a credible, technical study of what the fu-

ture needs are, particularly in those geographic areas of the country where they have virtually run out of their fresh water supplies. It would become very obvious that the next water resource for those geographic areas is reclaimed water. They have nothing else. So I think that could be another approach that the Federal Government could take, just do a credible study and see for yourself what the needs are in reclaimed water.

Mrs. NAPOLITANO. The problem is they haven't released the study, even though this Committee, this body, has asked for it more than once. I know I have asked for it twice. We are not able to get them to give us the information. One of the replies I received was that they were working on doing some adjustments to it, whatever that means.

Mr. Grindstaff, as former Mayor of Norwalk, I was very involved in the sanitation district that developed a lot of the recycled water in the area, that serviced a lot of the cities that are basically poor and disenfranchised communities that needed this seed money. I read some of the testimony and I noticed that some of it's only 10 or 15 percent, so it really is basically seed money.

Where would we be, like in San Gabriel, where we had a tremendous clean-up problem, that recycled water played a major part in the economic sustainability for that area, could you tell me where would we be if we had not had the Bureau step in and help out?

Mr. GRINDSTAFF. Well, I think, without the Bureau helping, many of the projects would not have been done. In fact, Southern California would be more dependent on Colorado River water and more dependent on importing water from Northern California. The consequences of that are immense economically.

As a water professional, I often just think about the water, but I am reminded, when I meet with community leaders, that when we have impacts on our water supply, it has dramatic impacts on the economic development of the region.

As I was talking with the General before the meeting here, Toyota just located a new facility in San Antonio, and water is a key element to them being able to have that in San Antonio. That kind of thing is very true in Southern California. Every city, every part of the Nation, really needs that fundamental infrastructure in place. Without that kind of assistance, that might not happen and, in fact, the communities might have untold kinds of impacts that are negative.

Mrs. NAPOLITANO. Thank you, Mr. Chair. I will wait for the next opportunity.

Mr. CALVERT. Thank you.

Mr. Renzi.

Mr. RENZI. Thank you, Mr. Chairman.

I failed in my obligations to also introduce a good Arizonan. Mr. Gritzuk, it's good to have you here. I thank you for your leadership with the WateReuse Association, and more so for your help in the State of Arizona as our Director of the Water Services Department in Phoenix. I was interested in your testimony, particularly in the summary and recommendations, with the idea of putting together a task force.

I mentioned in my opening remarks that we have a ski resort up in Flagstaff, Arizona that sits on public lands, that right now is

being debated as to whether or not we should be able to use reclaimed water to make snow. It would be a great economic impact for the City of Flagstaff to be able to produce snow up there. If the temperatures allow it, you would probably be able to ski an additional four to five months a year, which brings millions of dollars to the economy. The idea that reclaimed water would be used for snow making, the idea that we have heard today, how it's used for irrigation and landscaping.

Given the fact that you have this beautiful association that you've pulled together of members all over the country, and even have insights into the world use historically of reclaimed water and water reuse, what kind of exciting breakthroughs or advancements are you seeing when you talk about identifying opportunities and looking to the future, if you don't mind?

Mr. GRITZUK. Well, the breakthroughs are primarily in some of the research efforts associated with reclaimed water. We are seeing that the treatment processes, for example, that we use to reclaim water, are becoming more cost-effective. We are seeing that there are processes now where you can take out certain constituents out of the reclaimed water so that the water has greater use. There are technologies available now where you can develop a quality of reclaimed water by just naming it and you can do it.

Now, getting to your ski resort, what is the difference of using reclaimed water for crop production, for irrigation, and in your case, you use water to generate snow through another process? Reclaimed water is a perfectly acceptable product for that purpose.

Mr. RENZI. Thank you. There were some real discussions of whether or not early on we would be able to get to a purity level that, when we made the snow and it perculated back down into the aquifer, whether or not we would be tainting the aquifer. We found that argument to be wrong.

Mr. GRITZUK. I agree. That's a totally false argument. Today, reclaimed water is widely used to recharge the aquifer. Science has proven that this is a perfectly safe method to do that.

Mr. GRINDSTAFF. Can I add to that? Both Vail and Big Bear already recycle water for use as snow in those ski resorts.

Mr. RENZI. And I would add the Sunrise Ski Resort on the White River Indian Reservation, the Apaches, does. Yet we're not able in Flagstaff right now to overcome the environmentalists who won't allow us right now to do it.

General, I appreciate your service to our Nation, and also you go right back into service for the Great State of Texas, particularly in an area of need involving the water.

You talked about reducing the water use in your area by 33 percent, while the population increased 50 percent. I'm asking, could you share with me just real quick where that kind of a breakthrough comes from.

General HABIGER. Thank you, sir, for your kind comments.

We have a multifaceted program. Low flow toilets, low flow showerheads, are classic examples of what we've done. Our education program from kindergarten through 12th grade is recognized as being probably the best in the country. The young kids today, if they were to see one of us older individuals brushing our teeth by turning on the cold water and leaving it on while we brush our

teeth, would have a fit if they saw that, because we teach them that that's a terrible thing to do.

We have gone off and done some extraordinary things in terms of sending our agriculture expert and our community conservation expert to Israel for 8 days to pick their brains. They've got some of the best water conservation programs in the world. It is through those series of things, and incentivizing people with a rate structure where you have lower rates with less water used, improving the types of unaccounted for water issues—in other words, leaks, to get those water main leaks fixed quickly—all those things in combination have resulted in a conservation program that, in my view, makes us world class in San Antonio.

Mr. RENZI. Well, sir, you have become a great teacher. I'm grateful. Thank you, Mr. Chairman.

Mr. CALVERT. Thank you.

Mr. Baca.

Mr. BACA. Thank you very much, Mr. Chair. It's an honor to sit here on this Committee with you, and being with my colleague adjacent to my district. I look forward to working with you and trying to solve some of these problems that are impacting not only California but throughout our Nation.

I have a couple of questions. I would like to follow up with a question the Ranking Minority Member asked, a question in reference to the feasibility study that was done. Why do you feel the study has not been released by Interior? Does anybody have an idea?

Mr. GRINDSTAFF. I have spoken with both the commissioner and Assistant Secretary about the issue. They informed me that they are making some minor changes in the text and that they expected to have that study released within—well, they said a month, and it's been a couple of weeks ago. So it should be within a couple of weeks.

Mr. BACA. But beyond that, is there any other reason why they are not releasing it, besides minor changes?

Mr. GRINDSTAFF. I could speculate as to political reasons, but I would rather not do that.

Mr. BACA. Is it out of fear that we could produce a safe supply of water and their fear of the connotation that it can possibly be used as another alternative? I don't know. I'm just asking.

Mr. GRINDSTAFF. I don't want to speculate about why it hasn't been released.

Mr. BACA. OK. Anybody else want to tackle that?

Mr. CALVERT. I can speculate, but...

[Laughter.]

Mr. BACA. Thank you.

A couple of other questions. Has the Federal Government been responsive to local government needs in this area, and if not, what do we need to do?

Mr. GRINDSTAFF. I think that the Federal Government has very often been responsive. I think the study that was done, the study that we're talking about here, was a very useful study. It identified that, in Southern California, we could develop 450,000 acre-feet of new water supply, so I think that was a very good thing to do. They did a similar thing in Northern California. Obviously, they

can help in Texas, in Arizona, and throughout the West, so I think they have that ability.

I think the problem has been funding, honestly, getting money so that, rather than lots of talk, people actually say, hey, if I want to go build a program that develops 20,000 acre-feet of recycled water that's going to cost me $20 million, I can go to the Federal Government and they will help me get the seed money necessary so I can make that decision and move ahead. So that's the biggest difficulty, honestly.

Mr. GRITZUK. I would like to add to that answer.

Absolutely, the Federal Government has been responsive to the needs of the communities. Our request here is to continue the involvement of the Federal Government and maybe increase the involvement of the Federal Government.

But the experience we've had in Arizona, for example—and let me just use that as an example—we have had the involvement of the Bureau of Reclamation, the involvement of the Corps of Engineers, but the involvement basically was in study work, in providing some seed money, and the benefit of that, it does kick off a project and in the long term it's a very useful and beneficial project.

The negative of that is that the community itself has to come up with the overwhelming amount of funds to fund that particular project.

Mr. BACA. And that is a burden for a lot of the communities right now that are strapped, because they're not receiving the funding from the State because the States right now are in a deficit. So I believe the Federal Government has to come in and play a part if we're really going to look at the critical problems that is affecting our communities, and it's urgent that we look at other alternatives as well.

Doug?

Mr. SCOTT. Can I add one point to this, one thing I didn't mention in my oral testimony?

Water supply is obviously a critical component when we evaluate a water and sewer system, because if the supply is not there, the customer base cannot grow and the needs will not be met, and the utility system will ultimately suffer.

Having said that, I have worked on many of the credits in Southern California, including the metropolitan water district of Southern California, the Los Angeles Department of Water, San Diego and Irvine Ranch. One thing that becomes apparent in looking at areas, particularly in the West and the Midwest, where water supplies are stretched, is that as the economic growth has developed in those areas, it then becomes increasingly important for those areas to be able to demonstrate to us that they can sustain that growth over a long period of time. For many of those, recycled water is playing a part in it. As a result, if it's meeting the needs and it's able to sustain the growth, we typically have viewed that very favorably. As a matter of fact, one of the things we have cited as a weakness in Southern California is the conflict that has gone on with the surface water supplies there, so any enhancement to available water sources would be seen as a credit positive.

Mr. BACA. One final question that I have.

How can you suggest that the Federal budget priorities might be changed to accommodate water recycling? Do you have any ideas? Can you suggest how Federal budget priorities might change to accommodate water recycling?

Mr. ATWATER. Richard Atwater.

Certainly, Congressman Baca, I think, as has historically been the case since 1992, when this was authorized, the Appropriations Committee, clearly with the oversight and recommendations of this Committee, are a powerful voice to making sure that the priorities for projects are clearly identified, that this is western-wide. And certainly from the water resource association's perspective, when you look at the activities in Florida and Georgia and Virginia, and the water problems throughout the country, it really is a national issue.

But certainly for the Bureau of Reclamation, I think this Committee, as Mike Gritzuk pointed out, if you can articulate to the Appropriations Committee these priorities, I think it will carry a lot of weight.

Mr. BACA. Thank you.

Mr. CALVERT. I thank the gentleman.

Mr. Inslee.

Mr. INSLEE. Thank you. I appreciate your description of your conservation efforts. It's really good to hear about the good results that you've talked about today.

I wanted to ask you about the phenomenon of global warming and how it may impact your operations. As you know, the concentrations of carbon dioxide are anticipated to double in the next several decades from preindustrial times, which almost all reputable scientists believe is at least a partial result of our industrial activities on Earth.

I have been talking to a lot of water folks—and I'm from the Seattle area, and we're heavily dependent on the snow pack in the Cascades for our water supplies. We have very, very significant concerns in our part of the world, that it will raise the freezing level and we'll have less snow. Where we store our water in the Northwest, it's stored in snow pack, because we don't have as much storage capacity as we would need otherwise. We're really concerned about it up in our neck of the woods. I think most scientists believe there are a lot of significant changes in the rain cycle across the country that we can't entirely predict at this moment they're going to cause us some real grief.

I just wonder if that's something that any of your organizations have thought about, projected, talked to your Members of Congress about and the like.

Mr. ATWATER. If I may, I do serve on the California Water Commission, and over the last decade, the Cal-fed Delta-Bay program, where the Federal agencies and the state water agencies have looked at this issue of global warming, and much like the Northwest, in the Sierra Nevadas, one of the things we predict is, because of global warming, there will be less snow pack and more rainfall.

That goes back to the earlier discussions in the presentations. If we have less snow pack, that means our reservoirs will not fill, so we will have more droughts and more unreliable surface supplies,

which shows the critical nature, whether in San Antonio or Phoenix or Southern California or, for that matter, Seattle. If we have less snow pack and less rainfall, that's more unpredictable, that means the recycled water firm supply is going to be more important because our surface supply is going to be much more variable. They're going to have extreme floods, and then you're going to have sustained droughts. So on the Colorado River, if we have less snow pack, that's going to affect everybody from Denver to San Diego.

Mr. INSLEE. So I guess you're saying that this—I'm sorry, Mr. Grindstaff. Did you want to say something?

Mr. GRINDSTAFF. I would also like to add to that. There have been models of what might happen in a local region. The models are contradictory. The first set of models said that Southern California—I'll use that because that's the area I'm from—would have more rain under that scenario. The newest models that are out say there will actually be less precipitation than there currently is. We just don't know the impacts. I think it's clear that if the temperatures warm and the snow pack goes higher, we will store less water in the snow pack.

It's also clear there are major impacts on the flood control infrastructure, something we don't talk a lot about here. But that is a huge potential problem for water supply agencies that store water behind reservoirs now, where for use as drinking water they may, in fact, have to give up some of that storage to use it as flood protection. There are a whole series of issues that are tied to that.

Mr. INSLEE. Right. Well, I'm going to make an appeal to all of you. I know you come and lobby us, so I'm going to lobby you right back across the aisle just for a moment.

There are a lot of things we're going to need to do. Conservation, you've had great success in San Antonio, recycling water. Obviously, we're talking about that today. But I would appeal to you to try to talk to your legislators about this issue and how it may impact potentially your operations some day. The reason I say that is because I think this is an issue that, because it's sort of long term, we tend to not address it here in the U.S. Congress. I would appeal to you, when you have an opportunity to at least discuss this with your legislators, that you ask them to consider it and ask what Congress is doing about this. Because we can do all the recycling in the world, and all the conservation in the world, but if we have these very significant changes in our climate, we're just not going to be able to enjoy the lifestyle that we've enjoyed in the West for the last several decades.

I just hope that you will sort of add that to your portfolio issues that you talk to your Members about, because it's one that has gone on for three decades and there's no turning back from this problem. So I want to thank you for your efforts.

Thank you.

Mr. CALVERT. I thank the gentleman.

Mr. Pearce.

Mr. PEARCE. Thank you, Mr. Chairman.

I give my thanks to the panel for the presentations. The idea of water and water uses is long overdue, and in the West we find it sooner than in the East, but soon enough, worldwide, we'll all have

this discussion. Water not only will be but currently is the most valuable resource and most strategic resource, far, far more valuable than oil.

Miss Neely, what do you all do currently with your treated brine, your brine concentrates?

Ms. NEELY. I'm going to have to defer that question to Mr. Gritzuk, who is more of a technical person, so if I could, I'll have Mr. Gritzuk answer that for you.

Mr. GRITZUK. I would be happy to.

Brine disposal, as you are aware, is probably a major problem for an inland community or an inland State. The normal way to dispose of brine, which is the waste product normally from a membrane treatment process, like reverse osmosis, is to dispose of it to the ocean or down to the sewer. In a landlocked State like Arizona, we don't have the luxury of an ocean to dispose of it. So our methods are either to bring it to the sewer, or to go to something like evaporation ponds.

There has been a study by the Bureau of Reclamation that was done in Arizona, that indicated that for a metropolitan area like the Phoenix metropolitan area, if we were just to treat a portion through this type of method, it would require ten square miles of evaporation ponds, at a cost of over $400 million. Where do you find that kind of money, and where do you find ten square miles of vacant property in a metropolitan area? These are not doable.

Dumping it into the sewer is also a problem, because that salt winds up in your wastewater, and if you reclaim that wastewater, the salt remains in the wastewater. As far as reclaimed water with a high salt content, it has very little value.

So the answer here is that you need to have some breakthroughs in technology. There has to be a lot of research done so that the brine streams can be diminished or recycled and reused.

Mr. PEARCE. Thank you, Mr. Chairman.

Miss Cody, you were talking about the Bureau of Reclamation and the value of the projects. The Bureau of Reclamation went in and did a lot of projects, building dams, I think, and in New Mexico they lodged the first lawsuit, claiming ownership of all the waters that were behind the dam because they built the dam. They ignored the fact it was the first and only project that has ever been paid off completely. They didn't bring the suit against one of the others. I think they brought it because they thought New Mexico would not respond strongly. But the idea of ownership, Federal ownership of State water, is one—and I have one more question, so if you can narrow the response down. If we fund the Bureau of Reclamation and then they claim that these recycled waters belong to the Federal Government, I've got deep concerns.

Ms. CODY. Well, you've raised a very interesting question, and a complicated one. But the water rights situation is very complicated, as you know, coming from a Western State. But typically, the Federal Government, in terms of the ownership of the water itself, the Federal Government has tended over time to defer to State primacy in water rights in particular. There are some exceptions, like reserved water rights for Federal lands and things like that.

I'm not an attorney, so I won't get too far into it, but we do have people on our staff at CRS who are legislative attorneys and have

water rights expertise. But the typical way that the Bureau has handled this since 1902—and the 1902 Act itself expressly said that it wouldn't interfere with State water rights—but the typical fashion is for the Bureau to go into the State and apply for the water right under State law. Sometimes, though, you have situations where irrigators may have a preexisting right for a water. So it can get complicated as far as who actually has the right.

But as far as the Bureau projects, it's a right held in trust for the water districts—generally, I should say, except where there are people who have run of the river rights. In California you have some situations where people had run of the river rights prior to the CBP being built, things like that.

Mr. PEARCE. Thank you, Mr. Chairman. I think my response would be that that water held in trust 40 miles north of the Texas border, where El Paso and the Nation of Mexico are having tremendous water shortages, I suspect, with five electoral votes, the water held in trust would not necessarily reflect the needs of the five electoral vote State.

My last question, Mr. Chairman, is for General Habiger. You mentioned that you had made a 72 mile long pipeline. I have three pieces to this question. What area is the water coming from, and what did the residents of that county and that municipality that's closest to that have to say about the taking of the water from one area to the next, and if we shorten that up, then the next piece of the question is really where the meat is?

General HABIGER. The recycled water comes from three of our wastewater treatment plants that belong to us. They are within the city limits of San Antonio. The pipeline circumvents the City, at about eight miles out. There were no complaints whatsoever about where that water was going.

Mr. PEARCE. So, Mr. Chairman, the pipeline only carries your water in a loop back around to you.

General HABIGER. Yes, sir.

Mr. PEARCE. I would like to go ahead and ask the question to anyone on the panel. You all would be doing this in one way, but a lot of the cities in the Nation are going to end up moving water. Again, I look at that as a small state. I know it's not recycled water that we're kind of focused on here, but it all comes together as we consider.

For instance, Texas is buying water—they're buying farms in New Mexico, and they're asking that they receive the water at the State line of Texas. If dollars, if sheer economic size is allowed to solve the problems of water, then all of the water in the State of New Mexico could eventually be bought and delivered at the border of another State.

So, Mr. Chairman, as we go through this—and I'll leave this question for anyone who wants to address it, as my time is well over—but that contemplation about what do we do when we take water from one area to the next, and the entire economic base and population base of the previous area is completely left behind. I know that's not your case and I appreciate that, but any addressing of that would be appreciated.

General HABIGER. If I could, Mr. Chairman, just address that very, very quickly. I would submit, sir, that you carry that problem from a State to a State to the problems we have in Texas, where those issues go from county to county. We're in negotiations to try to get water from an adjacent county, but the State legislature passed a law saying that the pipeline could not be built to get water from one county to another. So this issue goes to the very core of water.

Mr. PEARCE. Thank you, Mr. Chairman. I think the response indicates that it's going to be an ongoing discussion and one that gets fairly flavorful before the next century is over.

Mr. CALVERT. As you'll find out, Mr. Pearce, water disputes go on in every State in this union, and have been going on for a long time.

Mr. Grindstaff, obviously I am from the area that you represent, and certainly the Southern California wastewater reclamation and reuse study, as authorized by Congress, how would that help achieve the goal of drought-proofing the region?

Mr. GRINDSTAFF. Well, Mr. Chairman, thank you for the question.

The Southern California reuse study identifies in our region 270,000 acre-feet per year of new water supply that we could develop, and should that study be reported to Congress and be authorized, then it would spur the development of that water supply and significantly allow us to reduce our demands for imported water.

Our goal is to reduce the amount of water we import, even while our population grows dramatically. That study would help immensely.

Mr. CALVERT. How much water do you import now?

Mr. GRINDSTAFF. We import half a million acre-feet of water per year.

Mr. CALVERT. So this would cut back by 50 percent the amount of imported water?

Mr. GRINDSTAFF. If it were built immediately, it would. The way we expect it to be implemented is over a period of years, as the population grows. So what it probably does in reality is reduce what we import by 150,000, maybe 100-150,000 acre-feet per year, if we implement it over 20 years. If we do it sooner, then obviously we would have as bigger—

Mr. CALVERT. If, in fact, we can negotiate our way into a soft landing on the quantification settlement agreement, do you believe we could have that—if we focused on this, to have that in effect within the 15-year time line of the—

Mr. GRINDSTAFF. Absolutely. We have an outline of a plan that would allow us to get it done by 2010. As years go by, we need to probably stretch that to 2012, but I believe we could get that done within that timeframe.

Mr. CALVERT. Good.

On Title XVI, Reclamation has responsibility for implementing the only congressionally authorized water reclamation reuse program we have. Yet the agency says the program was not meant to be a grant program.

Are there concerns that you have with the program, and if so, please suggest to us how we can reshape the present program to make it more effective. I put that out there to all of you. Obviously, you all like Title XVI, I believe. We'll start with anyone who wants to address that question first.

By the way, we have been joined by Mr. Atwater from the Inland Empire Utilities Agency.

Mr. ATWATER. Thank you very much, Mr. Chairman.

Since I was involved in 1991 and 1992, when Congress authorized Public Law 102-575 and talked about Title XVI, and also active in 1996, what I would say is that this is only a recent phenomenon over the last year or so. Previous Secretaries—Certainly, if you look at the press release that Secretary Lujan articulated before the authorization, the Bureau of Reclamation initiated the Southern California study before Congress even enacted the statute and recommended it.

Back in the 1980's, when I worked at the Bureau of Reclamation, worked for the Department of Interior, water recycling, reuse, was always thought of strategically as an important part of the Colorado River solution and Cal-Fed Bay-Delta issues.

Mr. CALVERT. Maybe I can even rephrase this question and make it very simple for everybody to be on the record.

Do you believe that water recycling and water reuse is a core function of the Bureau of Reclamation?

Mr. ATWATER. Yes, without question.

Mr. CALVERT. Anybody else who would like to answer that question?

Mr. GRITZUK. Yes.

Mr. GRINDSTAFF. Absolutely.

Mr. CALVERT. General?

General HABIGER. Absolutely.

Mr. CALVERT. The gentlelady from Arizona?

Ms. NEELY. It's vital. Thank you.

Mr. CALVERT. So there's no disagreement. I presume that's unanimous at the table.

Ms. CODY. In true CRS fashion, I could tell you it depends on what you look at. But looking at the Bureau's current mission statement, it does say one of the mission components is development of water supply. Historically, that's been for irrigation.

I think the big question you're facing is water for municipal and industrial use. That has not been in the traditional mission of the Bureau, but Congress, of course, has the prerogative to change that.

Mr. CALVERT. Obviously, congressional intent has been and continues to be that reclamation and reuse is a vital function of the department.

Mrs. NAPOLITANO. Mr. Chairman, would you yield?

Mr. CALVERT. I would be happy to yield.

Mrs. NAPOLITANO. I'm going to quote the public law, that one specific area, section XVI(O)(2), the general authority. "The Secretary of the Interior, hereafter Secretary, acting pursuant to the Reclamation Act of 1902, the Act of June 17, 1992, 32 stat. 388, and acts amendatory thereof and supplementary thereto, hereafter Federal reclamation laws, is directed to undertake a program to in-

vestigate and identify opportunities for reclamation and reuse of municipal, industrial, domestic, agricultural wastewater and naturally impaired groundwater and surface waters, for the design and construction of demonstrated and permanent facilities to reclaim and reuse wastewater and to conduct research, including desalting, for the reclamation of wastewater and naturally impaired ground and surface waters."That has not been changed.

Mr. CALVERT. Duly noted.

Mrs. NAPOLITANO. Thank you.

Mr. CALVERT. Does the gentlelady have any other comment to make?

Ms. CODY. Of course, that's absolutely right. I'm trying to just give the perspective as a point in time over the last 200 years. But certainly we have noticed a trend in the last 10 or 15 years, since this law has been enacted, with not only the Bureau of Reclamation but other Federal agencies—and I've testified before on this point—that Congress is being asked more and more to fund these types of programs, whether it's ecosystem restoration connected with water supply, water recycling, an interest in desal, those kinds of things. So there is a trend here in that way, and there are laws on the books for this.

Mr. CALVERT. Thank you.

Mrs. Napolitano.

Mrs. NAPOLITANO. Thank you, Mr. Chair. I took a little of your time. Do you want it back?

Like I said, I have a whole slew of questions. But I would certainly like to ask the General a question about the statement he made, that Texas has 16 regions that have projects. Are any of those located along what is now the belt of drought, along the river?

General HABIGER. Yes, ma'am. The entire State is encompassed in those 16 regions.

Mrs. NAPOLITANO. No. I'm talking about are any of those on the border in the area where you now have critical drought.

General HABIGER. Yes, ma'am, they are.

Mrs. NAPOLITANO. Where are they?

General HABIGER. Well, it includes those—you're talking about the counties in the southern part of the State?

Mrs. NAPOLITANO. Right. What I'm trying to figure out is if any of these projects are able to produce water to help the farmers, because they have been starved of water from the Rio Grande for the last...is it 7 years, 5 years?

General HABIGER. Yes, ma'am. All of the counties along the Rio Grande River have developed viable plans that have been approved by the Texas Water Development Board. They've all been deconflicted so that one region is not counting on the water from another region. Those plans were all approved, all 16 plans, in the spring of last year, 2002.

Mrs. NAPOLITANO. Have any of them been funded or implemented?

General HABIGER. We're in the process of—They have not been funded. Implementation has begun. I cannot tell you about the other regions, but I can tell you about my region. We are very aggressively implementing those programs with not only our recy-

cling program, which as I said was our first step, but our second step is an aquifer storage recovery program in the southern part of our county, second only in scope and size to Las Vegas, which is the largest in the country. And then we're going after alternative water sources in other areas of the State. The entire State, as I said, have these plans.

Across the State of Texas, as I recall, the bill is in excess of $14 billion.

Mr. SCOTT. If I could add a point to that, prior to working at Fitch I worked for the Texas Water Development Board and was there when they did develop those plans. The short answer to your question is yes, there are a couple of regional planning groups that are there on the border.

Bear in mind that the regional plans were developed in response to a drought in Texas during the Eighties. It was determined that the plans were needed to ensure that there were source water supplies during a drought of record. So what the regional plans have contemplated, as far as developing those supplies, particularly along the border, does include recycled use water, which I believe is probably what you're interested in knowing.

Mrs. NAPOLITANO. So you're talking over 10 years ago. Are there any plans now operating to be able to assist those areas deal with the current drought?

Mr. SCOTT. The funding requirements that were for those projects—there were two parts to it. Yes, some funding has occurred for the projects that were listed on the plans. In conjunction with that, though, when the bill was passed to create the regional water planning groups, it also determined that, once the plans were approved, that in order for those projects to receive State assistance, they must conform with the projects on the plans so that you didn't have conflict, so that the basins were not conflicting over water.

Mrs. NAPOLITANO. So the short answer is they're not up and running?

Mr. SCOTT. It is up and running, because many of the projects have been funded through the Water Development Board. Now, as far as specific projects for water recycling, I can't address that because I'm not there and—

Mrs. NAPOLITANO. Those are the ones I'm more interested in, because that's the topic of what—

Mr. SCOTT. I do believe that some of those projects have been funded, but I'm not sure if they've been funded with the State or if they've been funded through bonds in the open market.

Mrs. NAPOLITANO. My question is not really of whether they've been funded. I'm trying to figure out if that has been of any aid to those drought stricken areas that are losing financially and many people are losing their farms because of that.

I'm very thankful to hear, General, that you have indeed focused on a lot of education, to be able to inform and educate the user about the value of water. I hope that others begin. I have long been of the opinion that it does take somebody's leadership to begin a process, and that is all water agencies' responsibility.

I have one more question, to both you, General, and to Mr. Gritzuk, and also to Richard. One question. Who owns recycled water?

Mr. GRITZUK. I believe there has been some litigation about it in the State of Arizona, and recycled water is owned by the entity that recycles it, at least that is Arizona law. I don't know what it is in other States.

General HABIGER. Not being a lawyer, I'm probably going to step on a land mine here. But from my perspective, that water belongs to the ratepayer, because that ratepayer, as we discussed earlier, funded the program in large part.

Mr. ATWATER. Like most things with California, it's always more complicated than Arizona and Texas. But generally speaking, in California, because our water laws have a hodgepodge of rules and such, generally it is similar to Arizona, in that the agency that produces the water owns it. What gets complicated is that, over time, if it's discharged down a stream, and then somebody else diverts it, and then the State water board would have to have a water right permit to divert it, and all those sorts of issues.

For example, on the San Gabriel River, which you're familiar with, and the Santa Ana River, we have river judgments that allocate and provide for the use of recycled water as a supplemental supply, for both the San Gabriel Valley and the Central Basin area. That's a court decree. So it's always a little bit more complicated. But generally you need to hire a lawyer and figure out what the rules are.

Mrs. NAPOLITANO. Thank you. It seems to me that maybe Congress should be able to determine who is the actual owner, as was stated before, who is the actual owner of that water, regardless of what agency claims it. I can remember sanitation telling me that they claimed it and were charged to buy it back.

Mr. ATWATER. The only thing I would say, from a programmatic and policy standpoint, one of the positive aspects of the way Congress in 1992, when you enacted the Title XVI statute, and you talked about the Bureau of Reclamation's mission, if the Federal Government is providing the seed money, the venture capital, if you will, and they're not involved in owning, operating, or future liability, then you have solved the issues that we've talked about from New Mexico or Texas or Arizona, Nevada or California's perspective. It's a local responsibility and we're going to comply with the applicable State law.

So if New Mexico and Arizona have unique different laws than California or Texas, the Federal role is to encourage the project to be built, but the local responsibility and the water right procedures of how that's accounted for will be consistent with both history and that unique circumstance in each State. So you solve that problem.

If the Bureau owned the project and was operating it, then you get into all those messy issues that you've been dealing with for a long, long time, like the Central Valley project, the Central Arizona project, who owns the water. Because now you've got this nexus of Federal ownership and you're going to have to come back to your Committee to resolve those issues over time.

From my standpoint, from working at the Bureau of Reclamation, that's one of the very strong positive aspects of having a

grant, a targeted funding program, where the Federal Government is providing the leadership to encourage the projects to go forward, but you avoid having that future liability, and it's local control and it's local responsibility.

Mr. CALVERT. Thank you. I thank the gentleman.

I want to thank this panel. I have one quick question, and then we'll close this hearing.

On the issue of brine for the inland States, I know that that probably is, from a technical standpoint, the single-most difficult issue you must deal with. Is it possible—and I guess anything is possible—to work out an agreement with Mexico on a brine line down to the Sea of Cortez that would connect not just Arizona but Nevada, Utah, and be able to move that brine, or do you believe that may be impossible?

Mr. GRITZUK. From a technical point of view, Mr. Chairman, and given enough money, I would suspect that that's possible. But I would also offer that that's the wrong direction to take. And let me give you an example.

In Arizona and other States, we import Colorado River water. That water is very expensive to us. And then, if we take that water and put it through a membrane treatment process, 15 to 20 percent of the original source becomes your brine waste stream. Here we are, where we import it at a high expense, and now we're exporting 15 to 20 percent of that at also a very high expense.

So I would offer that the answer here is to improve the treatment processes so that there's a lesser amount of the brine stream, and also invest in research on ways that brine can be reduced and reused, so that we're not just throwing that product away.

Mr. CALVERT. Thank you. I appreciate this panel being here. Obviously, from all of us here, I think you understand the congressional intent is that we support water reclamation. It is a certain source of water in an uncertain time, especially in this country. We spend a lot of money on droughts, in trying to fix a problem after the fact. I think we can be more proactive here in the House and in this government to support reclamation that is both a good value for Federal dollars to leverage a significant amount of water supply to this country. So I appreciate your coming out here and traveling great distances to give us good testimony and answering our questions.

[The prepared statement of Mr. DeLoach follows:]

CWD Cucamonga County Water District

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Robert A. DeLoach
General Manager
Chief Executive Officer

March 25, 2003

Representative Ken Calvert
Chairman, Subcommittee on Water and Power
1522 Longworth House Office Building
Washington, DC 20515

Representative Grace Napolitano
Ranking Minority Member, Subcommittee on Water and Power
1609 Longworth House Office Building
Washington, D.C. 20515

Subject: Oversight Hearing, Water Recycling

Dear Chairman Calvert, Ranking Member Napolitano and Members of the Subcommittee:

The Cucamonga County Water District, serving retail water and wastewater customers in the Inland Empire cities of Rancho Cucamonga, Fontana, Ontario and Upland, is very concerned about the future of the Bureau of Reclamation's Title XVI program. As you know, the Inland Empire region of Southern California faces unique challenges meeting obligations to provide water and wastewater services. As a result of the CALFED process, less water is available to our region. And, as a result of the Secretary's recent decision on the Colorado River, less water is available from the that source. Now, we learn from a review of the FY 2002 Budget, that the Title XVI Water Recycling Program is proposed to be phased out. This occurs at the same time our immediate area, Southern California and the entire West is experiencing tremendous growth. Recycled water is absolutely critical to our economic future.
During our most recent trip to the Capitol we had the opportunity to attend your subcommittee's budget hearing and were very pleased to see the open and frank discussion regarding the Bureau's 2004 Budget and the apparent lack of investment in Title XVI and related reclamation issues. We also had the opportunity to discuss these issues with members of your staff as well as with Representative Napalitano. From Commissioner Keys' comments, it's not clear what the Bureau of Reclamation's mission is anymore. One thing is clear; funding for Title XVI needs to be substantially increased in the FY 2004 appropriation. The Bureau's proposed level of funding, $12.8 million, is woefully inadequate and less than half the appropriation of last year's appropriation.

As a local water supplier, we are coping with drought, increased water quality standards, challenges from perchlorate and other toxins, decreased supplies from traditional sources and the ability to meet the tremendous growth within our region. Developing recycled water is vital.

We serve over 150,000 customers, and customers who are looking to us at the local level to insure that our water supply is available and secure. Over the past five years we have averaged over 1,000 new metered customers each year. Our agency will have rights to over 18,000 acre feet of this valuable resource that must be put to beneficial reuse. Funding through Title XVI programs serve as seed money to secure other funding and is viewed in a very positive light by our financial institutions. Without recycled water as a part of our resource mix we will be forced to turn to imported water supplies from the State Water Project or produce additional groundwater from already stressed aquifers. Our groundwater basins are experiencing increasing regulatory oversight as well for emerging issues such as perchlorate and other legacy contamination constituents from our agricultural heritage. Recycled water is reliable and cost efficient. It is in fact new yield and completely drought proof.

We have valued your assistance on this and other water related matters in the Inland Empire over the years and we look to your leadership to address these issues. If we can provide you with any assistance please feel free to contact me at your convenience. As you know our region, through SAWPA, the Inland Empire Utilities Agency, the Milk Producers Council and others are willing to provide you with assistance where needed. Thank for taking the time to consider my thoughts.

Respectfully;

Robert A. DeLoach
General Manager/CEO

c: Representative David Dreier
Representative Joe Baca
Board of Directors, CCWD
Chino Basin Watermaster
Inland Empire Utilities Agency
Santa Ana Watershed Project Authority
Metropolitan Water District
Milk Producer's Council

Mr. CALVERT. With that, this hearing is adjourned.
[Whereupon, at 11:48 a.m., the Subcommittee adjourned.]

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