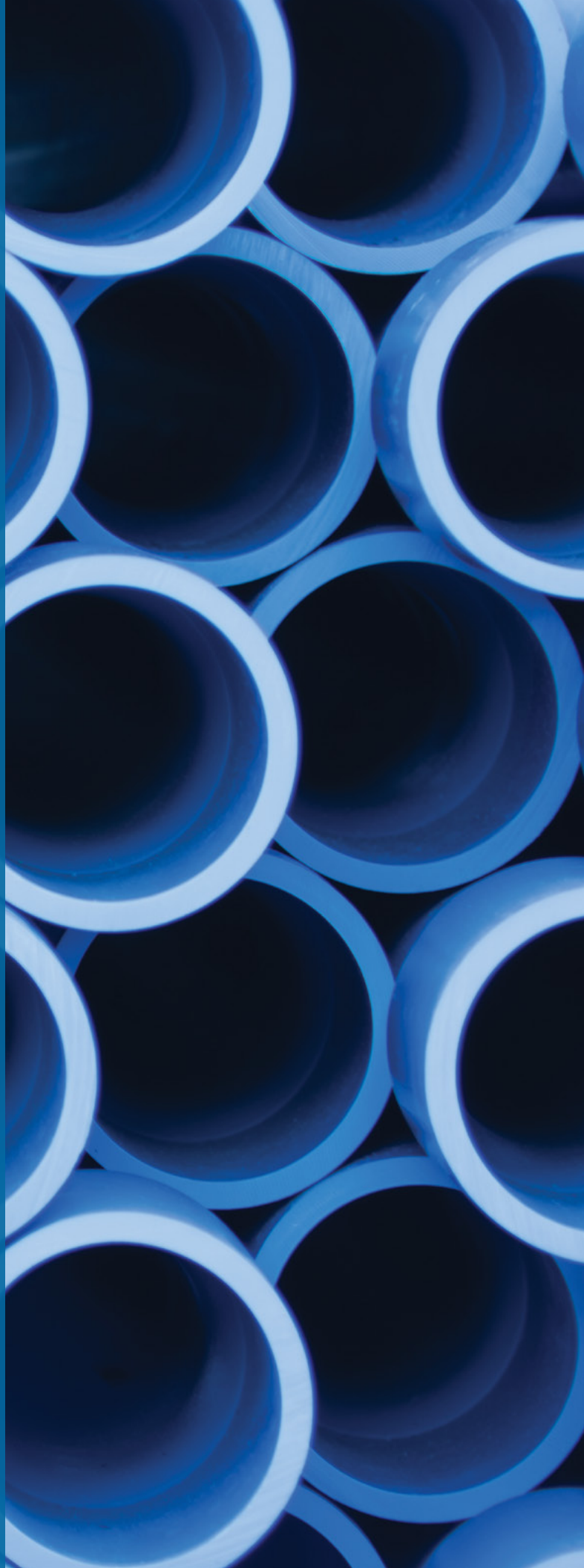
# 9

# Financing needs





# QUICK FACTS

Of the $80 billion in capital costs required to implement the state water plan over the next 50 years, approximately $47 billion, or 59 percent, was reported as requiring state financial assistance.

The reported state financial assistance need in the 2022 State Water Plan for municipal water management strategies is approximately $10 billion greater than the 2017 State Water Plan.

The State Water Implementation Fund for Texas (SWIFT) program, created specifically to fund state water plan projects, has already committed almost $8.2 billion toward projects in this state water plan.

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

The TWDB serves as a source of financial assistance for municipalities and rural areas across Texas. It administers loans and grants through several cost-effective state and federal programs to finance water supply development. These programs provide for the planning, design, and construction of water-related infrastructure and other water quality improvements. Through December 2020, the TWDB has committed more than $30.5 billion for water and wastewater projects in Texas via the agency's financial assistance programs.

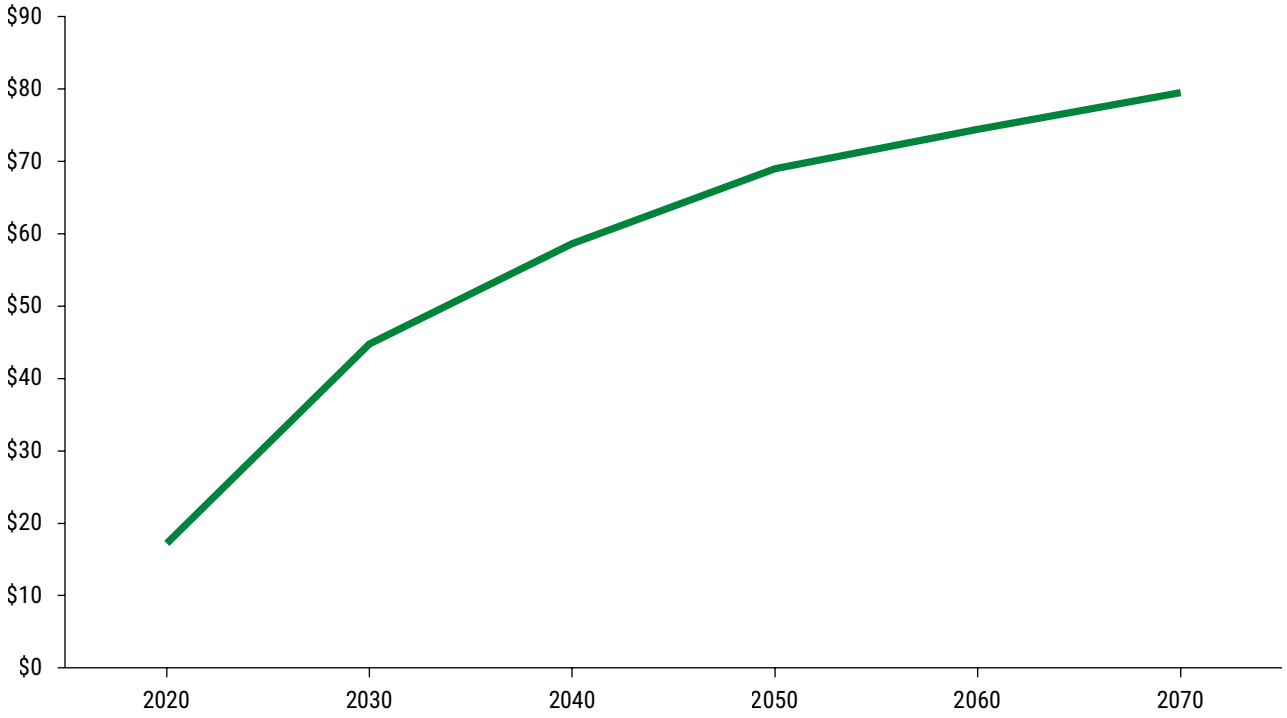
## 9.1 Costs of implementing the state water plan

The estimated total capital costs of the water management strategy projects recommended by the 16 regional water planning groups in this plan is $80 billion in 2018 dollars, without accounting for future inflation. The total capital costs of all recommended strategies increased by $17 billion, or more than 25 percent, from $63 billion in the previous plan to $80 billion due to many factors, but primarily due to increased costs of construction in general,[21] refinement of projects through the planning phases, increased engagement of water providers and communities in the regional planning process, and a more comprehensive effort by the regional water planning groups to incorporate more projects that will conserve water or increase treated water supply volumes.

The projects in this plan include conservation programs; groundwater development; treating water; and developing additional water sources, new reservoirs, aquifer storage and recovery systems, and desalination projects that would meet the drought needs of their regions during the next 50 years. Many of these projects vary in stages of implementation and are anticipated to be completed at various points in time throughout the next 50 years (Figure 9-1). All strategies and

[21] Over a five-year period between regional water planning cycles, the Engineering News Record Construction Cost Index increased by approximately 17 percent.

*Figure 9-1. Cumulative total capital costs of all recommended water management strategy projects by decade (in billions)*




projects identify the decade year by which they are projected to be online.

The planning groups estimated the total capital costs of projects and the annual unit costs for each water user group. Direct and indirect capital costs include, but are not limited to

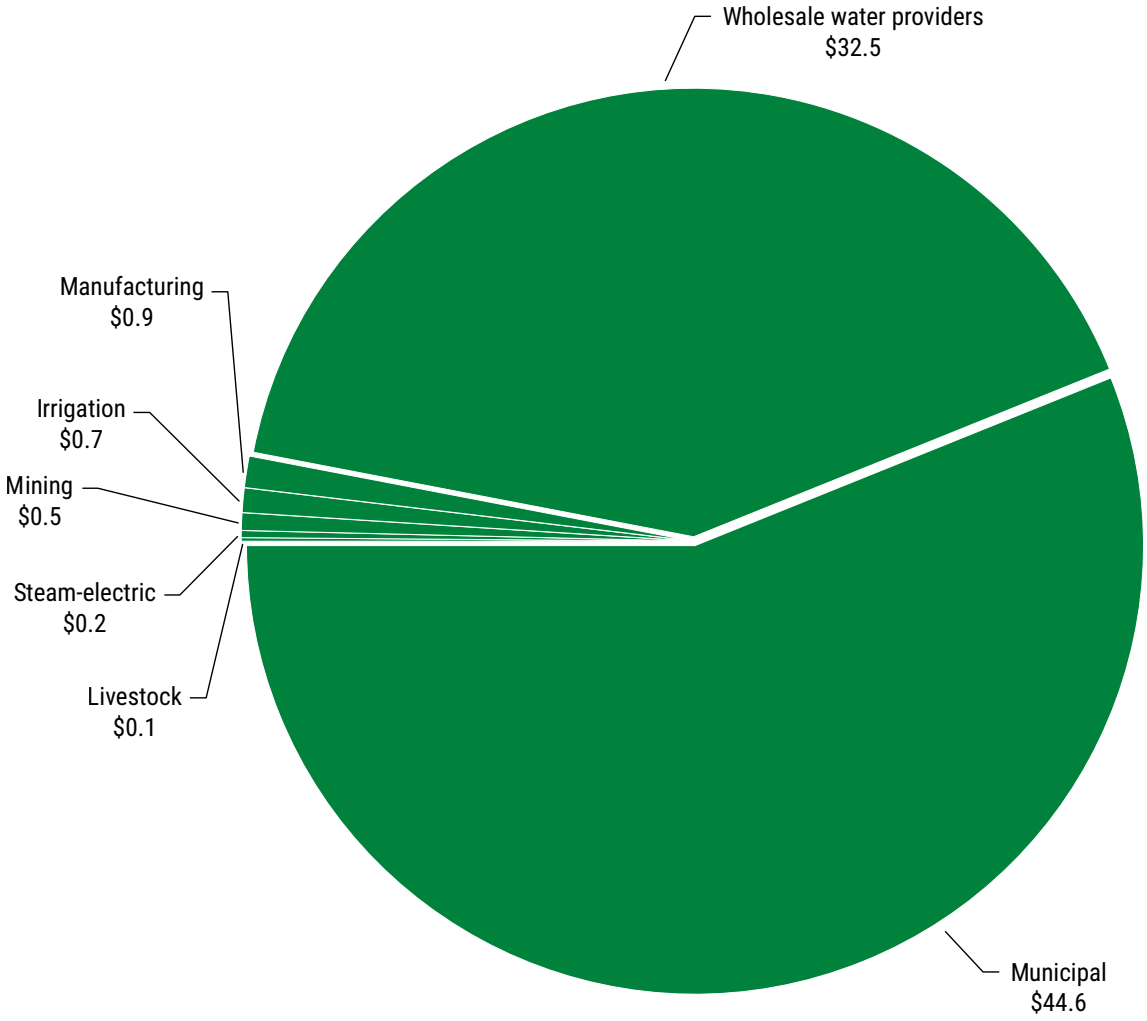
- engineering and feasibility studies, including those for permitting and mitigation;
- construction;
- professional services related to legal assistance and financing costs;
- land and easement acquisition; and
- purchases of water rights.

Unit costs of water supply (dollars per acre-foot supplied in each year) are calculated based on total annual costs divided by the associated water volume and include annual 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 above 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 conservation strategies that reduce water loss through replacement of internal distribution system lines. The TWDB has other financing options that are available to finance rehabilitation and replacement costs, which are summarized at the end of this chapter.

Approximately 97 percent ($77.1 billion) of the $80 billion in anticipated capital costs is associated with recommended water management strategy projects that are sponsored by municipal water user groups and wholesale water providers (Figure 9-2). Region C ($29.9 billion), Region H ($20.1 billion), and Region G ($5.5 billion) have the highest estimated capital costs required to implement the recommended strategy projects in their 2021

*Figure 9-2. Total capital costs of all recommended water management strategy projects by wholesale water providers and water user group sponsor type (in billions)*



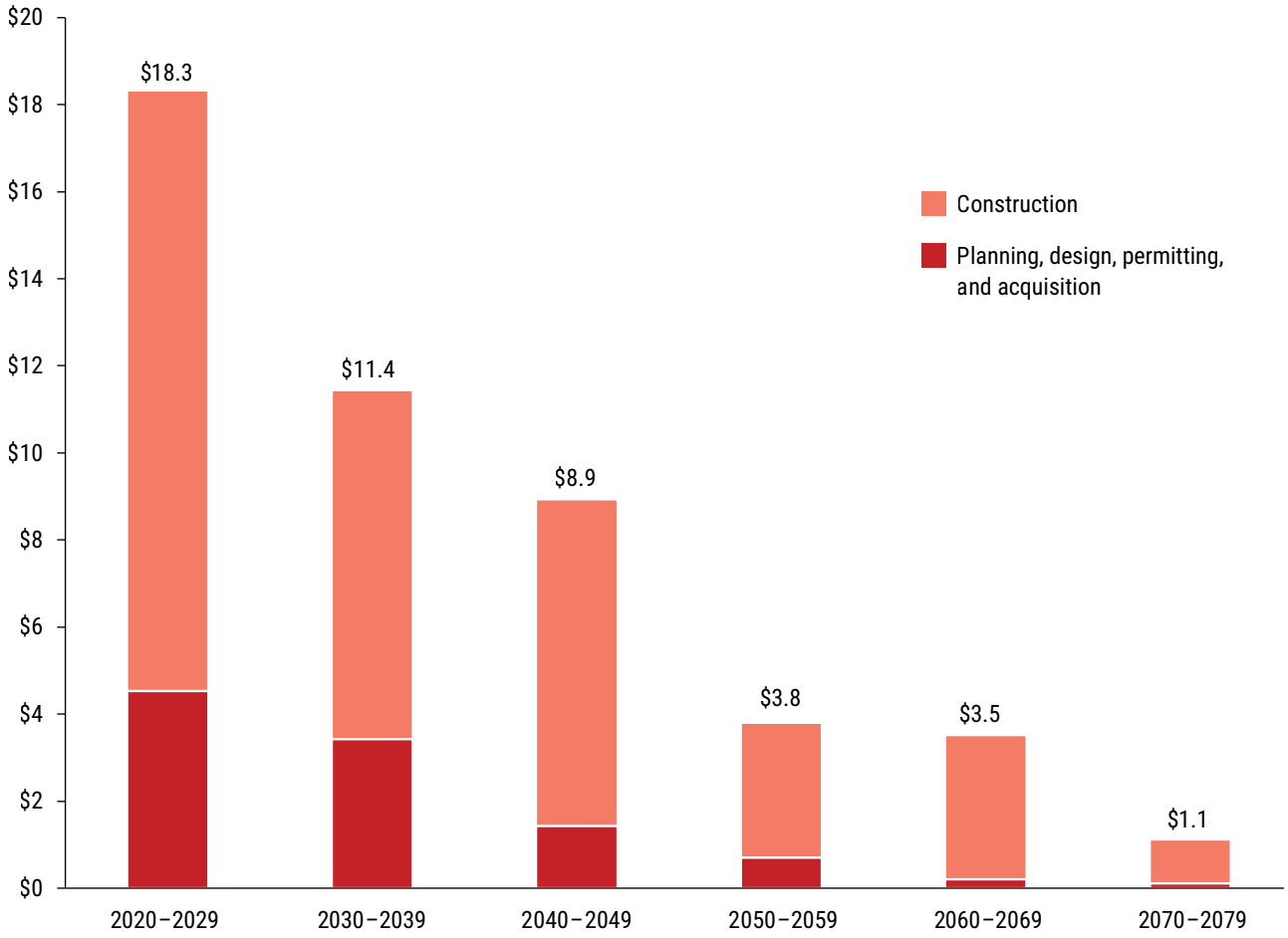

regional water plans (Table 7-2). The costs associated with these three planning areas account for approximately 70 percent of the total capital costs in the 2022 State Water Plan. These regions represent approximately 60 percent of the state's projected population in 2070 (Table 4-1) and more than two-thirds of the total projected municipal water needs for the state by 2070 (Table C-1).

## 9.2 Funding assistance required to implement the state water plan

The 16 regional water planning groups administer a survey toward the end of each planning cycle to estimate the amount of state financial assistance that local and regional water providers will require to implement the water management strategy projects. The surveys attempt to collect accurate funding needs for projects that may qualify for state funding programs. Survey responses were received for approximately 24 percent of the sponsors associated with recommended projects in the 2022 State Water Plan, capturing 59 percent of the recommended project costs.

As of November 2020, water providers reported an anticipated need of over $47 billion from state financial assistance programs. Of this, $10.4 billion, or approximately 22 percent, was associated with planning, design, permitting, and acquisition activities, with the remaining $36.7 billion, or approximately 78 percent, associated directly with construction activities (Figure 9-3).

*Figure 9-3. Reported state financial assistance needs by decade* (in billions)*




** State financial assistance may be needed prior to a project's online decade. Reported financial assistance needs for 2020–2029 include costs, including permitting and acquisition, for projects with online decades ranging from 2020 to 2070.*

Of the total required state financial assistance

- approximately $18.3 billion is expected to be required prior to 2030,
- approximately $46.6 billion is required to assist in implementing recommended strategies sponsored by municipal water providers or wholesale water providers, and
- approximately $3.9 billion is required by sponsors seeking state assistance through state ownership of excess capacity of their larger projects.

## 9.3 Financing the state water plan and other water-related projects

Recognizing the need for affordable financial assistance, the Texas Legislature entrusted the TWDB with a set of financing tools to help public utilities achieve their water infrastructure goals. Due to the high costs of water projects, many water providers seek financial assistance from the state or federal government, which may provide attractive financing and subsidies.

In Texas, political subdivisions have traditionally provided a majority of the financing for water-related infrastructure projects through municipal debt on the open bond market or, 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).

### 9.3.1 TWDB financial assistance

To accomplish the goals of planning for the state's water resources, the TWDB offers a variety of cost-effective loan and grant programs that provide for the development and implementation of water supply projects. Programs range from addressing the immediate needs of a community in meeting regulatory requirements to providing long-term water supply solutions. The TWDB administers multiple financial programs to provide financial assistance to political subdivisions. These programs include providing financial assistance through the issuance of general obligation and revenue bonds. General obligation bonds, secured by the full faith and credit of the State of Texas, may be issued for all components of water supply, wastewater conveyance and treatment, flood control projects, and water projects that involve conversion from a groundwater supply source to a surface water supply. Revenue bonds, which are secured by repayments from program participants, may be issued to facilitate the provision of wastewater treatment projects through the State Water Pollution Control (Clean Water) Revolving Fund and for the provision of facilities for the treatment of drinking water through the State Safe Drinking Water Revolving Fund, or for the purpose of implementing the state water plan through issuance under the State Water Implementation Revenue Fund for Texas (SWIRFT). With strong credit ratings, the TWDB can offer lower interest rates than many water providers would be able to obtain through traditional financing means.

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 constructing dams, reservoirs, and other water storage projects. Since 1957, the legislature and the voters of the state have approved several constitutional amendments increasing the issuance authority and authorized funding purposes.

### 9.3.2 State Water Implementation Fund for Texas

SWIFT was established by the Texas Legislature in 2013 to provide affordable, ongoing state financial assistance for recommended projects in the state water plan. The program helps communities develop cost-effective water supplies by providing low-interest loans, extended repayment terms, deferral of loan repayments, and incremental repurchase terms through the Board Participation program that includes financing terms similar to the State Participation program. Since inception, the SWIFT program has committed almost $9 billion to state water plan projects, of which almost $8.2 billion is toward projects included in this state water plan.

Before SWIFT was created, there were limited funding opportunities to finance the sizable costs of all the projects in the state water plan. The **Water Infrastructure Fund**, created by the legislature in 2007, was the predecessor program to SWIFT to provide financial incentives for the

implementation of strategies recommended in the state water plan. The program has effectively been replaced by SWIFT, which is generally based on the Water Infrastructure Fund's program structure.

Passed by the legislature and approved by Texas voters through a constitutional amendment, SWIFT—and its associated funding mechanism, SWIRFT (State Water Implementation Revenue Fund for Texas)—were enacted to develop and optimize water supply projects in the state water plan. Accordingly, to be eligible for SWIFT funding, a project and its associated capital costs must be included in the state water plan.

The legislature also put in place a process for prioritizing recommended projects at both the regional and state level. At the regional level, the 16 planning groups prioritize all recommended water management strategy projects in their regional water plans every five-year cycle using uniform standards developed by the stakeholder committee composed of the planning group chairs.

At the state level, the TWDB's administrative rules include a prioritization system for 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 project ranking by the planning group. Other criteria include the local financial contribution, emergency needs for water, and the project's impact on conservation. Typically, the TWDB solicits SWIFT abridged applications once a year, and the projects proposed in each application are prioritized using this system.

### 9.3.3 Other TWDB state-funded programs

In addition to SWIFT, the TWDB offers other financial assistance programs to fund projects included in or consistent with the state water plan. These low-interest-rate programs encourage municipalities to break ground on projects to ensure an adequate water supply for future generations.

The **Texas Water Development Fund** was created in 1957 with the passage of the agency's first constitutional amendment and is the oldest of the TWDB's programs. The program is a streamlined state loan program that provides financing for various types of infrastructure projects. This program enables the TWDB to fund projects with multiple purposes, like water and wastewater or flood control, in one loan.

The **State Participation Program** allows for the "right sizing" of projects in consideration of future water needs. The program encourages the optimum development of regional projects by funding excess capacity for future use. The TWDB assumes a temporary ownership interest, and the local sponsor repurchases the TWDB's interest as growth is realized and additional customers connect to the system. Projects can include reservoirs, well fields, water rights, wastewater, and flood control. The 86th Texas Legislature passed House Bill 1052 in 2019, which expanded the program's scope to encourage interregional water supply projects and the development of desalination and aquifer storage and recovery facilities.

The **Rural Water Assistance Fund** provides small, rural water utilities with low-cost, long-term financing for water and wastewater projects. The program is designed to offer tax-exempt equivalent financing to water supply corporations or projects ineligible for tax-exempt financing. Eligible applicants are rural political subdivisions and nonprofit water supply corporations serving a population of 10,000 or less, or counties in which no urban area has a population exceeding 50,000.

The **Agricultural Water Conservation Program** provides financial assistance in the form of loans and grants for agricultural water conservation projects in Texas. The program supports the implementation of strategies and practices

that improve agricultural irrigation water use efficiency. Some of the projects funded by the program include irrigation equipment upgrades, metering devices, and construction projects that improve infrastructure, equipment, and efficiency of irrigation delivery.

The **Economically Distressed Areas Program** provides financial assistance in the form of grants and loans for water and wastewater projects in economically distressed areas where service is unavailable or inadequate to meet state standards. Funded projects must be located in counties that are enforcing adopted Model Subdivision Rules. The 86th Texas Legislature passed Senate Bill 2452 making some changes to the program, including requiring a prioritization process for future funding cycles. Another change, which was approved by Texas voters in November 2019, allows the TWDB to issue bonds on a continuing basis not to exceed $200 million outstanding for water supply and wastewater services in economically distressed areas. As of January 2021, future funding requires additional legislative action.

The newly established **Flood Infrastructure Fund** became available in 2020 to provide grants and low-cost loans for drainage, flood mitigation, and flood control projects, some of which may have a water supply component. This fund was created during the 86th Texas Legislative Session through the passage of Senate Bill 7 and the accompanying $793 million contained in Senate Bill 500. Texas voters approved a supporting constitutional amendment on November 5, 2019, that directs the TWDB to administer a new statewide flood mitigation plan by 2024.

### 9.3.4 TWDB federally funded programs

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

The **Clean Water State Revolving Fund (CWSRF)** was authorized by the Clean Water Act to provide low-cost financial assistance for planning, acquisition, design, and construction of wastewater, reuse, and stormwater infrastructure. Recent streamlining of the program provides year-round funding as projects are included in the CWSRF Intended Use Plan. This funding addresses water quality needs by building on state partnerships with the U.S. Environmental Protection Agency. Currently, all 50 states and Puerto Rico operate CWSRF programs. The program is funded by annual capitalization grants from the U.S. Congress through the Environmental Protection Agency, a required 20 percent state funding match, loan repayments, and revenue bonds.

The **Drinking Water State Revolving Fund (DWSRF)** was authorized by the Safe Drinking Water Act to assist communities by providing low-cost financing for a wide range of water projects that facilitate compliance with drinking water standards. Below market interest rate loans are offered for planning, acquisition, design, and construction of water infrastructure projects, such as water treatment facilities, system upgrades, source water protection, and flood resiliency projects. Like the CWSRF, recent streamlining of the program provides year-round funding as projects are included in the DWSRF Intended Use Plan. The 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 Resources 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