4

Financing needs

Quick facts

Of the $63 billion in capital costs required to implement the state water plan over the next 50 years, approximately $36.2 billion, or 57 percent, was reported as requiring state financial assistance.

The TWDB administers a variety of financial assistance programs that offer multiple financing options to aid in the planning, permitting, and construction of state water plan projects.

The State Water Implementation Fund for Texas (SWIFT) program was created in 2013 specifically to fund state water plan projects.

The reported state financial assistance need in the 2017 State Water Plan for municipal water management strategies is approximately $8.1 billion greater than the 2012 State Water Plan.

During the regional water planning process, regional water planning groups estimated the costs of water management strategies such as conservation, groundwater development, and new reservoirs that, in the event of a recurrence of a drought of record, would need to be implemented to meet the needs of their regions for the next 50 years. Implementation of many of these strategies will require financing to support water project phases such as planning, design, permitting, and construction.

The TWDB offers a variety of cost-effective financial support programs that fund state water plan projects as well as other water-related infrastructure and water quality improvement projects.

4.1 Costs of implementing the state water plan

The total capital costs of the recommended water management strategies in this plan is estimated at $63 billion, with projects anticipated to be completed at various times throughout the next 50 years (Figure 4.1). The recommended water management strategy projects include costs for developing additional sources of water, conveying water from the source to water users, treating additional volumes of delivered water supplies, and saving water through conservation and other demand management strategies. All strategies and projects also identify the decade in which they are projected to be online.

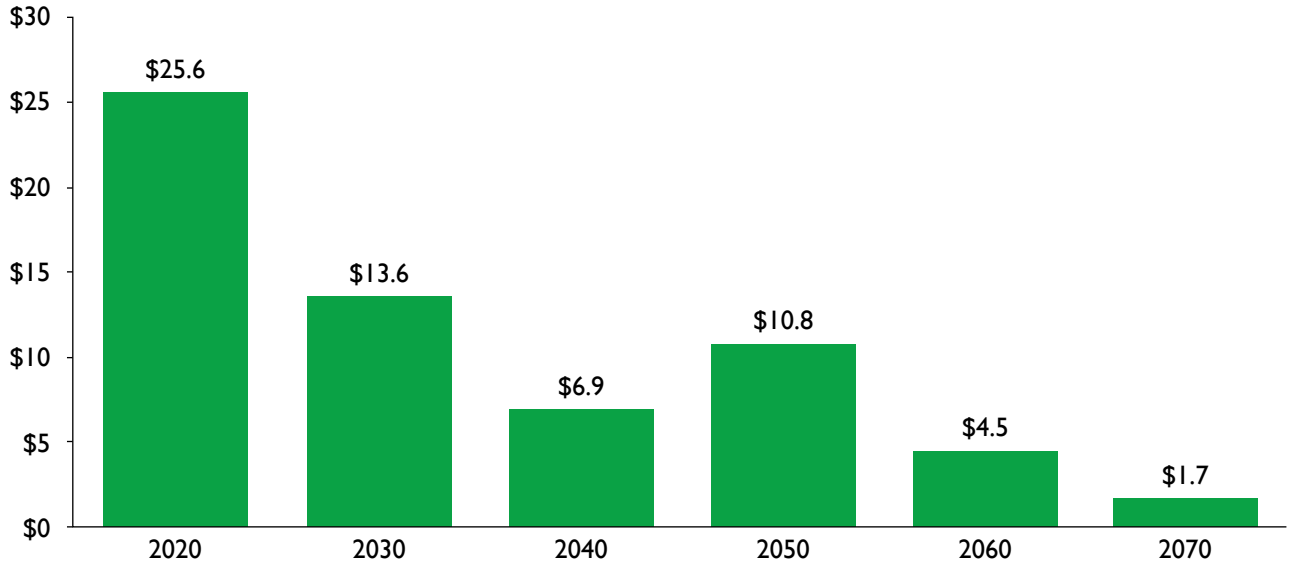
Planning groups estimated both the total capital costs of projects and the annual unit costs of water. Direct and indirect capital costs include, but are not limited to,

- engineering and feasibility studies, including those for permitting and mitigation;
- construction;
- professional services related to legal assistance and financing costs;
- land and easement acquisition; and
- purchases of water rights.

Unit costs of water supply (dollars per acre-foot supplied in each future year) are calculated based on total annual costs divided by the associated water volume and include debt service associated with the capital costs as well as operation and maintenance costs. Operation and maintenance costs, including power costs, are based on the quantity of water supplied and include all related expenses.

The estimated costs to implement the recommended water management strategies in the 16 regional water plans do not include the additional costs associated with maintaining or expanding retail water system distribution facilities or the costs of replacing aging infrastructure, with the specific exception of some conservation strategies that reduce water loss through replacement of internal distribution system lines.

Figure 4.1 - Total capital costs, by required online decade, of all recommended water management strategy projects (in billions)*



** Statewide total in this graph is slightly more than the $63 billion estimated costs due to rounding.*

The majority ($59.5 billion) of the $63 billion in anticipated capital costs is associated with recommended water management strategy projects sponsored by municipal water user groups and wholesale water providers (Figure 4.2). Region C ($23.6 billion), Region H ($10.9 billion), and Region L ($8.1 billion) have the highest estimated capital costs required to implement the strategy projects in their 2016 regional water plans (see Table 8.2). The costs associated with these three planning areas account for approximately 68 percent of the total capital costs in the 2017 State Water Plan. These regions represent approximately 61 percent of the state's projected population in 2070 (Table 5.1) and approximately two-thirds of the total projected municipal water needs for the state by 2070 (Appendix C.1).

4.2 Funding assistance required to implement the state water plan

Once the planning groups have recommended water management strategies, they administer a survey to estimate the amount of state financial assistance that local and regional water providers will require to implement the projects associated with those strategies. The planning groups' surveys attempt to collect funding needs information for any project that may qualify for any state funding programs.

As of January 2016, water providers reported an anticipated need of $36.2 billion from state financial assistance programs. Of this, $6.7 billion, or approximately 19 percent, was associated with planning, design, permitting, and acquisition activities, with the remaining $29.5 billion, or approximately 81 percent, associated directly with construction activities (Figure 4.3).

Of the total required state financial assistance

- approximately $21.3 billion is expected to be required prior to 2030,
- approximately $35 billion is required to assist in implementing recommended strategies that would be sponsored by municipal water providers or wholesale water providers, and
- approximately $3.2 billion is required by sponsors seeking state assistance through state ownership of excess capacity of their larger projects.

4.3 Financing the state water plan and other water-related projects

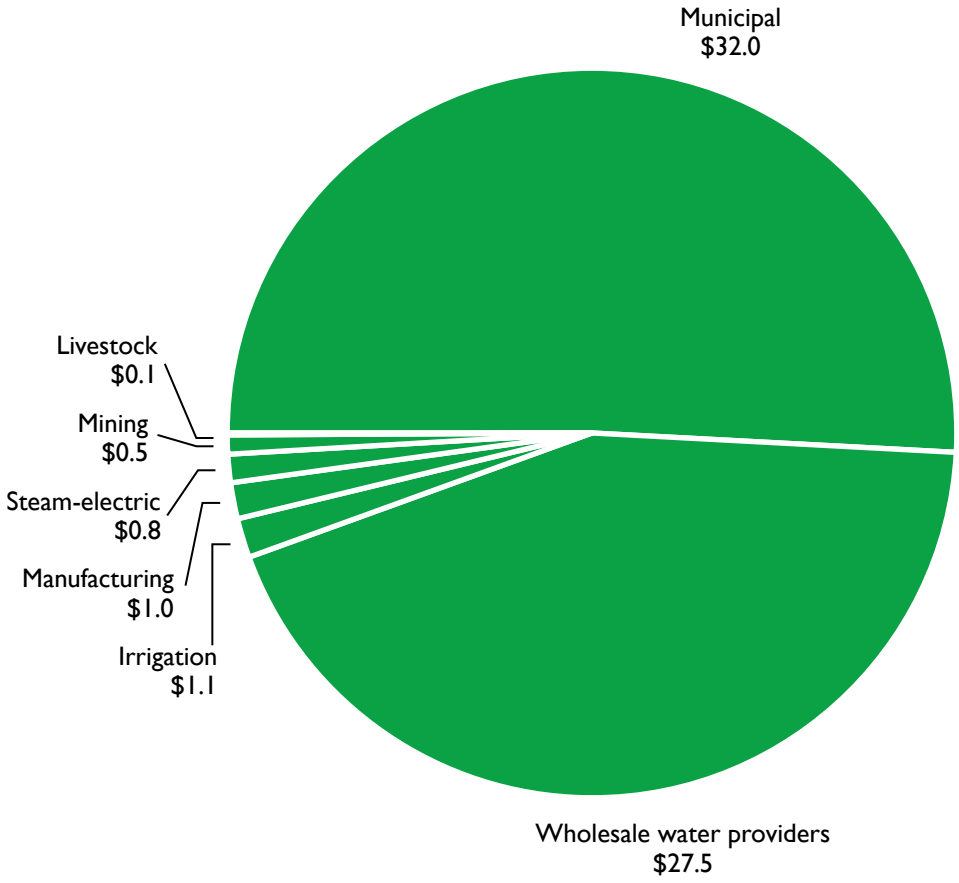
In Texas, local governments have traditionally provided the majority of the financing for water-related infrastructure projects. Water providers finance projects primarily through municipal debt on the open bond market and less frequently with cash or private equity sources such as banks.

The federal government has also historically implemented water projects, and earlier state water plans relied heavily on the federal government for financial assistance. Federal agencies such as the U.S. Natural Resources Conservation Service (formerly the Soil Conservation Service), the U.S. Bureau of Reclamation, and the U.S. Army Corps of Engineers constructed a number of surface water reservoirs in Texas. These reservoirs were built for the primary purpose of flood control but also provide a large portion of the state's current water supply.

However, the pace of federal spending on reservoir construction has declined considerably since the 1950s and 1960s, when most of the major federal reservoirs in the state were constructed. Federal policy has recognized a declining federal interest in the long-term management of water supplies and assigns the financial burden of developing water supplies to local users (USACE, 1999).

While traditional funding mechanisms will continue to assist with the financing of water projects, additional means are necessary to meet Texas' water needs. Due to the high costs of infrastructure projects, many water providers seek financial assistance from the state or federal government, which may provide attractive financing and additional subsidies to offset financial impacts.

Figure 4.2 - Total capital costs of all recommended water management strategy projects by wholesale water providers and water user group sponsor type (in billions)



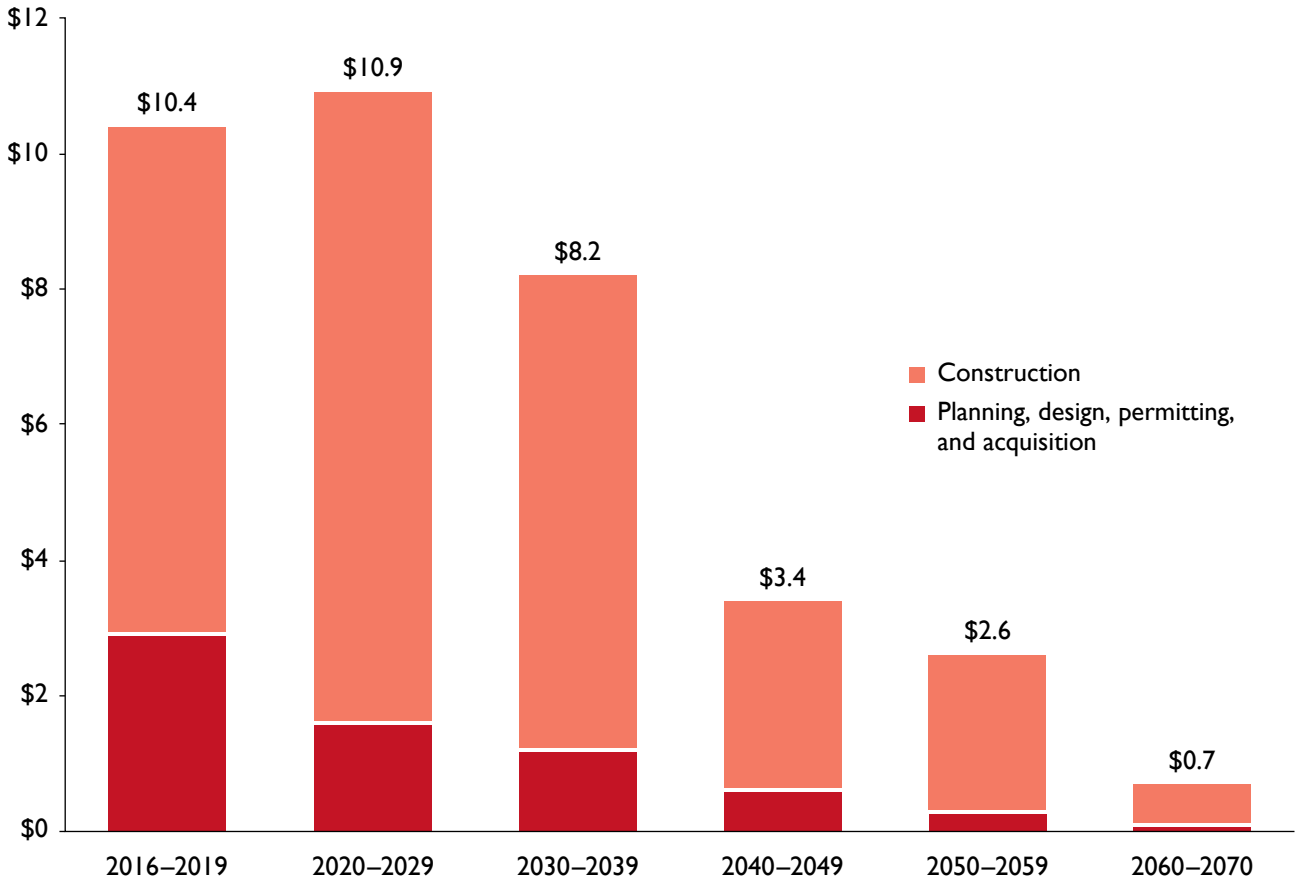
4.3.1 TWDB financial assistance

The TWDB provides financial assistance for implementation of water-related projects through several state and federally funded programs. These programs provide financing through loans and/or grants for projects that range from addressing the immediate needs of a community in meeting regulatory requirements to providing long-term water supply solutions. Not all TWDB financial assistance programs are specific to state water plan projects. However, in accordance with state statute, the TWDB can provide financial assistance for water supply projects only if the needs to be addressed by the project will be addressed in a manner that is consistent with the regional water plans and the state water plan. Through its financial assistance programs, the TWDB has funded many water management strategies that were recommended in the regional water plans and state water plan.

The TWDB's state financial assistance programs—except for SWIFT, which uses revenue bonds—are funded primarily by the sale of general obligation bonds that are secured by the full faith and credit of the State of Texas. With the state's strong credit rating, the TWDB is able to offer lower interest rates than many water providers would be able to obtain through traditional financing means. The TWDB issues bonds and utilizes the proceeds to fund loans to cities, counties, and river authorities, as well as nonprofit water supply and wastewater service corporations. The recipients in turn repay the principal along with interest, which is then used by the TWDB to pay debt service on its general obligation bonds.

The TWDB's authority to issue general obligation bonds was first approved by the Texas Legislature and voters in 1957 through a constitutional amendment. It authorized the agency to issue $200 million in general obligation bonds for financial programs for the construction of dams, reservoirs, and other water storage projects. Since then, additional bond authority has been granted, the most

Figure 4.3 - Reported state financial assistance needs (in billions)



recent in 2011 with the passage of a constitutional amendment that allows the TWDB to have up to $6 billion in bonds outstanding.

Financing previously provided by the TWDB

Since the inception of its financial assistance programs through December 2015, the TWDB has closed on more than $16 billion in funding for water and wastewater projects. The TWDB closed on approximately $3.9 billion in state financial assistance from 2011 to 2015 for all types of water and wastewater projects, including state water plan projects.

4.3.2 SWIFT as a new path to prioritizing and funding the state water plan

One of the most important outcomes of the state water planning process is a detailed list of strategies and projects that are recommended to address communities' water needs and the associated costs of the projects. The next step for communities—implementing those strategies—has been difficult in the past because in many cases the strategies rely on water infrastructure projects that require funding that may be too expensive for sponsors.

After regional water planning was established in Texas, the legislature appropriated limited funding for state water plan projects. There was not, however, a consistent, dedicated source of funds, nor was there an adequate amount to address the sizable costs of all the projects in the state water plan. The 83rd Texas Legislature decided to change that. The Texas Legislature created the **State Water Implementation Fund for Texas (SWIFT)** and **State Water Implementation Revenue Fund for Texas (SWIRFT)** to provide affordable, ongoing state financial assistance for projects in the state water plan. Passed by the legislature and approved by Texas voters through a constitutional amendment, the SWIFT program assists communities in developing and optimizing water supply projects at cost-effective rates. The program provides low-interest loans, extended repayment terms, deferral of loan repayments, and incremental repurchase terms for projects with state ownership aspects. To be eligible for the SWIFT program, a project and its associated capital costs must be included in the state water plan.

The SWIFT program was designed to provide the approximately $27 billion in reported financial assistance needs for water supply projects identified in the 2012 State Water Plan. The program will help ensure that Texas communities have adequate supplies of water during drought for many decades to come.

The goals of the SWIFT program include providing 10 percent of the funds to support projects for rural political subdivisions or agricultural water conservation and 20 percent to support projects that are designed for water conservation or reuse.

In addition to providing financial assistance for state water plan projects, the legislation creating SWIFT made other significant changes. It reshaped the regional and state water planning process by

- requiring that planning groups prioritize their recommended projects using uniform standards that are developed by the Stakeholder Committee;
- requiring the TWDB to further prioritize project proposals that are brought to the TWDB by sponsors seeking SWIFT funding;
- incorporating built-in incentives for regionalizing and right-sizing water supply projects;
- incentivizing greater cooperation between more diverse and greater numbers of water users, including rural and urban entities, in developing larger water supply projects;
- encouraging greater pursuit of conservation strategies;
- increasing both interest and participation in the regional and state water planning processes; and,
- specifically emphasizing funding for rural Texans with water needs.

The SWIFT legislation included a number of oversight, reporting, and transparency requirements,

such as creation of a legislative advisory committee, requirements for a biennial report to the legislature, and regular reporting on the TWDB's website.

Project prioritization

The statutes enacted by the 83rd Legislature put in place a process for prioritizing recommended projects at both the regional and state level. At the regional level, the planning groups prioritize projects in their regional water plans using uniform standards developed by the Stakeholder Committee composed of chairs of the planning groups.

At the state level, the TWDB's administrative rules include a prioritization system for those projects applying for SWIFT funding. This system includes factors required by the SWIFT legislation and the associated weighting of criteria, such as how many people will be served by the project, whether the project will serve a diverse urban and rural population, and the ranking by the planning group. Other criteria include the local financial contribution, emergency needs for water, and the project's impact on conservation. The criteria were developed as part of an extensive and lengthy public process.

4.3.3 Other TWDB state-funded programs

The TWDB has other funding programs that, although not focused on state water plan funding, are capable of funding projects that are in the state water plan as well as projects such as replacement of facilities, which are not included in the state water plan. The funding programs include the following:

The **Texas Water Development Fund** is the oldest of the TWDB's programs. Created in 1957 with the passage of the agency's first constitutional amendment, the program provides loans for water supply and conservation, water quality enhancement, flood control, and municipal solid waste. The TWDB issues general obligation bonds to support the program.

The **State Participation Program** was created in 1962 to encourage regional water supply, wastewater, and flood control projects. The program is

Construction of a TWDB-funded ground storage tank, Amarillo, Texas

limited to funding the excess capacity of a regional project when the local sponsors are unable to assume debt for the optimally sized facility, thus allowing for the "right sizing" of projects to accommodate future growth. The TWDB assumes a temporary ownership interest, and the local sponsor repurchases the TWDB's interest in the project as the growth is realized and additional customers connect to the system. To support the program, the TWDB issues general obligation bonds.

The **Rural Water Assistance Fund**, created in 2001, provides small, rural water utilities with low-cost financing for water and wastewater planning, design, and construction projects. The fund also can assist small, rural systems with participation in regional projects that benefit from economies of scale, the development of groundwater sources, desalination, and the acquisition of surface water and groundwater rights. The program is funded with general obligation bonds.

The **Agricultural Water Conservation Program** was created in 1989 to encourage conservation in irrigation water use. The program provides low-interest loans to political subdivisions to fund conservation programs or projects. The TWDB may also provide grants to state agencies and political subdivisions for agricultural water conservation programs, including demonstration projects, technology transfers, and educational programs.

The program is funded by assets in the Agricultural Water Conservation Fund as well as general obligation bonds.

The **Economically Distressed Areas Program** provides grants and loans for water and wastewater services in economically distressed areas where services do not exist or existing systems do not meet minimum state standards. Created in 1989, the program is focused on delivering water and wastewater services to meet immediate health and safety concerns and stopping the proliferation of sub-standard water and wastewater services through the development and enforcement of minimum standards. The program is funded by general obligation bonds and general revenue appropriations.

The **Water Infrastructure Fund** was created in 2001 to provide financial incentives for the implementation of strategies recommended in the state water plan. Funding for the program was first received in 2008 through general obligation bonds and general appropriations from the legislature. The program has effectively been replaced by SWIFT, which is generally based on the Water Infrastructure Fund's program structure.

4.3.4 TWDB federally funded programs

In addition to its state-funded programs, the TWDB is the primary state agency through which two federal funding programs are administered.

The **Clean Water State Revolving Fund** program was created by the federal Clean Water Act amendments of 1987 to promote water quality and to help communities meet the goals of the Clean Water Act. The fund provides low-cost loans for wastewater projects and additional subsidies for disadvantaged communities and green infrastructure projects. Currently, all 50 states and Puerto Rico operate Clean Water State Revolving Fund programs.

The program is funded by annual capitalization grants from the U.S. Congress through the U.S. Environmental Protection Agency, a required 20 percent state funding match, loan repayments, and revenue bonds.

The **Drinking Water State Revolving Fund** was created by the Safe Drinking Water Act, as amended in 1996, to finance infrastructure improvements to the nation's drinking water systems. The program provides low-cost loans for drinking water projects and additional subsidies for disadvantaged communities, green infrastructure, and small and urgent need projects.

Like the Clean Water State Revolving Fund, this program is funded by annual capitalization grants made by the U.S. Congress through the U.S. Environmental Protection Agency, a required 20 percent state funding match, loan repayments, and revenue bonds.

References

USACE (U.S. Army Corps of Engineers), 1999, Water resources policies and authorities, Digest of Water Resource Policies and Authorities: U.S. Army Corps of Engineers Publication Number 1165-2-1, 381 p. www.publications.usace.army.mil/Portals/76/Publications/EngineerPamphlets/EP_1165-2-1.pdf.

Construction of a TWDB-funded water supply project on the Colorado River