

Western Water Resources Infrastructure Strategies: Identifying, Prioritizing and Financing Needs.



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WESTERN STATES WATER COUNCIL

5296 South Commerce Drive, Suite 202 / Murray, Utah 84107 / (801) 685-2559 / Fax (801) 685-2559
Web Page: www.westgov.org/lwswc

June 2011

Dear Governor:

As a policy advisory body, reporting to western governors, the Western States Water Council (WSWC) is charged with helping ensure the West has an adequate, sustainable supply of water of suitable quality to meet our diverse economic and environmental needs now and in the future. The West depends on an intricate and aging system of weirs, diversions, dams, reservoirs, pipelines, aqueducts, pumps, canals, laterals, drains, levees, stormwater works, wells, and water treatment, wastewater and hydroelectric power plants. This infrastructure is designed to conserve, control, store and manage the water that supports our present way of life.

In the 2006 Water Report, *Water Needs and Strategies for a Sustainable Future*, subsequently adopted as policy by the Western Governors' Association (WGA), the Council presented a number of findings and recommendations for facing various challenges related to infrastructure. Recognizing that many are long-term problems requiring a consistent and sustained effort to find solutions, one of the report's recommendations was that the Council organize and sponsor a series of ongoing biennial symposia to bring myriad stakeholders together to address our growing infrastructure needs, including ways to quantify, evaluate, prioritize and fund those needs.

In April of 2008, the WGA, WSWC and Interstate Council on Water Policy sponsored the first in a series of workshops and symposia on infrastructure needs in the West and the Nation, and promising strategies for meeting those needs. Among the findings highlighted at the workshop was the fact that water-related infrastructure investments are a key to our economic prosperity and future environmental/ecological improvements. A number of recommendations in the WGA 2008 *Next Steps* Water Report, also adopted as policy, were drawn from the workshop.

The purpose of this report is to summarize the findings and recommendations from a November 2010 symposium in San Antonio, Texas on *Western Water Resources Infrastructure Strategies: Identifying, Prioritizing and Financing Needs*. The symposium was convened by the Council and Texas Water Development Board. Western Governors' Association (WGA) staff participated, and the meeting was co-hosted by the WSWC's Western Federal Agency Support Team (WestFAST).

Over 100 federal, state and local officials, consultants, bankers, engineering firms and other interested stakeholders gathered to discuss challenges facing the West.

Included herein is a summary of the findings and recommendations from the meeting, drawn from the proceedings, presentations and discussion. They are not consensus recommendations, and no attempt has been made to verify individual statements. Rather, this information will be further developed and refined by the Council and used in making recommendations regarding appropriate short-term actions, long-term strategies, and policy resolutions for the governors' future consideration.

We very much appreciate the support of the governors individually and collectively as we address the many water resources challenges facing the West, including infrastructure needs, in partnership with federal, local and tribal governments, non-governmental organizations and myriad stakeholders.

Sincerely,

A handwritten signature in black ink that reads "Weir Labatt, III".

Weir Labatt, III
Chairman
Western States Water Council

A handwritten signature in black ink that reads "Tony Willardson".

Tony Willardson
Executive Director
Western States Water Council



Photo: U.S. Army Corps of Engineers

Western Water Resources Infrastructure Strategies

The estimated five-year investment need for all infrastructure repairs and rehabilitation is

\$2.2 trillion.

PATRICK NATALE
Executive Director, American Society for Civil Engineers, November 2010

Foreward

Western Water Resources Infrastructure Strategies: Identifying, Prioritizing and Financing Needs was a symposium convened by the Western States Water Council (WSWC) and the Texas Water Development Board (TWDB) that was held in San Antonio, Texas on November 8-10, 2010. The agenda can be found in Appendix B.

Over 100 federal, state and local officials, private consultants, investment bankers and other interested stakeholders gathered to discuss the challenges facing the West and the Nation. Western Governors' Association (WGA) staff participated, and the meeting was co-hosted by the WSWC's Western Federal Agency Support Team (WestFAST).

The Symposium produced a number of findings and recommendations addressed to federal and state water managers, local land use planners, financial organizations and private investors. This report summarizes those findings and the recommendations are included in Appendix A, but no attempt has been made to develop or express any consensus.

Moreover, the findings and recommendations do not constitute the views or policy positions of the WSWC or Western Governors, except as otherwise separately expressed in the WGA Water Needs and Strategies reports and subsequent formal WSWC and WGA policy statements.

Key Findings and Next Steps

The most recent American Society of Civil Engineers (ASCE) Report Card gives the Nation's drinking and wastewater infrastructure a "D-" grade, its dams a "D," and its levees and inland waterways a "D-." The current deplorable grade for our infrastructure impacts our lives and the economy, raising public health and safety issues, as well as the looming specter of future repair, rehabilitation and replacement costs. Inadequately addressed infrastructure problems were the most frequently noted issue in an October 2010 American Water Works Association (AWWA) survey of utility professionals. Investments in project rehabilitation and new construction are sorely needed.



Federal, State, tribal and local governments face significant challenges in addressing their infrastructure needs. Investing to support the availability of clean water is a key to continued economic growth. Efforts must continue in these key areas:

- 1) Value of Water** – Investors are beginning to look at “water stress” as a factor, which could put the West at a competitive disadvantage. Water is a valuable resource to be used carefully and conserved.
- 2) Water Conservation and Reuse** – Conservation and reuse help alleviate water stress in the West. Water conservation and demands on water resources also need to be taken into account in land-use planning and decision-making.
- 3) Asset Management Principles** – Infrastructure needs must be evaluated based on standard criteria that evaluate risks to: (1) health and human safety; (2) economic growth; and (3) the environment. Investments may then be made based on long-term capital budgeting efficiencies, moving away from “annual incremental choices.”
- 4) Private Financing and Construction** – Public private partnerships and alternative project services delivery offer various advantages and may be employed with acceptable returns on investments.
- 5) Federal and State Infrastructure Investments** – The need for stable or increasing funding of infrastructure, especially in small and rural communities, must be addressed.

Total construction spending over the last five years is down by 10%, and private non-residential building is down 25%.

PERRY FOWLER

*Texas Associated General Contractors,
November 2010*

Next Steps

- 1) The WSWC will continue to encourage conservation and efficient use of western waters.
- 2) The WSWC will work with member States to help identify and quantify their water and related infrastructure needs, and promote appropriate asset management and capital budgeting.
- 3) WSWC will sponsor a 2012 symposium to focus on State financing and funding authorities and opportunities to promote more public and private investment.
- 4) The WSWC will continue to actively support appropriate federal investments in projects and programs that provide jobs and economic security, while protecting the environment.
- 5) WSWC, working with its Western Federal Agency Support Team, will identify opportunities to streamline regulatory requirements to facilitate the timely construction of projects in an environmentally responsible manner.
- 6) WSWC will continue to provide western governors with expert advice on water policy and infrastructure programs.

Summary of Issues and Ideas Raised by Workshop Attendees

Investing in our water infrastructure provides a needed long-term foundation for maintaining and growing the economy by ensuring plentiful and clean water supplies. Water is an important consideration in sustainable economic growth, and a lack of adequate supplies of water of suitable quality can be a significant limiting factor. Moreover, for every \$1 billion spent on water infrastructure, an estimated 28,500 jobs are created through direct, indirect and “induced” spending (with the latter referring to higher personal spending by owners and workers). Personal earnings grow by \$1.1 billion and the gross domestic product (GNP) by \$3.4 billion.¹

Water projects are becoming increasingly more complex and difficult to design, permit, build and finance. Balancing economic benefits with environmental protection is important, but may sometimes create unnecessarily burdensome cost and scheduling problems. There is no single “silver” bullet to address water supply/demand or infrastructure challenges, but there are a number of tools available to begin to better address the challenges we face. Moreover, low interest rates and low construction material costs have created a “window of opportunity” for project construction and financing. Now is the time to invest in needed water resources infrastructure construction, repair, rehabilitation and replacement projects.

People in the West are “passionate” about water! It directly and indirectly impacts their lives and quality of life. Any water development project or protection program usually will involve significant private property rights, as well as externalities and third-party impacts, which often raise related public policy questions. Differing values and the complex trade-offs involved in water resources planning, development and protection, often make decision-making and balancing public policy difficult. State, federal and local leadership is a key to meeting our current and future water needs. Effective water resource planning and management requires robust public outreach and education, coupled with data collection, sound science and interagency collaboration.

Clean water is a precious and increasingly scarce resource. It is a valuable commodity, a complex mixed good, providing public and private services. For example, water stored for

1. Source: Professor Stephen Fuller, George Mason University.

irrigation uses in accordance with exclusive private property rights, granted by States, can also be used simultaneously to provide public and private hydropower, public fisheries and public recreation. Quantifying the value of water is a difficult task. However, it is important to recognize that someone has to pay for water and related goods and services.

Water conservation is good public policy and an important component of any private water utility business model or public agency water management plan. Appropriate pricing policies encourage conservation. Public education and outreach are also key to reducing per capita water use. However, convincing rate payers and private investors that customers should pay more for less can be a hard sell.

Managing water demand through efficient water use and conservation can yield savings that may help avoid or delay the need for developing new supplies and related infrastructure.

In much of the West, water conservation efforts are crucial, but will likely be insufficient by themselves to address water supply challenges related to growth, including future municipal and industrial needs and growing energy demands. Investments to develop new and alternative sources of supply are necessary.

At the utility level, some of the tools available to water (and power) purveyors to encourage conservation are: full-cost pricing strategies that reflect water scarcity and increasing marginal supply costs; strategies designed to reduce per capita demand; and rigorous programs for monitoring and addressing leakage. Moreover, utilities may improve system reliability by acting to diversify and balance their water resource portfolios, and use alternative water supplies like brackish or reclaimed water where available and appropriate, while reserving or conserving high quality waters for potable uses.



Photos: U.S. Army Corps of Engineers



The present value of the capital stock portfolio of the Army Corps of Engineers has declined from a peak value of
\$250 billion in 1983
to
\$165 billion today,
with \$60 billion in authorized projects and an annual investment of \$2 billion. Roughly
\$100 billion is needed
to repair levee systems, while
\$125 billion is required
to replace the current navigation lock system.

STEVE STOCKTON, *Director of Civil Works, USACE, November 2010*



Water Governance

There is a growing and increasingly serious need for collaboration and leadership at all levels – Federal, State, tribal and local government – to address the Nation’s water infrastructure needs. Public support and political will are necessary to deliver real solutions to our national water problems. Now is the time to act. Postponing efforts to address water challenges by reducing unnecessary demands and providing adequate water supply services, including the necessary infrastructure, will likely only lead to increasing costs, greater public health and safety risks, and increasing economic and environmental losses.

Too often water governance is inadequate and rates are not aligned with the true cost of service, including external third-party costs, in part due to the limited jurisdiction of the governing body and political pressures. We also need to end battles between public and private purveyors, and encourage and inspire market solutions to water problems. In the West, the purpose of water resources planning and development has traditionally been to put water to beneficial use, which requires infrastructure. Irrigated agriculture is the predominant beneficial use, and much of the West’s infrastructure has been dedicated to agriculture-related uses. Drying up agriculture to satisfy municipal and industrial needs is spreading, but it is not an optimal or often even an acceptable solution. There needs to be a closer connection between land-use planning and water supply planning and recognition of the impacts of uncontrolled growth. Growth is best managed first at the local level.



Stakeholders at local and regional levels need to cooperate to develop new water supply alternatives, including the use of brackish water resources and reuse of reclaimed waters. Further, sharing information regarding water planning and development efforts with all interested parties and building a shared vision for the future will help make the best use of available resources and leverage collaborative efforts where possible. Educating state legislators about water infrastructure projects and their benefits can enable and empower them in securing project approval and funding.

We can't depend on Washington, D.C. to solve our problems for us! However, a significant and legitimate federal role remains, considering the role played in water governance as a result of federal land ownership, tribal trust responsibilities and federal regulatory mandates. Federal financial incentives and technical assistance are essential to promote compliance with federal water quality and environmental mandates, particularly as they impact small rural communities with limited resources.

Small systems, many of which are located in rural areas that cannot be connected to other systems, often lack the resources to fund projects on their own or effectively participate in the political process. In many cases, State and Federal assistance is critical. Multi-agency outreach programs (e.g., funding fairs) may be useful for helping small systems and rural systems find available assistance.

Every western State provides some type of financial assistance for water resources development and protection. Dedicated funding from sales taxes, energy severance taxes, and other revenue streams have been used by States to provide comparatively reliable sources of funding for grants and loans. Securing local infrastructure loans with water rights is effective, as default rates are extremely low.



Photo: U.S. Army Corps of Engineers

Water and Financial Markets, Risk and Investment

Our population is growing and water demands are changing in ways that often were not envisioned when much of our infrastructure was built. We need to reevaluate and redefine our water needs, better evaluate the risks to our existing infrastructure, and improve asset management and system operations. The phrase “pay me now or pay me later” is particularly applicable to water infrastructure. We also need to consider new infrastructure investments.

Western states and local governments are embracing strategies to: (a) assess the condition of their infrastructure and whether or not it is leading to more or less vulnerability to water stresses; (b) create incentives for water and power utilities to cooperate and conserve; (c) create incentives for multiple agencies to jointly “own” water infrastructure (pipelines, reservoirs, etc.); (d) promote water transfers and regional water markets; and (e) focus on building sufficient local supplies to meet local demands and limit the need to import water.



State participation in regional water projects has enabled entities to optimally size projects where the existing population could not otherwise fully support the debt. At the local level, public and private water (and power) utilities are evaluating and rebalancing their resource portfolios. They are also working together to maximize the benefits from joint water and energy conservation and investment programs.

Specific measures that reduce risk for water utilities include: (a) investing in local supplies, including water reuse, desalination and groundwater recharge; and (b) investing in green infrastructure as a cost effective way to manage stormwater and conserve water resources. This may mean redefining what we think of as water infrastructure.

There is a need to fully account for the life-cycle costs of investments. Water systems need to be managed with a “planned retirement date” or a “replacement date” in mind. Addressing life-cycle costs involves increasing and improving investments and contributions from all stakeholders. Subsidies distort consumption patterns, and may increase infrastructure stresses. However, small water systems often lack the resources to adequately manage their infrastructure and their needs can’t be neglected in this process.

State and local governments have spent
\$1.1 trillion
since the 1960s on water and wastewater infrastructure, with an additional
\$140 billion
federal investment, but EPA’s 2002 analysis identifies a current need of
\$540 billion.

STEVE ALLBEE

*EPA Gap Analysis Program Director,
November 2010*

Private risk capital is profit driven and investors are generally intolerant of bureaucratic processes. Removing unnecessary regulatory requirements and obstacles to investment in water resources is an appropriate goal, while retaining reasonable and necessary protections through oversight, rules and regulations that are streamlined and coordinated at all levels of government. Public and private accountability is important to avoid unnecessary project delays and minimize regulatory compliance costs.

Public and Private Financing and Debt

Financing new water projects and the rehabilitation or replacement of existing infrastructure is a principal challenge to meeting our present and future needs. Like water, money is a scarce and precious resource. It is important to remember that there is a difference between bad debt and good debt. Funding water infrastructure is an investment that pays substantial dividends to the economy, public health, and the environment, that often are not always adequately weighted in cost/benefit analyses.

There is also a distinction between “projects we need” and “projects that we would like to have.” It is important to clearly differentiate between our needs and wants, and set clear priorities. Using planning and prioritization tools, such as capital budgeting and asset management, to help set those priorities is a good start.

It is uncertain how concerns over federal spending and the national debt will impact water infrastructure and this uncertainty will likely make it more difficult to secure general fund appropriations for projects. Some members of Congress see appropriations for infrastructure as an important investment, while others view it as pork barrel spending. Doing away with earmarks raises questions about how Congress will set future priorities for construction projects. Congress, the Administration and States have an opportunity to reconsider how we define national needs and priorities, and programs and policies to encourage increasing investment in water infrastructure.

Federal capitalization of state revolving funds (SRFs) is absolutely critical to the survival and continued operation of small drinking water and wastewater treatment systems (under 10,000 users). Although States are doing a good job of leveraging SRF and federal stimulus dollars, they face their own fiscal challenges and need greater flexibility and fewer restrictions on State SRF management to address their specific infrastructure needs.

Inconsistent, inadequate and untimely Federal and State funding increases project construction costs, risk and financing costs. Private capital markets are willing and able to help close the funding gap in meeting our water infrastructure needs, and may at times be an appropriate remedy for some of the problems inherent to public funding. Revising federal law and lifting the current volume cap on tax exempt water and sewer private activity bonds would further open up access to private capital markets.

There is also a need to help communities and industries recognize the cost of the potential loss of their water supply, even temporarily. Bond investors and underwriters should be aware of industries’ and utilities’ sensitivity to risk and competition related to water stresses. Standardization in bond ratings is elusive and at present few rating agencies or investors carefully consider the role of water in assessing and quantifying risk.

State and local governments have studied numerous potential projects, but lack general revenue funding to construct them all and may not have the ability to raise the needed capital through bonds. Using previously vetted projects, investors may be able to step in with private capital and benefit from eliminating the potentially long delay needed to obtain

Of about
\$135 billion
in construction-related federal stimulus spending, only
\$21 billion
was directed towards water and wastewater projects.

KEN SIMONSON
Chief Economist, Associated General Contractors of America, Nov. 2010

project “buy in” or regulatory approvals. Legal suits and water rights litigation are other major factors that contribute to uncertainty and bond price volatility. Public private partnerships (PPPs) are contractual agreements between public and private entities to deliver a project or service. They are not the equivalent of privatization. Each partnership serves a specific purpose. PPPs and alternatives to the traditional design-bid-build project delivery method can shift risks away from public or private owners and toward investors, as well as sometimes make it easier to develop and finance projects. PPPs have the potential to reduce overall development risk and capital investment, improve efficiencies and cost effectiveness, and maximize the respective strengths of the public and private sectors. Some limitations exist that may present unnecessary obstacles to PPPs and alternative delivery methods for public projects. Lessons learned from using PPPs in one sector, such as transportation, are transferrable to other sectors, including water.

Among other things, successful PPPs require: (1) an appropriate balance between public and private resources; (2) established political leadership; (3) a supportive statutory and political environment; (4) an organized structure; (5) detailed business plans; (6) a guaranteed revenue stream; (7) stakeholder support; (8) the careful selection of partners; and (9) an understanding of each partner’s motivations.

Ultimately, when it comes to either traditional public or alternative private financing, there is a need to raise “real cash to service real debt.” Although there is no “silver bullet,” the costs of repairing and rehabilitating our Nation’s water infrastructure needs will only increase if needed projects are delayed. Now is the time to invest in our water infrastructure.

*The Texas Water
Development Board
has invested
\$12.4 billion
in water and wastewater
infrastructure, including
\$1.5 billion
in 2010.*

KEVIN WARD
TWBD Executive Administrator



RECOMMENDATIONS FROM WORKSHOP ATTENDEES

1. We should continue to recognize water is a scarce and precious resource in decision making.
2. Increasing the public/private investment in needed water resources infrastructure at all levels should be a national goal.
3. We should have an honest public dialogue over the value of water and its importance to our future economic and environmental well-being.
4. We should recognize the risks and costs associated with the potential loss of clean abundant water supplies given inadequate infrastructure, as even temporary interruptions can lead to expensive results (e.g., lost agricultural or industrial production, increased illnesses and health care costs, etc.)
5. Water education and public outreach programs should be conducted at all levels of government.
6. We should “establish water as the economic and jobs issue that it is.”
7. Water and energy demands are inextricably related and public and private utilities should take advantage of myriad strategies for reducing unnecessary use.
8. Utilities should also seek to balance and diversify their sources of supply, including consideration of the use of waters of impaired quality where appropriate, such as brackish groundwater and reclaimed wastewater.
9. Full cost pricing of water and wastewater service should be used to convey their value to customers and other beneficiaries.
10. All levels of government should establish water resources infrastructure improvements as a public policy priority, and identify and quantify their own water infrastructure investment needs, and establish an appropriate capital budget.
11. State legislative leaders should be educated about the project planning and development process.
12. We should explore potential opportunities to build trust and political coalitions among water interests and the political will to act on collaborative solutions.
13. We should increasingly focus on integrated regional water resources and land use planning, including protection of ecosystems and agricultural lands
14. We should be pragmatic, open-minded and innovative – learning from global advances in governance, technology, financing and construction techniques.
15. Water reuse, desalination of brackish ground water and other “un-tapped” resources should be considered in many areas of the West.
16. Federal and State agencies should evaluate their ability to provide assistance to small communities and as appropriate other entities otherwise unable to effectively plan and finance water projects
17. The consequences of not investing in our water infrastructure should be better communicated.
18. We need to get away from “annual incremental choices,” and instead work towards capital budgeting and asset management based on more sustainable long-term water planning and funding.
19. State and federal governments should provide stable, secure sources of funding sufficient to address our water-related infrastructure needs.
20. Congress should reauthorize the Environmental Protection Agency’s State Revolving Fund (SRF) programs, and identify dedicated revenue sources for water infrastructure.
21. The Reclamation Fund is a critical resource, and should be fully used as authorized for Bureau of Reclamation projects and programs.>>

RECOMMENDATIONS FROM WORKSHOP ATTENDEES

- 22. Congress should enact legislation to exempt water and wastewater facility bonds from state volume caps for tax-exempt private activity bonds, or raise the current limits.
- 23. State and local governments should work with regulators and funding agencies to adopt policies that facilitate alternative project delivery.
- 24. Where appropriate, PPPs and alternative delivery methods can and should be used to leverage resources and make it easier to develop and finance water infrastructure projects.
- 25. We should redefine our public and private water needs and promote water infrastructure system sustainability and resiliency.
- 26. We should develop an infrastructure scoring methodology that ranks investments based on economic, safety, and environmental risks.
- 27. Asset management and life-cycle cost planning should include maintenance, repair, replacement and when needed removal costs.
- 28. Opportunities to optimize benefits through joint ownership or cooperative regional program or projects should be considered.
- 29. Local water supplies should be developed first, before looking to import water, but regional water transfers and

markets are often necessary and appropriate.

- 30. Utilities should control costs with better engineered systems, new service delivery options, public private partnerships and green infrastructure.



- 31. Intergovernmental, inter-agency cooperation in reviewing and approving infrastructure projects can maximize benefits by coordinating funding to ensure the timely completion of projects.

- 32. Regulatory requirements should generally be flexible, coordinated among government agencies, and streamlined to minimize the cost of compliance and avoid unnecessary project construction delays.

- 33. Federal legislative priorities should include: (a) regularly enacting a biennial Water Resources Development Act (WRDA) authorization; (b) increasing the U.S. Army Corps of Engineers' and Bureau of Reclamation construction, operation and

maintenance, budgets and appropriations; (c) maintaining EPA SRF clean water and drinking water capitalization grants; (d) the creation and maintenance of dedicated water infrastructure funding, and (e) financial and technical assistance in meeting federal water quality and environmental mandates.

- 34. Political leadership and transparency should be employed to gain public support for PPPs.

- 35. Municipalities, utilities and other borrowers' sensitivity to water stress, related risks, and steps taken to minimize such risks should be thoughtfully identified, considered, and disclosed in financial documents in order to inform and facilitate credit ratings, underwriting, investing and securing competitive costs of capital.

- 36. Project engineers, operators, and others with critical information on cost estimates, available technology, project timing and risks should be consulted and communicate with financial professionals.

- 37. Federal, State and local agencies should evaluate the cost of services that they provide and consider action as appropriate to ensure adequate revenues are available to meet projected water infrastructure needs.

Appendix B

DAY 1 – MONDAY, NOVEMBER 8

10:00 am **Symposium Registration**

Noon **Buffet Lunch**
in the Skyline Atrium
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Symposium Meeting Rooms: Tango 3 and 4

12:45 pm **Welcome and Introductions**

Weir Labatt, Chairman, Western States Water Council and Member of the
Texas Water Development Board

1:00 pm **What's Driving Infrastructure Needs?**

Michael Deane, Executive Director, National Association of Water Companies

1:20 pm **Water Resources Planning and Development in Texas**

Moderator, Weir Labatt, WSWC/TWDB

Kevin Ward, Executive Administrator, Texas Water Development Board
Carlos Rubinstein, Commissioner, Texas Commission on Environmental Quality
Robert R. Puente, President and CEO, San Antonio Water System
Perry Fowler, Director, Heavy, Municipal & Utilities Divisions,
Associated General Contractors of Texas

3:00 pm **Break**

3:30 pm **Financing Today's and Tomorrow's Needs**

Moderator, Tom Iseman, WGA

Shawn Dralle, Managing Director, RBC Capital Markets, Phoenix, AZ
John Crew, President, Public Werks, Inc., Austin, Texas
David Yanke, Vice President, R. W. Beck, an SAIC Company, Austin, Texas
Sharlene Leurig, Senior Manager, Ceres Investors and Environmentalists

5:30 pm **Adjourn**

6:00 pm **Sponsored Social Hour**

Western Water Resources Infrastructure Strategies: Identifying, Prioritizing and Financing Needs

Convened by the Western States Water Council and Texas Water Development Board



**Texas Water
Development Board**

*Holiday Inn Downtown on the River Walk, San Antonio, Texas
November 8-10, 2010*

In Cooperation with the Western States Federal Agency Support Team



DAY 2 – TUESDAY, NOVEMBER 9

- 7:30 am **Continental Breakfast**
- 8:00 am **Western State Water Plans, Priorities and Water Development Programs**
Morning Moderator – Tony Willardson, WSWC
- Jeanine Jones, Interstate Resources Manager, CA Department of Water Resources
Dennis Strong, Director, Utah Division of Water Resources
Michael Purcell, Director, Wyoming Water Development Commission
Jennifer Gimbel, Director, Colorado Water Conservation Board
John D’Antonio, State Engineer, New Mexico Office of the State Engineer
- 10:00 am **Break**
- 10:30 am **Identifying, Prioritizing and Financing Project Needs: Future Alternatives**
Patrick Natale, Executive Director, American Society of Civil Engineers
Richard Norment, Executive Director, National Council for Public-Private Partnerships
Rodney Chapin, Senior Vice President, CDM
Claudia Copeland, Specialist in Resources & Environmental Policy,
Congressional Research Service, U.S. Library of Congress
- 12:00 pm **Lunch**
- 1:00 pm **Making the Best Use of What We Have: Capital Budgeting & Life-Cycle Management**
Afternoon Moderator, Michael Fallon, USACE
- Steve Allbee, Project Director, Gap Analysis, U.S. Environmental Protection Agency
Dr. Elliot Ng, PhD, PE, (LTC Ret) Chief, Asset Management,
U.S. Army Corps of Engineers
Ella Mae Herrera, Manager of Maintenance Services Division,
U.S. Bureau of Reclamation
John Maxwell, Vice President, Director of Integrated Water Planning,
HDR Engineering, Inc.
- 3:00 pm **Break**
- 3:30 pm **Multipurpose & Multiple Agency Projects: Matching Needs & Resources**
Antelope Valley/Creek Project – Roger Figard, City Engineer, Lincoln, NE
Prairie Waters Project – Mark Pifher, Director, Aurora Water, Aurora, CO
San Antonio River Mission Reach Project – Suzanne Scott,
General Manager, San Antonio River Authority (SARA)
- 5:00 pm **Adjourn**
- 5:30 pm **Sponsored Social Hour**

DAY 3 – WEDNESDAY, NOVEMBER 10

- 7:00 am **Continental Breakfast**

- 8:00 am **Federal Water Resources Infrastructure Program Challenges & Priorities**
Moderator, Weir Labatt, WSWC/TWDB

Steve Stockton, Director of Civil Works, U.S. Army Corps of Engineers
Steve Allbee, Project Director, Gap Analysis, U.S. Environmental Protection Agency
Michael Gabaldon, Director, Technical Resources, U.S. Bureau of Reclamation
Tom Christensen, Regional Conservationist – Central, USDA Natural Resources Conservation Service

- 10:00 am **Break**

- 10:30 am **Where Do We Go From Here?**
Facilitated Discussion
Moderators, Tom Iseman & Tony Willardson

- 11:30 am **Wrap-Up/Summary**
Sue Lowry, Wyoming State Engineer’s Office

- Noon **Adjourn**

Contributing Sponsors:



Photo: U.S. Army Corps of Engineers

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The RBC Blue Water Project™ is an innovative, multi-year, global commitment to help protect the world's most valuable natural resource: fresh water.

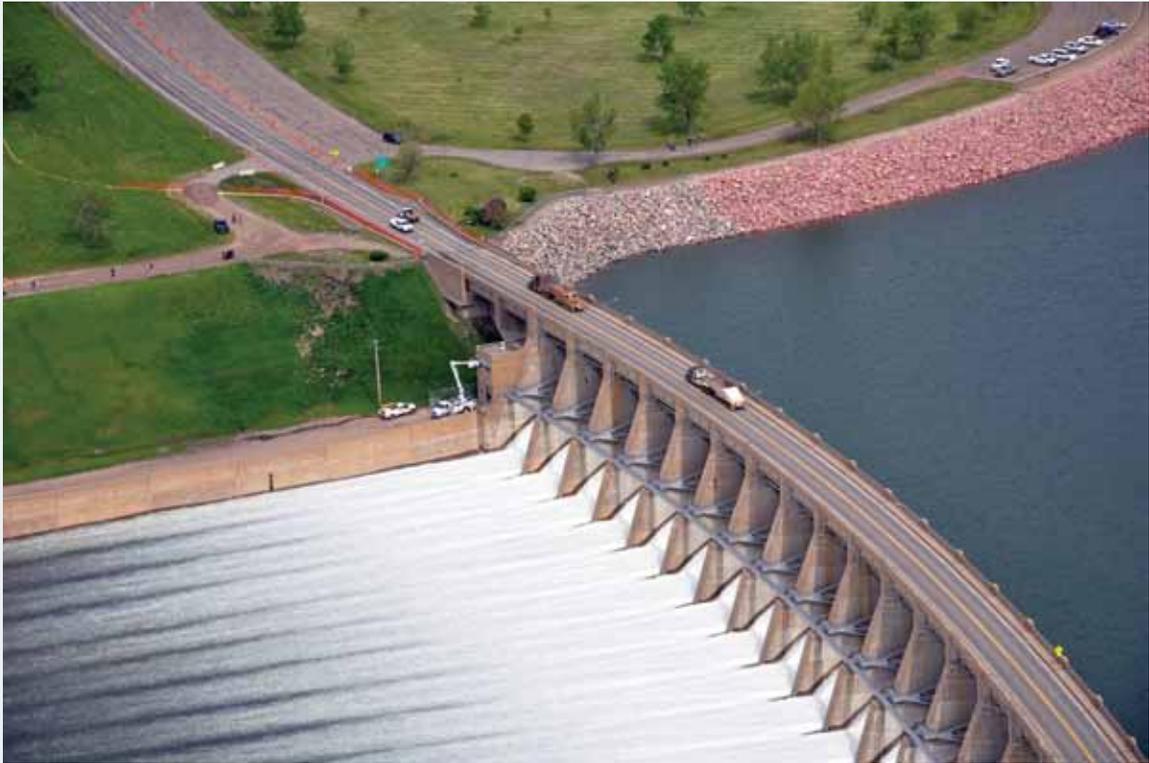
It takes more than a financial institution to protect something this precious. That's why we've committed \$50 million in charitable grants to a network of organizations that foster a culture of water stewardship— so that we all have access to fresh clean water, today and tomorrow.

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