



Introduction

Chapter I • Water for Texas
2017 State Water Plan
Texas Water Development Board

Quick facts

Texas' state water plans are based on future conditions that would exist in the event of a recurrence of the worst recorded drought in Texas' history—known as the “drought of record”— a time when, generally, water supplies are lowest and water demands are highest.

This is the first state water plan that reflects the results of legislative changes made in 2013 to the water planning and financing process.

Since 1997, water planning in Texas has been a regional, bottom-up process. Sixteen regional water plans are developed by regional water planning groups every five years and are the basis for the state water plan.

More than 450 planning group voting members participated in the development of the 2016 regional water plans.

Details from the regional and state water plans, including summaries by region, county, and water user group, can be explored through the interactive state water plan at texasstatewaterplan.org.

The 2017 State Water Plan is the first of the next generation of state water plans produced in accordance with sweeping legislative changes made by the 83rd Texas Legislature in 2013. The 83rd session marked the beginning of Texas' new approach to turning water plans into water supplies by creating the State Water Implementation Fund for Texas (SWIFT) program to fund projects in the state water plan. With assistance from the SWIFT program, Texas now has the means to help meet the state's water needs far into the future.

In addition to the changes made in conjunction with the SWIFT legislation, this state water plan also incorporates numerous other “firsts” that illustrate Texas' visionary, transparent, and science-based approach to planning and funding water projects.

Water planning is not new to Texas; we have been producing state water plans since 1961. This is our tenth plan and the fourth to be produced under

the regional water planning process established in 1997. Our experience and our commitment to water planning continue to keep Texas at the forefront of state water planning in the United States.

The evolution of the regional and state water planning process has led the TWDB to change how it collects planning information and how it delivers that information to the public. One of the most significant additions to the state water plan has been the launch of the TWDB's interactive state water plan website. The site relies on the data provided by the regional water planning groups and provides users easy access to the large amount of data on which the state water plan is based.

1.1 New in the 2017 State Water Plan

Recent droughts influenced this state water plan. Although the 1950s remain Texas' worst recorded drought, this fourth planning cycle coincided with the end of Texas' second-worst recorded drought in history—from 2010 to 2014. The importance of water planning was further punctuated by the 2011 drought, which was the worst single-year drought

in Texas' history. In response to these recent droughts, the TWDB revised the planning rules to require additional drought response information that is now included as a separate chapter in each regional water plan.

This state water plan incorporates several “firsts,” including

- the first state water plan to include a drought response chapter;
- the first state water planning cycle in which planning groups submitted a prioritized list of their recommended projects simultaneously with the submittal of their final adopted regional water plans;
- the first plan that includes information reported by planning groups on the implementation of water management strategies contained in the previous state water plan;
- the first state water plan that includes a significant share of capital costs that are directly associated with municipal water conservation strategies;
- the first planning cycle in which modeled available groundwater volumes are the primary basis for groundwater availability statewide;
- the first planning cycle in which environmental flow standards adopted by the Texas Commission on Environmental Quality have been incorporated into water management strategy evaluations;
- the first planning cycle in which planning groups were required to directly incorporate information from the TWDB's state water planning database into their regional water plans;
- the first time that a state water plan incorporates, by adoption, an online, interactive state water plan as an integral component of the plan. The interactive state water plan website increases transparency and provides detailed planning information accessible to the public through customized views of planning data at the local, regional, or statewide level; and,
- the earliest adoption, within a five-year planning cycle, of a state water plan since 1997,

well ahead of the statutory deadline of January 5, 2017, to facilitate funding projects through SWIFT. The accelerated timeline saves planning groups the time and expense of amending previous regional water plans and the 2012 State Water Plan in order to qualify new projects for SWIFT funding.

1.2 Regional water planning

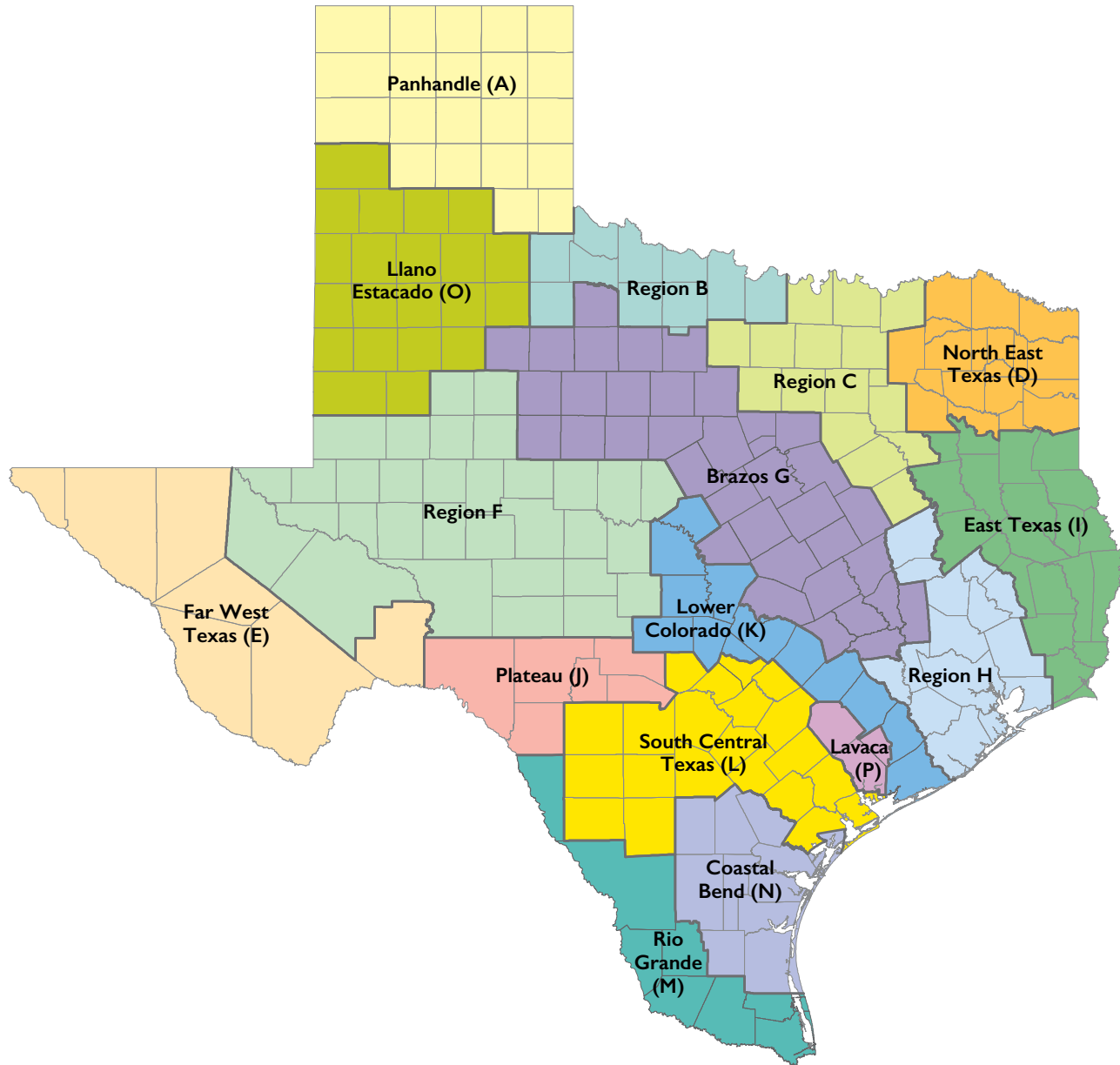
The foundation of the state water plan is the regional water planning process. Every five years planning groups involve local and regional stakeholders to develop regional plans for how to meet water needs during drought. Based on those regional water plans, the TWDB then develops a comprehensive state water plan every five years.

1.2.1 Legislative requirements

One of the most important requirements of the 1997 legislation creating the regional water planning process was that the TWDB could only provide financial assistance for water supply projects if the needs to be addressed by the project were consistent with the relevant regional water plan and the state water plan. This same consistency provision also applied to the granting of surface water right permits by the Texas Commission on Environmental Quality and thereby serves as a significant incentive for water providers and other stakeholders alike to actively participate in the planning process. Additionally, to be eligible for financial assistance from the recently created SWIFT, a project and its associated capital costs must be included in the state water plan.

Following the 1997 legislation, the TWDB introduced administrative rules to guide the new regional water planning process. The TWDB designated 16 regional water planning areas (A through P) (Figure 1.1), taking into consideration river basin and aquifer delineations, water utility development patterns, socioeconomic characteristics, existing planning areas, state political subdivision boundaries, public comments, and other factors. The TWDB is required to review and update the planning area boundaries at least once every five years, and no changes have been made to date.

Figure 1.1 - Regional water planning areas



1.2.2 Regional water planning groups

Each of the 16 regional water planning areas has its own planning group. Every five years, the planning groups are responsible for developing regional water plans that are funded primarily through legislative appropriations, administered by the TWDB, and guided by statute, rules, contracts, members of the planning groups, and the general public. In accordance with the Texas Open Meetings Act, all planning groups conduct their business in meetings that are open to the public and that give the public advance notice of the time, date, location, and subject matter of the meetings.

Each planning group is required to maintain at least one representative of each of the following 12 interests:

1. The general public
2. Counties
3. Municipalities
4. Industry
5. Agriculture
6. Environment
7. Small business

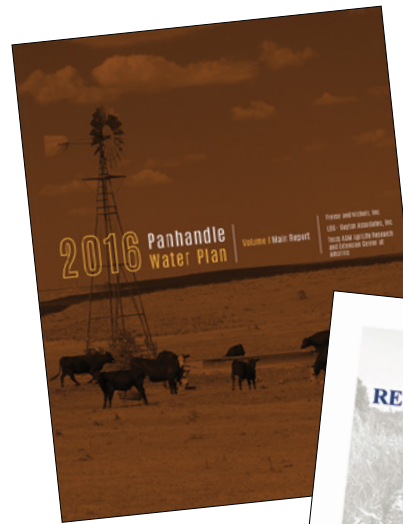
8. Electric-generating utilities
9. River authorities
10. Water districts
11. Water utilities
12. Groundwater management areas that fall within the planning area (where applicable)

Planning groups must have at least one voting representative from each required interest and may designate representatives for additional interests that are important to the planning area. Currently, each planning group has more than the minimum 12 voting members, with the largest having 30 voting members. More than 450 voting members participated in the development of the 2016 regional water plans (see plan acknowledgments). Planning group members serve in a volunteer capacity and are not compensated by the planning groups for their time.

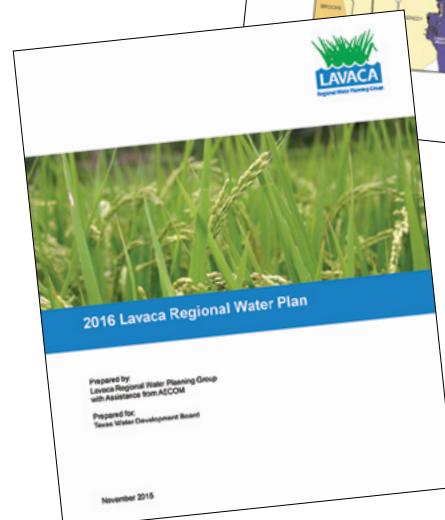
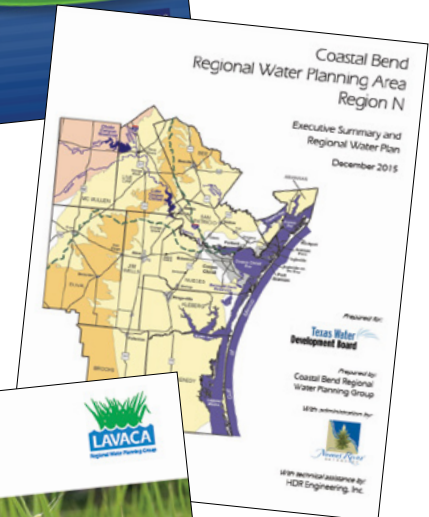
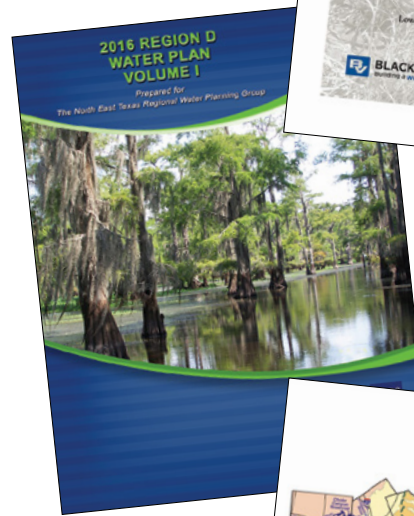
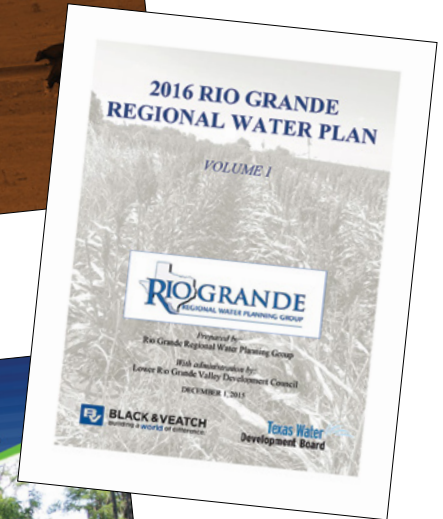
Planning groups also include non-voting members from the TWDB, the Texas Department of Agriculture, the Texas Commission on Environmental Quality, and the Texas Parks and Wildlife Department, as well as liaisons from adjacent planning groups.

A regional water plan must meet all statutory, administrative rule, and contract requirements. In the course of each five-year planning cycle, each planning group must

- maintain its membership and governing bylaws;
- designate a political subdivision of the state, such as a river authority or council of governments, to serve as its administrator for the purpose of arranging meetings, managing grant-funded contracts, and providing public notices (the political subdivision provides staff resources, at the region's expense, to perform these administrative services);
- apply to the TWDB for regional water planning grant funding through their political subdivision;
- select a technical consultant(s) to serve at the direction of the planning group and to collect information, perform analyses, and prepare the regional water plan document;



Selection of the regional water plans, www.twdb.texas.gov/waterplanning/rwp/plans/2016



- direct the development of its water plan, including making decisions about which water management strategies will be recommended;
- solicit and consider public input, conduct open meetings, and, together with its political subdivision, provide required public notices, including for public hearings on the initially prepared (draft) regional water plan;
- submit its initially prepared plan and standardized data to the TWDB for review; and
- adopt a final regional water plan and submit it to the TWDB for approval.

To facilitate the development of the regional water plans, each planning group is supported by a TWDB project manager. The project manager serves as a non-voting planning group member, attends every planning group meeting, and manages the associated grant contract. The project managers also provide technical and administrative assistance during planning group meetings and throughout the development of the regional water plans to help ensure the planning groups meet their deadlines and all planning requirements.

1.2.3 Development of the regional water plan

Regional water planning is based on several fundamental parameters that guide the entire process, including

- planning for drought of record conditions when, generally, water supplies are lowest and water demands are highest;
- conducting evaluations of future water demands, existing supplies, potential shortages and feasible water management strategies for all wholesale water providers and for approximately 2,600 water user groups in six categories (municipal, manufacturing, steam-electric, mining, irrigation, and livestock); and
- reporting the associated data (by decade and broken down geographically) over a 50-year planning period (in this case from 2020–2070) by water user group, county, river basin, and regional water planning area.

Planning groups must also separately submit a prioritization of all the recommended water management strategy projects for funding consideration

from the SWIFT program. The prioritization is based on the uniform standards approved by the TWDB. These standards, required in statute, were developed by the chairs of the planning groups through a stakeholder committee process facilitated by the TWDB.

The 16 plans are the product of hundreds of meetings; the effort and many hours of hard work of the planning groups, consultants, and stakeholders; and the large amount of information that the planning groups develop along the way. Each regional plan presents information in 11 chapters with much of the information also entered directly into the TWDB's state water planning database.

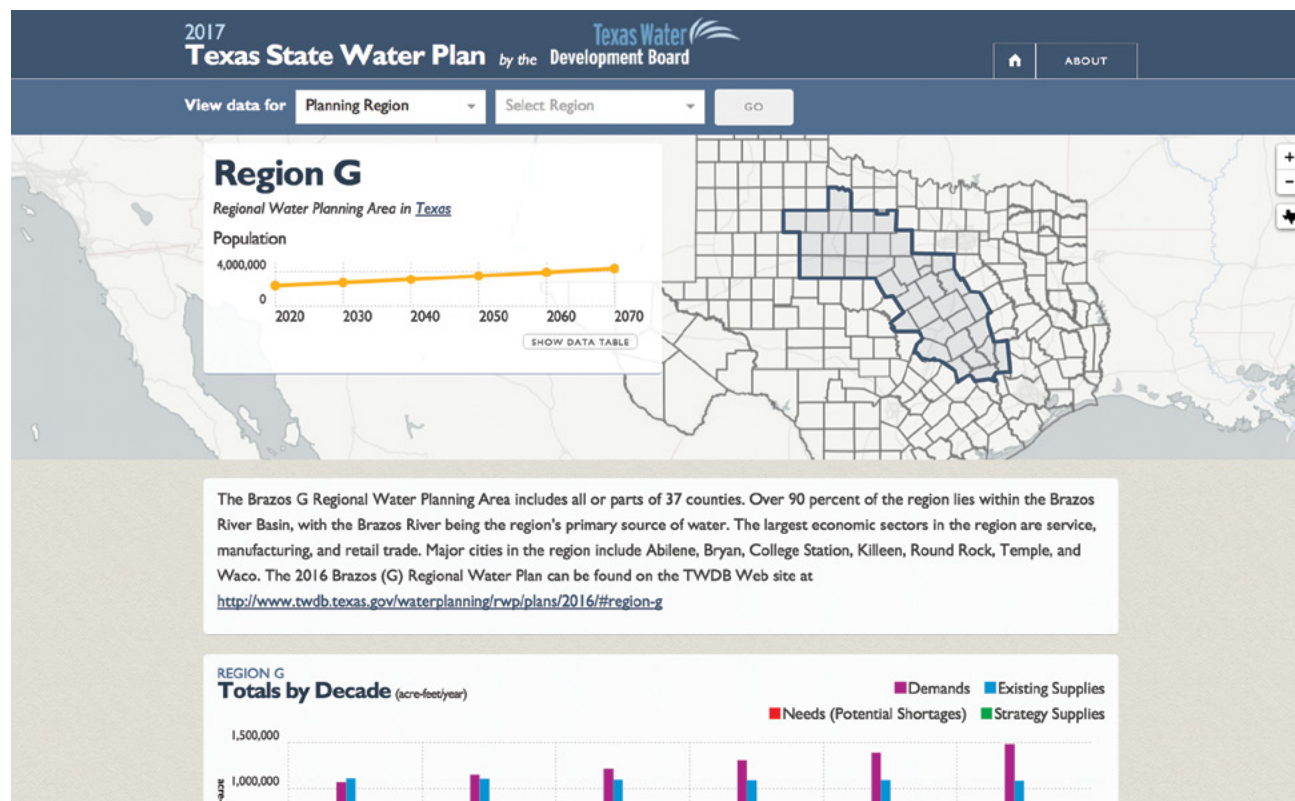
1.2.4 Development of the state water plan

After planning groups adopt their regional water plans, they are submitted to the TWDB for approval. As required by statute, the TWDB develops the state water plan based on those plans. The state water plan compiles key information from the regional water plans and also serves as a guide to state water policy. It explains planning methodology, presents data for the state as a whole, identifies statewide trends, and provides recommendations to the Texas Legislature. Prior to adopting the final state water plan, the TWDB releases a draft for public comment, publishes in the Texas Register its intent to adopt the state water plan, notifies the planning groups, and holds, at a minimum, one public hearing.

1.3 An interactive state water plan

The 2017 State Water Plan contains and makes available more in-depth information about water planning than ever before. While previous state water plans have been limited by the amount of information that would fit in a single published document, this state water plan provides information through both the actual state water plan publication and an interactive state water plan website (texasstatewaterplan.org). The publication and website together make up the state water plan approved and adopted by the TWDB. The interactive state water plan makes it easy to find

Figure 1.2 - View of interactive state water plan site



specific information on a community's potential water shortages and strategies recommended to address them. Additionally, the interactive website increases transparency, promotes awareness about water issues to the general public, and makes this critical information more accessible to a new generation of water users.

The interactive state water plan allows the public to explore the planning information in ways that cannot be accomplished through a static document. Data are presented simultaneously in different dimensions, at varying geographic levels, and through maps, tables, and additional graphics. Users can customize what they see, for example, by selecting data associated with a specific water use category or from a specific planning decade (Figure 1.2).

This new approach to the delivery of water planning data to the public provides an up-close view of local information or a big-picture view of the entire state. Once fully developed, the site will allow users to view, geographically, water sources that a particular water user group relies on today

for its existing water supplies and find out what recommended strategies and water sources it will depend on in the future.

The interactive state water plan is facilitated by the state water planning database, which is populated through the internet directly by the planning groups. Planning groups rely on this dataset to produce portions of their regional water plans, including calculating water needs for each water user group. Some of the planning data, such as water demand projections and modeled available groundwater volumes, are developed and entered directly by the TWDB.

Through the interactive state water plan, information can be viewed in numerous ways:

- **Different geographic levels**—community, county, region, or state
- **Different types of planning information**—projected water demands, existing water supplies, water needs (potential shortages), and recommended water management strategies

- **Water use categories**—municipal, manufacturing, mining, steam-electric, irrigation, or livestock
- **Specific planning decades**—in multiple decades spanning the 50-year planning cycle (currently 2020–2070)

The interactive state water plan is also viewable on most mobile devices, and the website can also be embedded in other websites. All data can be downloaded into a spreadsheet for further use.

Overall, the expansion of the 2017 State Water Plan to include an interactive format will give Texans the opportunity to access more information and put that information into greater context based on their own specific needs.

1.4 Organization of the plan

The next chapter lists the TWDB’s policy recommendations to the Texas Legislature, and Chapter 3 provides drought response information.

Chapter 4 presents the funding needs required to implement this new plan, which were identified by planning groups. Chapter 9 provides more

information on the types of projects that have already been funded through SWIFT as well as on the implementation of the previous state water plan.

The remaining chapters, 5–8, summarize the steps that go into developing water plans and summarize the population and water demand projections, water supplies, needs, and recommended water management strategies and projects that are the fundamental building blocks of each state water plan. A variety of summaries of the information contained in these chapters can be viewed through the interactive state water plan website at texasstatewaterplan.org.

To better understand the context in which planning groups plan for water needs during a drought, it can be helpful to have more knowledge of how water is managed in the state in general. Each regional water plan must be consistent with all laws, rules, and regulations applicable to water use in the planning area. Appendix A.I provides additional information on how surface water and groundwater are managed and on water quality, drinking water, and interstate waters, all of which are important considerations when planning for drought conditions. This appendix also includes a brief history of water planning in Texas.



Bluebonnets in the Texas Hill Country