



Sustainable Water Supplies: Reuse, Conservation, and Desalination

SUPPORT streamlining of federal programs and increased federal funding for research, development, and implementation of innovative and sustainable methods of enhancing water supplies, including reuse, conservation and desalination.

SUPPORT additional funding and broadening of the Bureau of Reclamation's Title XVI Program and agricultural water conservation projects.

SUPPORT additional funding for the Environmental Protection Agency's Research Grant Program, State Revolving Funds program, and the Alliance for Water Efficiency.

SUPPORT the **SECURE Water Act (S.2156)** as a model innovative and comprehensive approach to sustainable water management.

SUPPORT capital funding for developing new drought-proof water supplies through seawater, brackish groundwater, and brackish surface water desalination, including research on desalination technologies.

SUMMARY

Reuse. Water reuse is one of the most significant water management strategies being adopted to meet water needs in Texas and support economic development. The U.S. Bureau of Reclamation's Title XVI program provides limited but important federal participation in reuse projects. For the most part, these projects have been located in the western states, primarily in California. The program is severely underfunded and suffers from significant project backlogs. Title XVI should be expanded and reformed to expedite and improve efficiency. The TWCA supports the efforts by Congress, particularly the Senate Energy and Natural Resources Committee, and the Bureau of Reclamation to streamline and, where necessary, reform Title XVI.

Conservation. Increased funding of EPA's Alliance for Water Efficiency, Water Sense Program and State Revolving Funds is needed to accelerate efforts to reduce water demand as a resource management strategy. The BOR special project funding for agricultural water conservation efforts is needed to free up water to help meet future demands in the state. In addition, the Texas Agriculture Water Conservation Demonstration Initiative of the Farm Security and Rural Investment Act of 2007 provides the Texas Water development Board with funds to give farmers and ranchers the tools to reach peak efficiencies in on-farm water conservation. Similarly,

continued support is needed for the USDA's Environmental Quality Incentives Program, which provides incentives for water quality and water conservation projects.

Desalination. The Texas Water Plan identifies desalination projects that would create over 300,000 acre-feet per year of new water supply by 2060. Reaching this goal efficiently requires continued funding for developing new drought-proof water supplies through brackish and seawater desalination, including federal funding for research for brackish and seawater desalination technologies. Texas rural populations, particularly in western areas of the state, require technology to utilize brackish groundwater as an alternative water supply source. Large quantities of brackish groundwater and inland surface water are potentially available with the development of innovative and cost-effective treatment and disposal methods.

BACKGROUND

Reuse. Water reuse is an important water management strategy to help meet the growing demands on available water supplies in Texas and across the nation. Water reuse is becoming increasingly accepted for a wide variety of direct applications, including landscape and agricultural irrigation, toilet and urinal flushing, industrial processing, power plant cooling, wetland habitat creation, restoration and

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maintenance, and groundwater recharge. Additionally, augmenting potable water supplies through indirect applications of reclaimed water (i.e., blending it with raw water in a reservoir or other water body) is playing an important role in meeting water supply demands in Texas. The severe drought conditions that regularly affect Texas strongly support the need and value of water reuse.

Reuse strategies are proposed in the 2007 Texas Water Plan to provide 15 percent of the new water supplies required to meet the demands of a growing Texas population through the year 2060. During the last six years, about 30 applications have been submitted to the Texas Commission on Environmental Quality to reuse water in indirect applications. The quantity of reclaimed water associated with these permit applications totals approximately 700,000 acre-feet/year; this represents a substantial increase from the 2002 Plan as water suppliers seek to conserve and better use existing supplies and minimize dependence on new reservoirs.

Numerous major reuse water projects have been implemented or are planned for Dallas, Fort Worth, Houston, San Antonio, Austin, Odessa, Lubbock, Amarillo, and others. Major water suppliers also are actively involved in reuse projects, including Tarrant Regional Water District, North Texas Municipal Water District, Trinity River Authority of Texas, Colorado River Municipal Water District, Brazos River Authority, and Lower Colorado River Authority.

Major considerations that must be addressed to successfully maximize the use of reuse water include performing research needed to develop sound science and technology, providing funding support for implementation of the projects, and gaining public support. To address these considerations, federal funding is needed to support the further development of reuse water as a key water management strategy. Possible avenues for providing the federal funding include the Title XVI Program, EPA Research Grant Program, and State Revolving Funds. Much of this research funding can be augmented by funding from other sources resulting in a better benefit for the funds allocated. Addressing these considerations would not only benefit Texas and result in additional funds being made available, but would provide a benefit for implementing reuse water across the U.S. Efforts by Senators Johnson, Murkowski, and Feinstein to review the effectiveness of the Title XVI program should be continued during the 110th Congress.

Conservation. Efficient water use is growing in importance in the U.S.; this is especially true for Texas where over 2 million acre-feet per year of water is forecast to be saved through conservation measures in 2060. Water conservation is an economical way to stretch existing supplies to meet the needs of a rapidly growing population, agriculture and the environment. Recent federal initiatives, such as the Alliance for Water Efficiency and Water Sense labeling program, are needed to increase support for water conservation efforts for municipal and industrial users. Additionally, federal mechanisms to encourage and support agricultural water use efficiency can assist farmers in maintaining food supplies while potentially contributing to other federal objectives, such as water quality protection.

Along the border, where limited water supplies are shared with Mexico, irrigation efficiency is critical. Individuals, businesses, local entities and the state are investing in water conservation throughout Texas; federal assistance is needed to accelerate these efforts.

Desalination. Desalination technology has been proven both reliable and cost-effective. Initial capital costs as well as ongoing power and energy costs present a potential impediment for implementing desalination projects in Texas.

Among the many water sources that Texans will rely upon in the future for human consumption, seawater has the unique potential to provide an uninterrupted and limitless supply during drought. Desalination along the Gulf Coast, where critical seaports and industrial complexes are located, will support economic growth in these areas and will create opportunities for the sale or lease of downstream water rights in the state's rivers upstream to alternative locations, benefiting inland cities and water users. Also desalination of brackish groundwater and inland surface water is very important for meeting Texas' water needs.

By the end of fiscal year 2007, Texas will have invested more than \$4 million on planning and preliminary engineering for developing large-scale seawater desalination facilities at three potential sites along the Gulf Coast. An infusion of financial assistance to defray a portion of the estimated \$500 million capital cost for the projected facilities, would allow for design and construction efforts to begin in 2008.

