Texas Water Development Board

Self-Evaluation Report

Submitted to the
Texas Sunset Advisory Commission
September 1, 2021

Texas Water Development Board

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Acronym Reference

ASR: Aquifer Storage and Recovery

BRACS: Brackish Resources Aquifer Characterization System

CAPPS: Centralized Accounting and Payroll Personnel System

CFO: Chief Financial Officer

CWSRF: Clean Water State Revolving Fund

DFC: Desired Future Condition

DIR: Texas Department of Information Resources

DWSRF: Drinking Water State Revolving Fund

EDAP: Economically Distressed Areas Program

EPA: U.S. Environmental Protection Agency

FEMA: Federal Emergency Management Agency

FIF: Flood Infrastructure Fund

FLICC: Flood Information Clearinghouse Committee

GCD: Groundwater Conservation District

GIO: Geographic Information Officer

GIS: Geographic Information System

GLO: Texas General Land Office

LBB: Legislative Budget Board

NFIP: National Flood Insurance Program

RRC: Railroad Commission of Texas

RWAF: Rural Water Assistance Fund

SRF: State Revolving Fund

SWIFT: State Water Implementation Fund for Texas

SWIRFT: State Water Implementation Revenue Fund for Texas

TCEQ: Texas Commission on Environmental Quality

TDEM: Texas Division of Emergency Management

TIRF: Texas Infrastructure Resiliency Fund

TNRIS: Texas Natural Resources Information System

TPWD: Texas Parks and Wildlife Department

TWDB: Texas Water Development Board

TWICC: Texas Water Infrastructure Coordination Committee

TxWISE: Texas Water Information System Expansion

USGS: United States Geological Survey

WIF: Water Infrastructure Fund

Texas Water Development Board
Self-Evaluation Report

I. Agency Contact Information

A. Please fill in the following chart.

TWDB
Exhibit 1: Agency Contacts

	Name	Address	Telephone & Fax Numbers	Email Address
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II. Key Functions and Performance

A. Provide an overview of your agency's mission, objectives, and key functions.

The mission of the Texas Water Development Board (TWDB) is to lead the state's efforts in ensuring a secure water future for Texas and its citizens. Our mission is a vital part of Texas' overall vision and the state's mission and goals that relate to maintaining the viability of the state's natural resources, health, and economic development.

The TWDB supports water supply and flood mitigation planning, water-related and geographic data collection and dissemination, financial assistance, and technical assistance services for the citizens of Texas. Each of these areas helps accomplish our goals of planning for the state's water resources and providing affordable water and wastewater services. The tremendous population growth that the state continues to experience and the recurrent threat of severe droughts and floods only intensify the need for the TWDB to accomplish its goals in an effective and efficient manner.

The TWDB was created in 1957 in response to the devastating drought of the 1950s. Over the last 60 years the agency's responsibilities have grown and evolved, with our key functions now falling into four broad objectives in support of the agency's mission:

1. Water science and conservation

2. Water supply and flood mitigation planning
3. Financial assistance for water, wastewater and flood projects
4. Texas Natural Resources Information System (TNRIS), the state's geospatial data clearinghouse, which supports other agency objectives as well as a broad range of economic development and emergency management activities throughout the state

A full-time, three-member governing Board appointed by the governor considers financial assistance applications from eligible applicants, awards grants for water-related research and planning, and conducts other TWDB business, such as adopting the state water plan.

B. Do your key functions continue to serve a clear and ongoing objective? Explain why each of these functions is still needed.

The key functions of the TWDB continue to serve clear and ongoing objectives, many directly supporting essential needs of Texans including clean, safe water to drink during times of plenty and times of drought; healthy rivers, streams and bays; and the fundamental need to protect Texans' lives and property from flood events.

Since its creation in 1957, the TWDB has been charged with addressing the state's water needs through planning and financial assistance. Local communities carry out the responsibility for providing water to their residents; however, the TWDB has a leadership and support role through guiding, enabling, and supporting the conservation and responsible development of the state's water resources.

Texas' population is anticipated to increase 73 percent between 2020 and 2070, from 29.7 million to 51.5 million, with approximately half of this growth occurring in the greater Dallas-Fort Worth Metroplex and the metropolitan Houston areas. Continuing rapid growth combined with Texas' susceptibility to droughts and floods means that water will always be a crucial issue for our state. Growth brings greater demand for natural resources, particularly water, which is key in every sector of the Texas economy—agriculture, manufacturing, mining, and power generation, as well as business, tourism, and commerce. And the continued availability of water supplies is imperative to the maintenance of the ecological health and productivity of Texas rivers, streams, reservoirs, bays, and estuaries.

According to the 2022 State Water Plan, Texas' existing water supplies—those that can already be relied on in the event of drought—are projected to decline by approximately 18 percent between 2020 and 2070, from 16.8 million to 13.8 million acre-feet per year. Inadequate water supplies can curtail economic activity for businesses and industries heavily reliant on water, which can result in job losses and monetary losses to the state economy. The implementation of water projects can have a positive impact on the state economy by generating sales revenue in construction, engineering, and supporting businesses; expanding state gross domestic product; adding state and local tax receipts; and creating or supporting jobs. Considering the vital role water plays in our economy, proper regional and state water planning becomes even more critical, along with financing and implementing water supply strategies recommended in the planning process.

The 2022 State Water Plan lays out a road map for these efforts, with approximately 5,800 water management strategies recommended that would provide 1.7 million acre-feet per year in additional water supplies to water user groups in 2020 and 7.7 million acre-feet per year in 2070. Conservation strategies represent approximately 29 percent, or 2.2 million acre-feet per year, of all recommended water management strategy volumes in 2070 and were recommended for more than half of the water user groups in the plan.

The creation of new water supplies and flood mitigation activities are capital-intensive efforts that can take many years of planning and implementation. The estimated capital cost to design, construct, and implement recommended state water plan projects by 2070 is $80 billion, without accounting for future inflation. Even water conservation requires planning and financial resources to be successful. Balancing the water needs of agriculture, industry, cities, rural areas, and the environment is becoming increasingly challenging, and TWDB data, research, planning, and financial assistance are instrumental in addressing these challenges.

In the same way that insufficient water supply can have grave implications for Texas, too much water can also have serious and far-reaching effects. As reported in the TWDB's 2019 State Flood Assessment, roughly 1 in every 10 Texans is exposed to moderate or high risk of riverine flooding each year; coastal flooding is projected to become the costliest weather-related hazard to the state; and more than half of recent flood insurance claims occurred outside of areas identified as high-risk flood zones.

Since the transfer of the administration of the National Flood Insurance Program (NFIP) in Texas to the TWDB in 2007, the agency has taken on greater flood-related responsibilities, including supporting Texans in preparing for and responding to flood events. The TWDB's new flood-related programs, created by the 86th Texas Legislature in 2019, will be critical to mitigating these risks in the coming years. Much like how the state water plan and State Water Implementation Fund for Texas (SWIFT) program work hand in hand to plan and implement water supply projects, the Flood Infrastructure Fund (FIF) is designed to implement flood mitigation measures recommended in the state flood plan, with the first plan due in 2024.

Planning cannot be accomplished effectively without science and information to support and allow well informed decision-making. The TWDB investigates, collects, and houses information on a myriad of subjects, including surface water resources (coastal science, river science, reservoir surveys, and atmospheric monitoring), fresh and brackish groundwater resources, and innovative water technologies (including advances in municipal and agricultural water conservation strategies, desalination, and aquifer storage and recovery (ASR). The agency also provides high quality historic and current geospatial data products, custom mapping services, education, and training. The TWDB makes these science and information resources freely available to build the knowledge base for planners, water professionals, and other institutions to help secure the current and future water needs of Texas.

C. What, if any, functions does your agency perform that are no longer serving a clear and ongoing purpose? Which agency functions could be eliminated?

There are no major programs or functions that the TWDB has identified as no longer serving a clear and ongoing purpose.

As part of the agency's biennial strategic planning process, the TWDB continually evaluates the ongoing need for our functions and how to make the best use of state resources. For example, the agency regularly evaluates the need for reports to the legislature. In recent legislative sessions, the TWDB's governing Board in its biennial Legislative Priorities reports has recommended the removal of obsolete and duplicative reporting requirements. For some of these formal publications, the same information is included in regular reporting on the agency's website more frequently than the statutory reporting requirement, and the information is presented in a more transparent and usable fashion. Eliminating legislative reports in these circumstances conserves agency resources while maintaining the transparency of essential data and information provided to the legislature and the public.

D. Does your agency's enabling law continue to correctly reflect your mission, objectives, and approach to performing your functions?

The agency's enabling law continues to correctly reflect our mission, objectives, and approach to performing our core functions, while allowing for flexibility in meeting operational goals established during the biennial strategic planning process. The TWDB's 2020 Strategic Plan identifies five operational goals:

Goal 1: Continue to evaluate and make improvements to the TWDB's suite of financial assistance programs to best meet the needs of Texas communities. This goal is consistent with the statewide objectives of being accountable and efficient with state resources as well as continuous improvement in the delivery of services. It also furthers the agency's mission and core function of providing cost-effective financial assistance for water-related projects.

Goal 2: Become the state leader in collection and dissemination of flood-related data, science, and information. This goal seeks to protect the lives, livelihoods, and property of Texans through the collection and dissemination of data and information, a core function of the TWDB. The agency is continually seeking to improve customer service, particularly through user-friendly internet applications that meet the needs of local decision-makers, emergency responders, and the general public regarding flood hazards.

Goal 3: Become the leader in providing state financial assistance for flood mitigation projects. This goal is accountable to Texans by continuing and expanding cost-effective financial assistance options for flood mitigation projects through existing state and federal programs including the newly created FIF program. These programs leverage local, state, and federal resources for the benefit of taxpayers. Agency staff and Board members routinely perform outreach through these programs so that communities across the state are aware of the various options for financial assistance and the potential for cost savings for their customers.

Goal 4: Support local and regional flood planning and collaboration efforts. This goal seeks to support local and regional decision-makers in regional flood planning activities through

technical and financial assistance, leveraging local, state, and federal dollars for the benefit of taxpayers. It will also guide the development of the state's first-ever state flood plan through the new regional flood planning process.

Goal 5: Modernize and refine quantification of the state's water resources, including enhancement of data dissemination networks, products, and technical services. This goal seeks to maintain the TWDB's status as Texas' essential resource for water science data and to continuously improve our understanding of water science in support of the state's public health, safety, welfare, and economic development. This goal represents our mantra: "the better the data, the better the science, the better the policy."

E. Have you previously recommended changes to the legislature to improve your agency's operations? If so, briefly explain the recommended changes, whether or not they were adopted, and if adopted, when.

Section 6.156 of the Texas Water Code requires the TWDB to provide the governor and members of the legislature with a biennial report that includes recommendations for necessary and desirable legislation. Agency recommendations for statutory changes included in the agency's "Legislative Priorities" reports and legislative appropriations requests to the 86th and 87th legislatures are outlined below.

86th Legislative Session

In the aftermath of Hurricane Harvey, the TWDB conducted Texas' first State Flood Assessment, including an overview of flood-related roles and responsibilities, an estimation of flood mitigation costs, and a synopsis of stakeholder views on the future of flood planning in Texas. Based on preliminary findings from that effort, the TWDB recommended that the legislature pursue proactive statewide flood mitigation by developing foundational flood risk management policies and goals to support three key pillars of investment: (1) improved and updated flood mapping and modeling; (2) coordinated watershed-based planning; and (3) mitigation efforts, such as policy enhancements, increased technical assistance, and financial assistance for project implementation.

In response to this assessment and other efforts initiated in the wake of Hurricane Harvey, the 86th Legislature and Governor Abbott greatly expanded the TWDB's role in flood planning, science, and financial assistance via the historic passage of Senate Bill (SB) 7 (which created FIF and the Texas Infrastructure Resiliency Fund [TIRF]) and SB 8 (which created a new regional and state flood planning process). SB 500 appropriated funding for infrastructure projects related to drainage, flood mitigation, flood control, regional flood planning activities, and flood science initiatives to support development of the regional and state flood plans.

In addition to the flood initiatives described above, the TWDB recommended statutory changes that resulted in five bills filed and a floor amendment to a sixth bill, all of which passed and are being implemented:

- Recreation of the Strategic Mapping Account (adopted): This request was to recreate the Strategic Mapping Account as a general revenue-dedicated account exempt from

the funds consolidation process and appropriate the unexpended balance for future biennia. Recreation of the account allows for the collection of agency and grant funding, combined with Strategic Mapping general revenue funding, for statewide and regional geospatial data purchases. (HB 3317)

- Extension of HB 30 Brackish Resources Aquifer Characterization System (BRACS) Deadline (adopted): This request was to extend the 2022 deadline from HB 30, 84th Legislative Session, to 2032 to identify and designate brackish groundwater production zones in brackish aquifers that meet HB 30 criteria. (SB 1041)

- Clean Water State Revolving Fund (CWSRF) Statutory Update (adopted): This request was to enact statutory provisions to reflect changes in federal law regarding the CWSRF, including a maximum loan term of up to 30 years; this request updated relevant sections of the Texas Water Code to reflect the changes made by the federal Water Resources Reform and Development Act of 2014. (SB 942)

- Cleanup of Water Conservation Plan Requirements for Financial Assistance Applicants (adopted): This request was to enact statutory changes to create a single, consistent requirement for water conservation plans for all applicants for TWDB financial assistance. (HB 3339)

- Removal of Obsolete and Duplicative Requirements (adopted): This request was to remove statutory requirements (1) for the Water Conservation Study conducted jointly between the TWDB and the Texas State Soil and Water Conservation Board; (2) to meet annually with the board of the Texas Department of Agriculture to assess the agencies' progress in meeting needs of colonia residents and to receive updates and recommendations from the Colonia Initiatives Advisory Committee; and (3) for the TWDB report that evaluates best management practices in water conservation plans. (SB 1574)

- Texas Open Meetings Act Exception (adopted): This request was to give the TWDB the authority to consider and discuss financial matters related to the investment or potential investment of the Board's funds in a closed meeting. (SB 1386)

The agency requested and received funding for the following items:

- Flood Technical Package ($4.448 million/10.0 FTEs): Funding for the Flood Technical Package was included in the Supplemental Appropriations Bill, SB 500, and enabled the TWDB to further its efforts and make advancements in floodplain mapping, hydraulic river and coastal modeling, flood monitoring, and the distribution of critical flood-related data and information.

- Groundwater Funding Package ($3.0 million/6.0 FTEs): This request incorporated funding for two objectives. The first objective was to accelerate the mapping and characterization of brackish aquifers to determine areas of the state with moderate to high availability and possible productivity of brackish groundwater for the purposes of

providing additional water supplies and reducing the use of fresh groundwater. The second objective was to update the Groundwater Availability Models from outdated, unsupported software and code to current best practice standards. Both objectives develop and refine critical inputs for the state water planning process and for managing groundwater resources.

- Strategic Mapping Program ($3.0 million/0 FTEs): The Strategic Mapping Program acquires, stores, and distributes digital geospatial information to all state agencies and makes it available to the public. It also supports emergency management activities by developing critical geographic information for first responders. Funding for this program enables the TWDB to acquire new geographic data and help build other valuable data products such as land parcel data, address point data, and a 3D-building database for the state.

- Centralized Accounting and Payroll Personnel System (CAPPS) Implementation ($588,063/5 FTEs [FY2021]): This funding provided financial resources for proper planning and execution of CAPPS Human Resources and allowed the agency to retire its legacy system, upgrade its payroll system, retire the existing TWDB timekeeping system (Clockwise), and rewrite the TWDB labor distribution system used to allocate payroll costs to federal grants.

- Data Center Consolidation ($488,348/0 FTEs): This request provided funding and capital authority for the TWDB to migrate servers to the state's Data Center Services Hybrid Cloud Services Environment, including a buildout of a virtual private cloud and virtual servers, as well as base security, patching, and backup services.

87th Legislative Session

In the 87th Regular Legislative Session, the TWDB requested statutory changes that resulted in six bills filed, four of which passed. These items included the following:

- State Water Plan Statutory Updates (adopted): This request was to remove certain regional water planning duties that are underfunded and/or no longer informative, including requirements for the regional water planning groups to prepare infrastructure financing reports and to prioritize projects at the regional level. (HB 1905)

- Removal of Obsolete and Duplicative Requirements (adopted): This request was to remove the statutory requirements for the TWDB to submit the Water Use of Texas Water Utilities Report, the Report on Repair and Maintenance Needs of Certain Dams, and the Colonia Funding Report prepared jointly with the TDA. (SB 669, 87th Regular Legislative Session, and deletion of former rider in the General Appropriations Act, SB 1)

- Water Infrastructure Fund (WIF) Equity (adopted): This request was to allow the TWDB to transfer WIF to be used in the Development Fund II. TWDB retired the WIF in 2013 when the legislature created SWIFT. (HB 1904)

- Uniform Grant Management Standards (adopted): This request was to exempt FIF, TIRF, and the Agricultural Water Conservation program from The Texas Comptroller of Public Accounts' state grant management guidance, which is called the Uniform Grant Management Standards. The TWDB grant standards are more comprehensive than the Uniform Grant Management Standards and are consistent with the agency's statutory and programmatic guidance, and all other TWDB state-funded grant programs are already explicitly exempt. (SB 1890)

- Interregional Planning Council Support (not adopted): This request was to clarify the TWDB's responsibilities with respect to the Interregional Planning Council created by the 86th Legislature. Statute is silent on the provision of technical support from the TWDB for this council, but TWDB staff provided considerable support for the inaugural Council's work during the interim. (HB 1874/SB 673)

- Texas Open Meetings Act Virtual Allowance (not adopted): this request was to make an allowance for the Interregional Planning Council, regional water planning groups, and regional flood planning groups, or any of their committees, to hold an open or closed meeting by telephone or video conference call. (HB 2103/SB 859)

The TWDB requested and received funding for the following exceptional items:

- Restore Baseline Funding for Vehicles Replacement ($200,280/0 FTEs): The TWDB has 46 vehicles; 20 are over 10 years old, and 17 will have over 100,000 miles by the FY 2022–23 biennium. The TWDB identified internal savings of about $200,000 to allow the agency to purchase five vehicles per year in FY 2022 and FY 2023 and requested a new capital budget to use existing funds. This exceptional item request was not included in the General Appropriations Act (SB 1), as enrolled; however, the Supplemental Appropriations Bill, HB 2, restored $200,280 for vehicle purchases.

- Mitigate Information Technology Risk ($586,250/2.0 FTEs): The TWDB manages many complex applications and vast amounts of financial and securities information. The TWDB's original exceptional item request included $1,172,500 and 4.0 FTEs dedicated to protecting the agency from a breach or loss of data and ensuring efficient uses of technology. It also included application vulnerability scanning and performance monitoring software. The TWDB received 50 percent of the requested amount and FTEs. Economically Distressed Areas Program (EDAP) Debt Service ($2,587,500/0 FTEs): In November 2019, Texas voters approved a constitutional amendment to provide the TWDB ongoing authorization to issue additional general obligation bonds to provide financial assistance for projects in economically distressed areas. This exceptional item, as requested, would have provided funding to support an estimated $30 million in new general obligation bond proceeds to provide assistance to communities that meet EDAP criteria and have inadequate water or wastewater services. However, in addition to this requested funding, the TWDB received $3,500,000 in funding for EDAP debt service in Article IX of the General Appropriations Act. The combined total of $6,087,500 will allow for up to $100 million in EDAP financial assistance in the next biennium.

- **CAPPS Financials ($588,063/5.0 FTEs): The TWDB is scheduled to implement CAPPS Financials in FY 2022. This exceptional item was funded via the Supplemental Appropriations Bill, HB 2, and provides funding and staff to support implementation.**

The TWDB requested but did not receive funding to restore baseline funding for the General Revenue (GR) state match for the Drinking Water State Revolving Fund (DWSRF); to improve critical data analysis capabilities for the state water plan; to fund increased costs for Shared Technology Services; or to provide staff support for the Interregional Planning Council.

F. Do any of your agency's functions overlap or duplicate those of another local, state, or federal agency? Explain if, and why, each of your key functions is most appropriately placed within your agency. How do you ensure against duplication with other related agencies?

Several areas within the TWDB perform functions similar to other local, state, or federal agencies, but this is viewed as an opportunity for collaboration and leveraging of state and federal resources.

Science Functions

The TWDB generally has cooperative agreements, both formal and informal, with other entities involved in water science to clarify roles and leverage subject matter expertise and resources. These cooperative relationships assure that none of the functional areas are duplicative or redundant. More details on the function, roles, and arrangements with these partner entities are provided in response to Section VII, Items H and I, programmatic descriptions. One overall example of a cooperative effort is the Flood Organizing Group (FLOG), which is a collaborative group of federal and state agencies focused on flood science and planning topics. The FLOG meets monthly to compare activities, seek ways to provide synergy, and avoid duplication of effort.

Planning Functions

Both water supply and flood mitigation planning are performed at various levels of government, from the local level to the regional level to the state level programs administered by the TWDB. The state level programs—regional water supply planning and regional flood planning—provide a framework that ensures that all areas of the state are planned for in a consistent manner.

One of the key findings of the TWDB's 2019 State Flood Assessment was that Texas does not have a statewide strategic plan to address flood risk management. Flood mitigation, in particular, involves combinations of actions within watersheds to prevent or reduce the impacts of flood events. Though individual planning efforts have taken place across the state, prior to the initiation of the regional flood planning process directed by SB 8, 86th Legislative Session in 2019, there was no unified, coordinated process to assess and plan for the state's flood-related needs. As such, project implementation has historically occurred in a piecemeal fashion. The new flood planning process will provide a coordinated framework to address this need, and collaborative planning is further reinforced as a statutory condition for financial assistance via the FIF program.

Water Financial Assistance

The TWDB was a founding member of the Texas Water Infrastructure Coordination Committee (TWICC), which is a "one-stop shop" for information on funding eligibility or technical assistance for water systems facing infrastructure or compliance issues. The committee is a collaborative effort by state and federal government agencies and technical assistance providers promoting an efficient process for affordable, sustainable, and innovative funding strategies for water and wastewater infrastructure projects that protect public health.

Flood Financial Assistance

The 86th Legislature directed the TWDB to develop a clearinghouse of information about state and federal flood planning, mitigation, and control programs that may serve as a source of funding for flood projects. This "information clearinghouse" website is a cooperative effort between the Texas General Land Office (GLO), the Texas Division of Emergency Management (TDEM), and the TWDB. The Flood Information Clearinghouse Committee (FLICC), modeled after the TWICC, is a group of cooperating agencies that regularly meets to review funding inquiries submitted to the committee and to coordinate the use of state and federal funding for flood mitigation projects.

TNRIS, Geospatial Information Clearinghouse

One of the most important functions of the Geographic Information Officer (GIO), a position within TNRIS established through the TWDB's last Sunset review process in 2011 (SB 660, 82nd Regular Legislative Session), is to build and maintain relationships with public agencies, institutes of higher education, and private sector and trade associations. The GIO encourages cooperation between stakeholders to maximize the value of Geographic Information System (GIS) data and services. To ensure strong coordination and collaboration among state agencies, TNRIS, through the Department of Information Resources (DIR), has established the GIS Solutions Group made up of personnel from several state agencies. This group provides input on data projects and how funds should be spent for the good of the state, and the StratMap program works diligently to ensure that geographic data acquisition projects are centralized through the program and made freely available to the public.

G. In general, how do other states carry out similar functions?

In general, the TWDB is a unique state agency because it combines functions that are often housed in separate agencies or paired with regulatory authority in other states. The combination of comprehensive science, planning, and financial assistance objectives in a single agency—independent of regulatory functions—gives the state of Texas an exceptional vantage point from which to make informed policy decisions regarding water issues, yielding our mantra: "The better the data, the better the science, the better the policy." We believe that this combination of objectives not only results in better policy but also more effective projects and strategies that, when implemented, better serve the state and its citizens. Maintaining our functions in this configuration will help maintain the TWDB's reputation as a source of unbiased scientific information upon which to make decisions.

The importance of science as the foundation of the TWDB's work cannot be overstated. The agency's water science and data programs collect and analyze water quantity, water quality,

and geographic data that provide long-term periods of information on aquifer levels, groundwater quality, reservoir levels, stream flows, evaporation, weather, floods, and drought. Staff translate and distribute this information in the form of studies, reports, and interactive databases to allow decision makers to plan ahead and be prepared for extremes ranging from flooding to drought. The flexibility afforded in statute allows the agency to pursue further science to fill gaps and meet other challenges as they arise.

Planning Functions

Texas' regional and state water supply planning approach is at the forefront of water supply planning in the nation. Texas maintains the most consistent approach to both funding and the development of cyclical state water plans, in a bottom-up manner with regional stakeholders driving the decision-making, within the state framework. Uniquely, Texas water plans produce highly credible data-driven plans and include very specific information for how thousands of individual water user groups can implement thousands of strategies and projects to meet their water demands under drought conditions for the next 50 years. And thanks to the Texas Legislature's significant ongoing investments in surface water and groundwater modeling efforts, Texas water plans, unlike most other states, are founded on and bound by highly credible assessments of the capacities of Texas' extensive range of water resources.

Other states, including California, Illinois, Iowa, Maryland, Minnesota, Montana, Nebraska, New Jersey, Oklahoma, and West Virginia have published formal plans related to watershed-based or statewide flooding concerns, floodplain management, or flood hazard mitigation operations; however, Texas' new regional and state flood planning program is anticipated to produce more specific information on flood risk and recommended flood mitigation measures. Most existing flood plans in other states do not recommend specific projects for funding and are not supported by dedicated state funding sources.

Financial Assistance Functions

All states in the U.S. administer State Revolving Fund (SRF) programs. Although the states have latitude in tailoring the revolving funds to their individual needs, all must follow the federal rules, guidelines, and laws. Similar to Texas, other states of comparable size (New York, Ohio, Pennsylvania, and California, for example) also have a wide range of financial grant and loan programs for water infrastructure and related projects in addition to their SRFs. For reference, the Council of Infrastructure Financing Authorities, a national not-for-profit organization that represents state Clean Water and Drinking Water SRFs, identifies state entities that manage SRF programs and provides a comparison between state programs.

National Flood Insurance Program

All states in the U.S. have a state coordinating agency for the NFIP. Other states carry out their programs similarly, although some offices are held within transportation or emergency management agencies. Since some other states regulate state-owned properties as well as require all communities to join the NFIP, their programs may be structured in a way that allows for more regulatory authority than Texas' current NFIP program. By consolidating flood planning, flood science/mapping, community assistance for floodplain management, and significant portions of flood funding within one state agency, the TWDB can provide consistent

coordination with the Federal Emergency Management Agency (FEMA) and the general public regarding all aspects of floodplain management.

Geospatial Information

Other states operate with a range of models. Some states use university programs to disseminate their information but do not provide funding from the state. Other states view GIS technology as a part of information technology and focus on technology coordination aspects. Still other states use a model similar to Texas, which provides a central clearinghouse and consolidated operational center to support agency specific GIS groups to accomplish their mission.

H. What key obstacles impair your agency's ability to achieve its objectives?

The following sections detail some obstacles that may impair the TWDB's ability to achieve its objectives; please see Section IX, Major Issues, for a discussion on other issues that impact the TWDB's objectives and stakeholders.

Increasing Statutory and Operational Responsibilities

The TWDB's governing Board and leadership team routinely consider organizational risks that could create obstacles in achieving our objectives, particularly due to the agency's increasing amount of statutory and operational responsibilities in recent years. Since 2013 (considered as a reference year due to legislation that created the SWIFT program and converted the agency's Board from a six-member, part-time Board to a three-member, full-time Board), the agency has seen a significant increase in key performance metrics, including

- an increase in total assets managed from $6.8 billion in 2013 to $17.6 billion in FY 2020, a 157 percent increase (Figure 1);
- an increase in new financial assistance funds delivered from about $500 million in FY 2013 to nearly $2.5 billion in 2020, a 400 percent increase (Figure 2);
- an increase in number of active construction contracts through the TWDB's financial assistance programs from 257 in 2013 to 600 as of the end of 2020;
- an increase in par value of bonds issued from $386 million in FY 2013 to $1.2 billion in FY 2020, a 214 percent increase (the amount of par value of bonds has been as high as $2.5 billion in FY 2018).

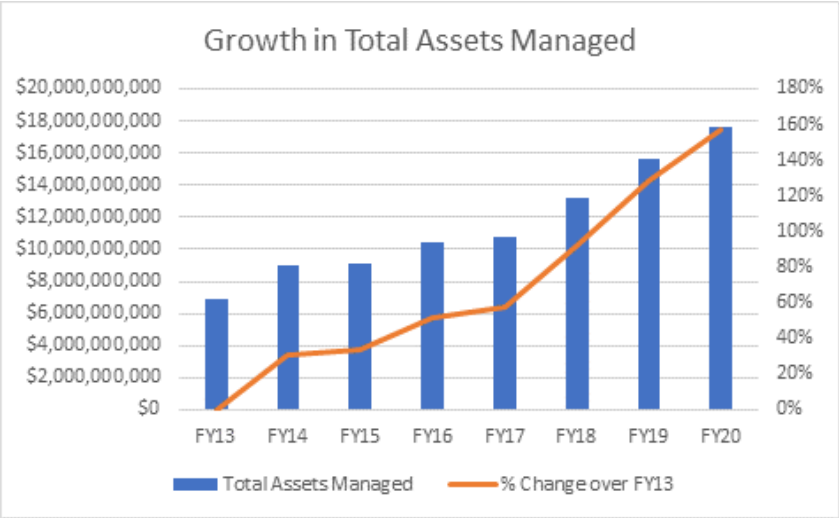

Figure 1 Growth in Total Assets Managed

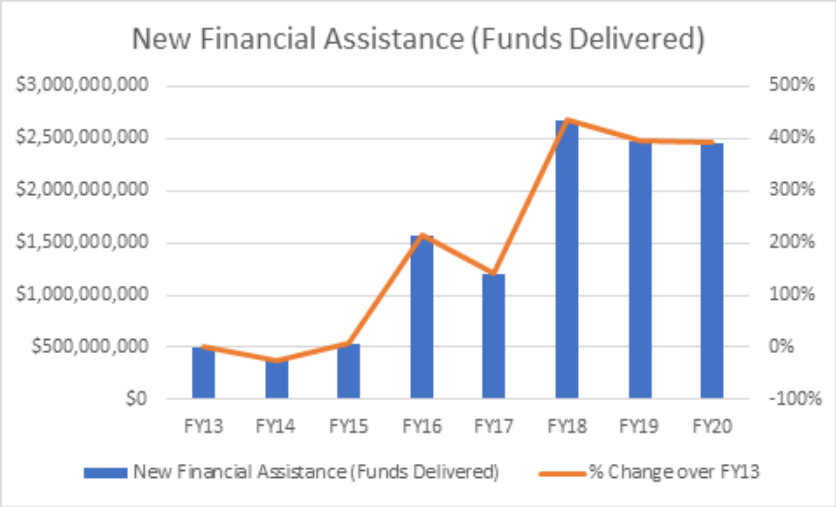

Figure 2 New Financial Assistance (Funds Delivered)

The 86th Legislature added completely new functions: statewide flood mapping and planning and flood mitigation financial assistance. The agency's cap on FTEs was 312 for the 2013–2014 biennium, and it remained relatively static until it was increased to 395 for the 2020–2021 biennium. Seventy percent of that increase was related to the new flood functions and CAPPS-Human Resources implementation, which are not included in the above increased metrics.

Because of these and other considerations, the TWDB identified several risks that the agency could face in the future, including but not limited to the following:

- Strategic risks such as challenges in managing competing state and agency priorities
- Financial risks related to cybersecurity threats

- Increased workloads leading to job-related "burnout," decreased engagement, and difficulties in retaining employees
- Occupational risks such as the ability to recruit and retain qualified employees because of mobility challenges and difficulties offering market-competitive salaries
- Risks related to management of contracts
- Reputational risks such as our ability to quickly respond to customers; our ability to adequately maintain the quality and integrity of scientific data that we collect and maintain; and our capacity to satisfy the needs of our customers while meeting state and federal statutory and regulatory requirements

These risks were considered in the TWDB's Legislative Appropriations Request for the 2022–23 biennium and policy recommendations made by the TWDB's governing Board to the legislature (see Section II.E).

Staffing

The agency continues to face challenges in maintaining staffing levels in the areas of information technology, contract administration, engineering, flood planning, and specific expertise in Texas' water resources such as flood engineers and modelers, flood grant coordinators, GIS specialists, hydrogeologists, groundwater modelers, surface water engineers, and surface water hydrologists. For comparison, the median salary in the Austin area for engineers is $104,000 (Payfactors, Generic Engineer I-VII) compared with $87,000 for state classified engineers (SAO Electronic Classification Analysis System [E-Class], FY20–21, Engineer I-VI). Because of this disparity, the TWDB is faced with hiring staff at entry- to mid-level positions, when possible, and providing these individuals with extensive training and development (internally and externally). Based on the highly specialized work performed and the increased workload on existing staff, this situation is not optimal nor sustainable.

Mobility

Like many state agencies in the downtown Austin area, the TWDB has faced substantial mobility challenges in the last few years. In a 2019 survey of TWDB employees, 60 percent of active employees indicated that the average one-way commute (prior to the COVID-19 pandemic) for a TWDB employee is 26 miles, with over 80 percent of responding employees spending more than 30 minutes driving home at the end of each day. These factors—coupled with parking limitations—provide a glimpse into the declining overall quality of life that many employees have faced in continuing their service to the state of Texas in the Capitol Complex.

The TWDB's 2019 Strategic Mobility Plan, which includes the full results of the survey, identifies four goals to help address these challenges. The plan's top action item is to raise awareness of current telework and flexible schedule policies among managers and employees to allow employees to achieve a better work/life balance while maintaining high productivity. Because of these mobility challenges and the challenges in recruitment and retention, the TWDB supports the consideration of state policies that encourage alternate mobility usage by state employees and allow for virtual and hybrid work options for appropriate staff.

Customer Service

The increase in workload and hiring challenges in engineering positions has resulted in an increase in customer feedback regarding the timeliness of financial assistance project reviews. The TWDB continues to monitor customer feedback and is working to improve customer service while balancing staff workload and the need to comply with state and federal statutes and regulations as well as general program limitations.

Over the last year, the TWDB has taken several steps to meet expectations for financial assistance project engineering related reviews, including contracting with the University of Texas at Arlington to assist with plans and specification review, inspections, project prioritization scoring, and external program guidance development. The TWDB has increased starting salaries of engineers and is currently offering a recruitment bonus for licensed professional engineers.

Additional efforts include the recent hiring of a consulting engineering firm to provide a review of current TWDB engineering processes to identify potential efficiencies and recommendations for improvement. The consulting firm, Freese and Nichols Inc., is also assisting the TWDB with evaluating potential management tools to track project status. Ultimately, the TWDB envisions a project management tool that would not only enable engineering staff and managers to identify potential delays in a timely manner but would have an external facing portal that would assist customers with monitoring their project's status and prompt any necessary document submittals. The agency is also in the process of hiring a new Customer Service Liaison position to serve as intermediary between the TWDB and financial assistance customers, which will include monitoring projects and assisting customers in addressing and resolving issues.

Financial Assistance Needs for Small, Rural, and Economically Disadvantaged Communities

Over the last three decades, the TWDB has made significant strides in assisting small, rural, and disadvantaged communities through the SRF programs and EDAP so they are able to install first-time systems, replace aging infrastructure, and upgrade water and wastewater treatment plants to meet regulatory standards. However, these programs have limited capacity and EDAP now requires a greater loan component than in the past. The SWIFT program, the Rural Water Assistance Fund (RWAF) program, and the Texas Water Development Fund (DFund) are not able to provide grants because of statutory prohibitions, and loans through these programs are often not adequately subsidized to meet the needs of small, rural, and disadvantaged communities.

Despite the available financial assistance options, the needs of some Texas communities are not fully met because the capacities of the EDAP and SRF programs are limited, and some communities lack the resources to repay financial assistance in the form of a loan because of aging populations on fixed incomes, limited commercial tax base, and/or limited opportunities for economic development and growth.

It is estimated that over $400 million in EDAP-type financial assistance is needed for water and wastewater projects that could serve around 370,000 Texans. This estimate is based on entities that have (1) expressed interest in the EDAP or (2) submitted project information forms for

the SRF programs and qualify as disadvantaged. (Note: These needs should not be considered exhaustive statewide because there may be needs beyond these entities that have been in contact with the TWDB.)

General revenue appropriated by the 87th Legislature will support the issuance of general obligation bonds that will provide financial assistance for up to $100 million in EDAP projects in the next biennium, and the State Fiscal Year 2022 SRF programs will be able to provide approximately $37 million in disadvantaged capacity in total. The TWDB is optimistic that additional SRF and other federal funding will be able to meet at least a portion of these needs in the near future.

I. Discuss any changes that could impact your agency's key functions in the near future (e.g., changes in federal law or outstanding court cases).

See "Governmental Immunity for Local Governments Participating in Regional Projects" in Section IX, Major Issues, for discussion on an outstanding court case that could impact the TWDB's key functions.

J. Aside from additional staff or funding, what are your agency's biggest opportunities for improvement in the future? For example, are there other programs or duties the agency could take on to better carry out its mission?

Along with the opportunity to address the challenges above, the TWDB has several opportunities for improvements in the future. The agency also looks forward to continuing to advance innovative solutions to the state's water problems (see Section II. K for examples of some of our achievements in this area).

TexasFlood.org

TexasFlood.org, launched in August 2021, is a newly designed website that provides basic information on emergency preparation for and recovery from flood events, as well as web tools to better understand flood risk, in a format that is easy to access and easy for the general public to understand. When navigating the site, users learn about flood basics, including the primary types of flooding, the basics of flood insurance, what a Floodplain Administrator is, and how to contact that individual. A tools and science library includes near real-time maps that reflect where the state is flooding, driving and weather conditions, as well as long-term information such as individual flood risk and flooding scenarios. The website was developed in collaboration with GLO and TDEM to ensure consistent messaging and to optimize resources and knowledge across agencies. The TWDB will continue to seek opportunities to improve TexasFlood.org once we evaluate the success of the new site in the coming months and years.

Water Data

One of the biggest opportunities for improvement is through the continued refinement and expansion of water data collection and dissemination efforts. Making advancements to ensure the agency's water data are findable, accessible, interoperable, and reusable ("FAIR") is a significant opportunity and specific objective of the TWDB, and we continue to pursue ongoing improvements to our data networks and systems.

New and consolidated flood data is now available online through several web portals, but ongoing efforts will be focused on further consolidating and simplifying the many flood viewers that are currently available. Approximate flood risk mapping is available, in collaboration with federal partners, through the Base Flood Elevation Viewer, and consolidated flood risk data from a variety of state and federal sources was combined into one location to simplify flood planning efforts at the Flood Planning Data Hub.

The Coastal Science program, in coordination with federal partners, has received grant funding to develop a planning framework for supporting the monitoring and modeling of hydrologic, hydrodynamic, and meteorological processes to better visualize and improve upon the flood risk information that is available for coastal flood planning. This project will include a focus on coupling inland-coastal models to evaluate compound flooding, an approach that is not currently available for understanding flood risk.

Information Technology Data Services

Information Technology recently launched a new Data Services Team in September 2020 to provide strategic direction and improve the maturity of the agency's data governance and management programs. Data services, including business intelligence and data analytics, is rapidly growing in importance. As organizations strive to manage, protect, and get maximum value out of the large quantities of data being collected, having dedicated data services resources is paramount to help ensure the agency is providing insightful data to customers in innovative ways.

Agency Digitization Initiative

Currently, the agency maintains and manages many of its financial and business records and processes in paper format. As a result of the TWDB's growth and the need to accommodate incoming full-time staff, an estimated 6,000 cubic feet of storage space for historical active and non-active records is being leased at an off-site facility, which requires on-site supervision by TWDB staff.

In 2019, several TWDB staff members in multiple business areas began researching options for electronically storing the agency's documents, with a further goal of eliminating paper processes entirely going forward. Implementation of an enterprise content management system that best suits our needs will expedite the conversion of approximately 15 million hard copy paper documents to digital format. The system will also assist with records retention management by identifying documents nearing the end of their retention cycle and flagging them for business user review and eventual disposition once their retention period expires.

K. Overall, how does the agency measure its effectiveness in carrying out its objectives?

Prior to the 87th Regular Legislative Session, TWDB staff conducted a sweeping and critical review of all agency performance measures. Staff developed a proposal for substantial changes designed to improve the clarity and uniformity of measure names and definitions, to update key measures to reflect current agency directives, and to begin tracking progress related to new flood initiatives resulting from the 86th Legislative Session. The Governor's Office of Budget and Policy and the Legislative Budget Board (LBB) reviewed this request and approved most of the suggested updates. The TWDB looks forward to the use of these measures in the coming years to better gage our success in carrying out the agency's objectives.

In addition to the performance measures that are regularly reported to the LBB (Exhibit 2), the TWDB uses other quantitative and qualitative methods to monitor and measure our effectiveness. Some of these are highlighted below as well as in VII. Guide to Agency Programs.

Financial Assistance Provided to Texas Communities

The founding objective of the TWDB is to provide financial assistance, and the agency strategically administers its suite of financial assistance programs to maximize the benefits to Texas communities. Each program is designed for specific uses by particular entities and has varying availability of funds. To the extent allowed by state and federal laws and regulations, the TWDB's governing Board makes adjustments in intended use plans and program structures so that the programs can adapt to meet evolving needs over time and work together in a complimentary fashion. Examples of these strategic adjustments can be found in the V. Policymaking Structure for the SWIFT program and in VII. Guide to Programs, Water Supply and Infrastructure, Program Administration and Reporting for the SRFs.

In addition to the performance measures reported regularly to the LBB, the agency tallies the total number of financial assistance commitments through each program along with associated dollar amounts on an ongoing basis (these are now available on the Financial Assistance Project Details interactive dashboard). From the agency's first loan commitment to build the White River Reservoir in 1958 through May 31, 2021, the TWDB has made more than 5,580 financial commitments for a total of approximately $31.9 billion. Projects have spanned the state, from El Paso to Beaumont and Dalhart to Brownsville, providing grants and loans for communities of all sizes to meet their water needs and comply with state and federal regulatory requirements.

These financial assistance commitments include

- through EDAP, approximately $511 million for 160 projects that provide basic essential water and wastewater service;
- through SWIFT, almost $9 billion to implement 54 state water plan projects that will meet the water supply needs for Texans during droughts;
- through the CWSRF, over $11 billion for 1,167 wastewater, stormwater, reuse, and other pollution control projects;

- through the DWSRF, over $3.6 billion for 740 projects that provide safe drinking water for Texans;
- through multiple programs, over $1.2 billion for 408 projects that serve rural communities with a population of 10,000 or less (dating back to 2004, when this metric was first recorded).

Additionally, the TWDB has been selected to receive over $400 million in federal funds through the federal Flood Mitigation Assistance program to implement cost-effective measures to reduce or eliminate the long-term risk of flood damage to structures insurable under the NFIP.

The SWIFT program, created by the legislature in 2013, has played a key role in funding 54 recommended projects from the state water plan, ranging in size from individual wells to new major reservoirs. The program provided funding for various phases—from initial planning to construction—of strategies representing both local and regional approaches to long-term water supply. These strategies are associated with 38 individual political subdivisions of the state and are anticipated to result in over 1.5 million acre-feet per year in additional water supply. The SWIFT program has exceeded funding goals set for its first decade and has been successful in reaching financial transaction goals with each State Water Implementation Revenue Fund for Texas (SWIRFT) revenue bond sale. The SWIRFT has received the highest AAA/AAA bond ratings for all issuances to date, maximizing potential savings to program participants and the communities they serve. Since the program's inception, it is estimated that by using the SWIFT program, participants could realize debt service savings of more than $1.1 billion over the life of their current obligations, compared to unsubsidized market-rate transactions.

The TWDB's most recently created financial assistance program, FIF, received more the 280 abridged applications requesting more than $2 billion in grants and loans during its inaugural round. The TWDB, through August 2021, has committed $323 million for FIF financial assistance for 121 projects that include early warning systems, watershed studies, match for federal programs, and a range of flood control and mitigation projects.

Debt Management for the State of Texas

The TWDB issues general obligation as well as revenue bonds to provide favorable financing to local governmental entities for eligible infrastructure projects. The TWDB adheres to a formal Debt Management Policy to assist in minimizing debt service requirements and costs of issuance, maintaining the highest possible credit ratings, and complete financial disclosure and reporting. The policy is reviewed annually to ensure its applicability and to provide required amendments and adopted by Board action.

Nationally recognized credit rating agencies, Fitch Ratings and S&P Global Ratings, have consistently acknowledged the TWDB's active management when assigning the top ratings (AAA) to the SWIRFT and SRF revenue bond programs. General obligation bonds issued by the TWDB have received the state's credit rating of AAA (rating reports are available upon request).

In addition to achieving lower interest rates on new debt issuance through maintaining the highest credit ratings, the TWDB seeks to reduce outstanding debt costs by refinancing, or

"refunding" bonds for savings, as well as early repayment through redemptions and defeasances. Since FY 2016, the TWDB has refunded 12 separate series of bonds to achieve net present value savings of nearly $83 million, of which approximately $10 million was for EDAP, a General Revenue supported program.

It is noteworthy that while the TWDB actively manages its outstanding debt by refunding bonds for savings as described above, borrowers can also achieve their own debt service savings by issuing new debt to refund outstanding debt held by the TWDB. Over the last several years and due to historically low market rates, borrowers in the TWDB's financial assistance programs have steadily refunded debt held by the TWDB, generating "prepayments" that must be disposed of efficiently by the agency. Most prepayments received are used to originate new loans, which then reduces the need to incur additional debt. However, the TWDB has frequently utilized prepayments to redeem or defease outstanding bonds if the funds are not needed for new loans or to pay scheduled debt service. In several instances, program equity has also been used in conjunction with prepayments to early redeem or defease bonds. Since FY 2016, the TWDB has completed 36 early redemptions or defeasances, resulting in nominal interest savings of over $393 million.

Public Engagement

The TWDB regularly engages stakeholders for a variety of purposes, and we often use the extent of public engagement in our programs as a means of gauging our effectiveness as an agency. Of particular note was the level of public participation in implementing the new flood programs passed by the legislature in 2019. Public input played a fundamental role in every step of implementation of the newly created FIF and regional flood planning programs. We engaged in extensive outreach and relied on multiple forms of stakeholder involvement and input in developing the FIF administrative rules and Flood Intended Use Plan as well as state flood planning guidance principles, the regional and state flood planning rules, delineating regional flood planning area boundaries, and populating the initial regional flood planning groups.

Prior to formal rulemaking activities, the TWDB went on a "listening tour" in the summer of 2019, conducting in-person workshops in 14 cities across Texas as well as two webinars. Over 1,000 attendees actively participated in the workshops and webinars, which included formal and informal discussions and interactive polling. These interactions gave us valuable initial input into how the TWDB should undertake our new responsibilities and best serve the needs of communities. In addition to the workshops and webinars, the TWDB accepted informal written public comments prior to formal rulemaking for both the FIF and flood planning programs.

The regional flood planning rulemaking, including over 200 pages of written public comments from 45 entities, was the largest and most involved agency rulemaking since rules were developed to implement the regional water planning process under SB 1, 75th Legislative Session.

In fulfilling the TWDB's responsibility to assemble the initial regional flood planning groups, the agency engaged in extensive outreach including via traditional news media and social media and ultimately received over 600 nominations during the membership nomination period. Once

the Board-approved members were notified, the TWDB provided orientation webinars and then began convening the 15 inaugural planning group meetings in October 2020, less than 18 months after SB 8, 86th Legislative Session, was signed into law.

Core Values

In recognition that employees are the TWDB's greatest assets, the agency's Executive Administrator in the past several years has pursued several initiatives to promote employee engagement, wellness, and work/life balance. In addition to our mission statement, the TWDB developed four core values to convey our identity as an agency:

> ***Innovation:*** We value innovation, whether it is in delivering new services to citizens or developing new or modified ways to be more efficient at work. We strive to go to the next level and not settle for the way things have always been done.
>
> ***Impact:*** We want to make a positive, ethical difference in our lives and in the lives of those we serve. We want our work to improve everyone's lives and well-being.
>
> ***Pride in Public Service:*** We value public service as a noble profession and work honorably and with dedication. We are proud to say we work for the State of Texas and every one of its citizens.
>
> ***Accountability:*** We value holding ourselves to ambitious and objective standards and are willing to take responsibility for our own actions and encourage the same of our co-workers.

In response to the COVID-19 pandemic, in mid-March 2020 the TWDB quickly moved to agencywide teleworking, with the exception of a few essential employees that continued to work on-site. This effort was largely successful, with employees taking on the challenge of transitioning previously paper-based processes to electronic processes virtually overnight. The agency's Information Technology and Human Resources teams provided full support to sustain continuous agency operations, and the majority of the agency's employees were able to work from home while balancing personal and family responsibilities.

To assess the communication and collaboration impacts of the telework experience, the agency conducted a brief employee survey in late May 2020. Results were largely positive, with 90 percent of respondents agreeing that they have felt genuinely appreciated; teams and departments are working well together; the agency supports social interaction for those working remotely; and they are receiving sufficient communication from leadership. Strikingly, more than 90 percent of respondents agreed that the agency has lived the TWDB's core values—innovation, impact, pride in public service, and accountability—during the pandemic.

Innovation

As a core value of the TWDB, the development of innovative solutions to the state's water problems is of high importance, and staff's efforts to advance innovation is regularly recognized. The following items describe several innovative achievements on this front in recent years.

Within the last five years, the TWDB's Water Supply Planning has led the development and deployment of a variety of data gathering and presenting applications including the following:

- A Public Water System Boundary Viewer launched with the opening of the 2018 Water Use Survey. This application provides, and helps to maintain via stakeholder input, the best available service area information to more accurately project utility-based populations and water demands for the state's water planning. The viewer facilitates the reporting of agency-developed data for utilities to better assist our customers pursuing TWDB financial assistance programs.

- A data dashboard that combines displays of both historical water use and the TWDB-generated water demand projections, by sector and region. The dashboard has improved stakeholder access to and understanding of the state water planning process and the regional water planning projection review and revision processes.

- A "StoryMap" that displays water needs and surplus data to facilitate coordination between regional water planning groups to better identify potential regional projects during development of plans.

- A socioeconomic impact analyses data dashboard developed to help planning group members and the public consume and explore the results more easily and earlier in the planning cycle.

- An interactive regional plan application, based on the interactive state plan framework, that displays the draft regional water planning data. This was provided prior to draft regional plans becoming available to greatly simplify the TWDB review of the documents during the public comment period and to provide a powerful tool for regional planning groups to communicate their plans to stakeholders.

- An "interactive state water plan" application that is map-driven and supported by tables and other figures to allow stakeholders to explore and take an up-close look at data thematically and at discrete levels not found in the electronic and bound versions of the plan. Data is all downloadable and is presented in geographical and tabular forms with clickable links to help users navigate the map and data presentations. The site allows users, for example, to view water sources that a particular water user group relies on today for existing water supplies or to discover what recommended strategies and water sources it will depend on in the future.

Program Administration and Reporting and Finance have created and implemented two new programs to assist our financial assistance customers:

- The Asset Management Program for Small Systems ("AMPSS") assists smaller water and wastewater utilities in creating a plan for managing their systems in a financially and technically sustainable manner by delivering management tools developed by the Texas Commission on Environmental Quality (TCEQ). This program helps smaller water and wastewater utilities to proactively, rather than reactively, manage their systems. The

TWDB directly contracts with qualified consultants who then evaluate existing water and wastewater systems and work with these smaller entities to create an asset management plan in accordance with the guidelines created by TCEQ's Small Business and Governmental Assistance Section. This plan will become the basis for planning for system sustainability by identifying replacement dates and estimated costs, developing best practices for operation and maintenance, and developing financial plans for obtaining funding for future needs. The system receives an Asset Management Plan, System Operations and Maintenance Manual, training for system management and staff, and a compliance manual. The funding for this program is limited to entities in the federally funded Clean and Drinking Water SRF programs.

- The "CFO To Go" program uses origination fees collected under the Clean and Drinking Water SRF programs to contract with Certified Public Accountants (CPAs) to provide free technical assistance services to designated recipients of TWDB funding under the SRF programs. The TWDB selects recipients determined to be in need of special assistance from a CPA to maintain adequate compliance with the requirements of the SRF programs. The contracted CPA evaluates regulatory and financial assistance covenant compliance procedures for designated recipients and provides guidance on the design and implementation of internal control procedures, preparing financial reports and more. The funding for this program is limited to entities in the federally funded SRF programs. Other non-federally funded entities in the TWDB portfolio could benefit from a similar program, but the agency does not currently have funding to provide this service.

Given the vast expanse of Texas and the diversity of water resources within the state, the TWDB has almost unlimited opportunities to initiate and expand data collection programs to assist the state to better manage water resources. Examples of current opportunities to expand data collection that we are pursuing include the below:

- Surface water/groundwater interaction studies: Historically, Texas has managed surface water and groundwater resources separately. Few data sets are available to describe the connections between these resources and those are only available in specific areas of the state. Along with key stakeholders, the TWDB's Groundwater and Surface Water divisions are initiating a study of surface water/groundwater interactions along the South Llano River.

- Reservoir evaporation datasets: Reservoir evaporation data is an important measure for understanding loss in water supply. However, the dataset that the agency currently compiles and disseminates is sparse. The Water Availability program has launched an effort to improve the accuracy and spatial resolution of the reservoir evaporation dataset by deploying state-of-the-art equipment for on-water monitoring of reservoir evaporation and developing a high resolution gridded and daily reservoir evaporation dataset that incorporates remotely sensed data and water temperature data. Both ventures are firsts of their kind in Texas and have resulted from staff's innovative efforts to secure external funding and harness technical collaboration.

Top Workplace Survey

The TWDB has participated in the *Austin American-Statesman's* annual Top Workplaces employee engagement survey conducted by Energage since 2017 and has been recognized four consecutive years as a Top Workplace in the mid-size employer category. The Top Workplace program recognizes companies in the greater Austin area where employees are valued, heard, and aligned with the company's vision. This anonymous and voluntary survey of employees measures three high-level constructs: culture drivers, the basics, and business outcomes. The TWDB utilizes survey results to implement department and agency-level action plans to address opportunities for development.

Water Data for Texas Website

The agency is particularly proud of its web platforms, many of which are ancillary sites that have been developed outside of the agency's primary web platform to better suit the needs of users. Water Data for Texas, the TWDB's most comprehensive site for water data and information on conditions across the state, includes

- reservoir storage conditions and reservoirs in flood stage,
- a drought dashboard,
- automated groundwater well levels,
- continuous bay and estuary water quality monitoring and freshwater inflow information, and
- lake evaporation and precipitation data.

Developed in 2012 and regularly expanded since, the site received over 2 million pageviews by nearly 490,000 unique users in FY 2020.

In the following chart, provide information regarding your agency's key performance measures, including outcome, input, efficiency, and explanatory measures. Please provide both key and non-key performance measures set by the Legislative Budget Board as well as any other performance measures or indicators tracked by the agency. Also, please provide information regarding the methodology used to collect and report the data.

As noted previously, the TWDB implemented a significant update to its performance measures for the FY 2022–23 biennium. Performance measures are included for FY 2020, as requested, but note that the FY 2022–23 measures will look significantly different. See also Attachments 19a and 19b for quarterly performance reports completed by the agency in FY 2019–20 and Attachments 21a through 21i for performance reports submitted to the LBB from FY 2018–20.

TWDB
Exhibit 2: Key Performance Measures — Fiscal Year 2020

Key Performance Measures	FY 2020 Target	FY 2020 Actual Performance	FY 2020 Percent of Annual Target
Percent of information available to adequately monitor the state's water supplies.	67%	63.44%	95.11%
Number of bay, estuary, and instream study elements completed.	10.4	10.25	98.56%
Number of responses to requests for TNRIS-related information that are filled.	150,000	183,186	122.12%
Percent of key regional and statewide water planning activities completed.	100%	100%	100.00%
Number of responses to requests for water resources information that are filled.	2,041	1,329	65.12%
Percent of communities receiving technical and/or financial assistance.	8.70%	16.30%	187.36%
Number of responses to requests for water conservation information, data, technical assistance, and educational activities provided by TWDB staff.	849	1,206	142.05%
Number of state participation projects receiving financial assistance.	1	0	0.00%
Total dollars committed to projects to implement the State Water Plan.	$750,000,000.00	$1,075,431,373.00	143.39%
Number of commitments to state water plan projects.	40	40	100.00%
Number of communities with active financial assistance agreements.	500	550	110.00%
Sum of project costs receiving SWIFT program funding commitments.	$800,000,000.00	$785,575,000.00	98.20%
Number of completed Economically Distressed Areas Program projects.	160	160	100.00%

L. Please list all key datasets your agency maintains and briefly explain why the agency collects them and what the data is used for. Is the agency required by any other state or federal law to collect or maintain these datasets? Please note any "high-value data" the agency collects as defined by Texas Government Code, Section 2054.1265. In addition, please note whether your agency posts those high-value datasets on publicly available websites as required by statute, and in what format.

See Exhibit 3, which is included as an attachment.

III. History and Major Events

Provide a timeline of your agency's history and key events, including

- **the date your agency was established;**
- **the original purpose and responsibilities of your agency; and**
- **major changes in responsibilities or statutory authority.**

Also consider including the following information if beneficial to understanding your agency

- **changes to your policymaking body's name or composition;**
- **significant changes in state/federal legislation, mandates, or funding;**
- **significant state/federal litigation that specifically affects your agency's operations; and**
- **key changes in your agency's organization (e.g., the major reorganization of the Health and Human Services Commission and the Department of State Health Services' divisions and program areas, or the Legislature moving the Prescription Monitoring Program from the Department of Public Safety to the Texas State Board of Pharmacy).**

1904

A constitutional amendment was adopted authorizing the first public development of water resources.

1913

The 33rd Legislature created the Board of Water Engineers to regulate appropriations of water.

1950s

Texas suffered the most severe drought in the state's history. This drought represents the driest seven-year period in the state's history and is still considered Texas' statewide "drought of record" upon which most water supply planning in the state is based.

1957

The First Called Session of the 55th Legislature passed the Texas Water Planning Act of 1957, creating a Water Resources Planning Division within the State Board of Water Engineers responsible for water resources planning on a statewide basis.

The TWDB was created by legislative act and constitutional amendment. The constitutional amendment, approved by Texas voters, authorized the TWDB to issue $200 million in State of Texas General Obligation Water Development Bonds for the conservation and development of Texas' water resources through loans to political subdivisions.

1961

The Texas Board of Water Engineers published the first comprehensive state water plan, entitled "A Plan for Meeting the 1980 Water Requirements of Texas."

1962

The Board of Water Engineers was reorganized, renamed the Texas Water Commission, and given specific responsibilities for water planning by the 57th Legislature.

1965

The Texas Legislature restructured the state water agencies, transferring water resource planning functions to the TWDB (following this transfer, the TWDB developed and adopted state water plans in 1968, 1984, 1990, and 1992 prior to the initiation of the regional water planning process by the 75th Legislature in 1997).

The legislature renamed the Texas Water Commission to the Texas Water Rights Commission.

1972

TNRIS was created, succeeding the Texas Water-Oriented Data Bank, and incorporated a centralized repository and clearinghouse of maps, census information, and water-related information.

1977

The three water agencies existing at the time, the TWDB, the Texas Water Rights Commission, and the Water Quality Board, were combined by the Texas Legislature, creating the Texas Department of Water Resources. This new single agency was responsible for developing Texas' water resources, maintaining the quality of water, and ensuring equitable distribution of water rights.

1985

Sunset legislation reorganized the Texas Department of Water Resources, splitting the agency into two separate agencies, the Texas Water Commission and the TWDB. The TWDB was made responsible for long-range planning and water project financing.

1987

Congress established the Clean Water State Revolving Fund (CWSRF) through the Clean Water Act Amendments of 1897, creating a permanent, state-administered financial assistance program for water pollution abatement projects.

1989

The 71st Legislature and voters of the state passed comprehensive legislation and constitutional amendments establishing the Economically Distressed Areas Program (EDAP), to be administered by the TWDB.

1996

Congress established the Drinking Water State Revolving Fund (DWSRF) through the Safe Drinking Water Act Amendments of 1996, creating a state-administered financial assistance program for drinking water infrastructure projects.

1997

The 1997 State Water Plan was adopted as a consensus effort by the TWDB, the Texas Parks and Wildlife Department (TPWD) and the Texas Natural Resource Conservation Commission (now the TCEQ).

The 75th Legislature passed SB 1, changing the water planning process in Texas. SB 1 charged local entities with preparing regional water plans every five years and charged the TWDB with incorporating these plans into a comprehensive state water plan. SB 1 also created the Texas Strategic Mapping Program charged with developing statewide digital basemap data.

2001

The 2002 State Water Plan was adopted, the first since the passage of SB 1 by the 1997 Texas Legislature.

The 77th Legislature passed SB 2, which added requirements to the TWDB's technical data collection and groundwater modeling programs. SB 2 also created two new funding programs to be administered by the TWDB: the WIF and the RWAF.

2005

The EDAP was changed from a border initiative to a statewide program.

The Legislature passed HB 1763, which required groundwater conservation districts (GCDs) within groundwater management areas to establish desired future conditions (DFCs) of their relevant aquifers.

2007

The TWDB adopted the 2007 State Water Plan.

The 80th Legislature passed SB 3, which included a number of historic actions such as unique reservoir site designation; a new approach to meeting environmental flows needs involving an advisory committee and stakeholder committees supported by science teams; and creation of the Water Conservation Advisory Council.

The NFIP was transferred from the TCEQ to the TWDB.

2009

Congress passed the economic stimulus package titled the American Recovery and Reinvestment Act (ARRA) of 2009. EPA awarded over $160 million in ARRA funds to the TWDB to help state and local governments finance improvements to water projects. EPA also awarded over $179 million in ARRA funds to the TWDB to help state and local governments finance improvement to wastewater projects.

2011

The Sunset Advisory Commission's review of the TWDB passed under SB 660 (82nd Regular Legislative Session). Provisions in the review included the elevation of the director of TNRIS to the position of GIO for the state.

Senate Joint Resolution (SJR) 4 was passed by the legislature and approved by voters as a constitutional amendment (Proposition 2). Proposition 2 authorized $6 billion in bonds as general obligation bonds on a continuous revolving basis. The TWDB now has the authority to issue bonds without repeated and costly constitutional amendments.

2012

The TWDB adopted the 2012 State Water Plan.

2013

The 83rd Texas Legislature passed HB 4 and SJR 1 providing for the creation of the State Water Implementation Fund for Texas (SWIFT) and the State Water Implementation Revenue Fund for Texas (SWIRFT) to implement water supply projects recommended in the state water plan. In addition, HB 1025 authorized a one-time, $2 billion supplemental appropriation from the state’s Economic Stabilization Fund (also known as the Rainy Day Fund) to the SWIFT, contingent on enacting HB 4 and passing and adopting SJR 1 through voter approval.

Proposition 6 passed on November 5, 2013, with more than 70 percent of voters in favor. HB 4 also created a legislative advisory committee to oversee the SWIFT and SWIRFT.

As part of the structural changes in HB 4, the governance of the TWDB was changed from a part-time, six-member Board to a full-time, three-member Board appointed by the Governor. The agency also underwent an extensive reorganization of its financial assistance and planning program areas, with a newly created Regional Water Project Development division organized into interdisciplinary teams by geographic region.

2015

The TWDB sold its first SWIRFT revenue bonds in support of the SWIFT program. In this transaction and all subsequent transactions to date, the SWIRFT has achieved the highest AAA/ AAA bond ratings, maximizing savings to program participants and the communities they serve.

2016

The TWDB adopted the 2017 State Water Plan, which launched a new era in water planning by providing online data as an integral part of the plan. The combined information of the interactive website and the plan give Texans more in-depth information about water planning than ever before.

2017

In response to Hurricane Harvey, the TWDB created the Emergency Relief funding option in the CWSRF program with principal forgiveness and zero percent loans. In the DWSRF program, the agency increased the amount of principal forgiveness and zero percent loan funds available in the Urgent Need funding option to assist with disaster recovery.

2018

The TWDB published the first State Flood Assessment just prior to the 86th Legislative Session, providing an assessment of Texas' flood risks, an overview of roles and responsibilities, an estimate of flood mitigation costs, and a synopsis of stakeholder views on the future of flood planning.

The TWDB established a special disadvantaged small and rural funding option in the SRFs with principal forgiveness and zero interest loan funding to assist small and rural projects. The agency also increased the amount available under the DWSRF program's "Very Small Systems" funding option and set aside a portion of the program's Urgent Need funds for disadvantaged, small, and rural projects.

The TWDB identified the need to leverage its DWSRF program for the first time as a result of increased demand for financing combined with demonstrated financial strength, stability, and program maturity. By creating one new indenture, the TWDB sold its first series of bonds from which proceeds were deposited into both the Clean Water and Drinking Water SRF programs with AAA rated bonds. In addition to being a marked a milestone for the DWSRF program, the TWDB achieved pricing efficiencies with lower costs of issuance.

2019

The 86th Texas Legislature greatly expanded the TWDB's role in flood planning and financing by authorizing the TWDB to administer a new a state and regional flood planning process with flood planning regions based on river basins with the passage of SB 8. The first regional flood plans will be due in 2023, and the first state flood plan will be due September 1, 2024. With the passage of SB 7 and House Joint Resolution (HJR) 4, the legislature made a voter-approved one-time transfer of $793 million from the Economic Stabilization Fund to create the FIF program, to be administered by the TWDB.

The legislature also created the TIRF via SB 7 and appropriated funding to two of its accounts: the Floodplain Management Account, to support TWDB's flood science and planning efforts, and the Hurricane Harvey Account, to provide nonfederal matching funds to enable local governments to participate in federal disaster recovery and mitigation programs administered by TDEM. The legislature also created a special advisory committee to oversee the TIRF.

The TWDB implemented an Asset Management Program for Small Systems initiative to assist small water and wastewater utilities in creating an asset management plan for managing their systems in a financially and technically sustainable manner.

2020

The TWDB implemented a "CFO to Go" initiative where the TWDB contracts with Certified Public Accountants (CPAs) to provide technical assistance services to designated SRF recipients. The TWDB selects recipients determined to be in need of special assistance from a CPA to maintain adequate compliance with the requirements of the SRF programs. The agency also Implemented a new initiative in the DWSRF program called "Securing Safe Water" that involves a comprehensive outreach, technical assistance, and funding strategy to reduce the number of public water systems that have unresolved health issues.

In June 2020, a Montgomery County District Court ruled governmental immunity barred the San Jacinto River Authority (SJRA), a regional water provider, from suing the cities of Conroe and Magnolia under Groundwater Reduction Plan contracts. Through these contracts the cities had agreed to pay treated surface water fees and pumpage fees owed by SJRA for any groundwater they produced. The case is important to the TWDB because revenues from the Groundwater Reduction Plan contracts are pledged to and provide the source of repayment for SJRA bonds that the TWDB owns. The district court's decision is currently being appealed to the 9th Court of Appeals in Beaumont, Texas. [Quadvest LLP, et. al,. vs. San Jacinto River Authority

vs. City of Conroe, et. al., Cause No. 19-09-12611, 284th Judicial District, Montgomery County, Texas; Appeal No. 00-20-00180-CV, 9th Court of Appeals, Beaumont, Texas]

2021

The TWDB adopted the 2022 State Water Plan.

IV. Policymaking Structure

A. Complete the following chart providing information on your policymaking body members.

TWDB
Exhibit 4: Policymaking Body

Member Name	**Term / Appointment Dates / Appointed by** *(e.g., Governor, Lt. Governor, Speaker)*	**Qualification** *(e.g., public member, industry representative)*	**City**
Brooke Paup	Chairwoman; appointed by governor for a term ending Feb. 1, 2025	Law member	Austin
Kathleen Jackson	Board Member; appointed by governor for to a term ending Feb. 1, 2023	Engineer member	Beaumont
Vacant		Finance member	

B. Describe the primary role and responsibilities of your policymaking body.

Subsequent to the TWDB's last Sunset review in the 2010 to 2011 review cycle, the agency underwent a pivotal shift in governance when the 83rd Texas Legislature converted the longstanding six-member, part-time Board to a three-member, full-time Board. This transition was made to ensure active management of the newly created SWIFT program, and it also allowed Board members more time and resources to conduct stakeholder outreach activities in support of the TWDB's mission. These activities include speaking and conference engagements; meetings with financial assistance customers; project kickoff events; visits to TWDB-funded projects and data collection and monitoring sites; and many other day-to-day customer interactions. Other general and specific Board responsibilities and delegations are described below.

General Responsibilities

As provided in Texas Water Code Ch. 6, the TWDB's governing Board is the state agency primarily responsible for water planning and for administering water financing for the state, with general jurisdiction over:

- the development and implementation of a statewide water plan;
- the administration of the state's various water assistance and financing programs, including those created by the constitution;
- the administration of the NFIP; and
- other areas specifically assigned to the Board by this code or other law.

As part of the state's biennial strategic planning process as directed by the LBB and the governor's office, each even numbered year the Board is responsible for adopting the agency's strategic plan, which identifies a strategic vision, agency goals, and action items to achieve those goals for the following five fiscal years. Also, in even numbered years prior to the legislative session, the Board is responsible for approving budget recommendations in the agency's biennial legislative appropriations request and adopting a "Legislative Priorities" report that includes an update on agency activities and recommendations for necessary and desirable legislation.

The Board oversees the operations of the TWDB's Internal Audit division, which reports directly to the Board. Other responsibilities of the Board include but are not limited to

- approval of an annual audit plan;
- rulemaking;
- approval of contracts over $250,000;
- approval of all commitments for financial assistance;
- approval of financial assistance program intended use plans (SRFs and FIF) and structure and prioritization of the SWIFT and EDAP programs;
- designation of regional water planning areas and regional flood planning areas;
- approval of regional water plans and regional flood plans;
- adoption of the state water plan and state flood plan;
- designation of major and minor aquifer boundaries;
- designation of river basins and watersheds;
- approval of groundwater management area boundaries;
- approval of the Hydrographic Survey program rate structure and fee schedule;
- establishment of water loss thresholds for applications for financial assistance;
- approval of appointments to the Water Conservation Advisory Council;
- designation of Brackish Groundwater Production Zones and associated available production volumes;
- consideration of appeals on GCD management plans that are incomplete and not approved by the Executive Administrator;
- approval of investment, underwriter, and debt management policies;
- selection of underwriters; and

- approval of financial transactions.

Role in Regional and State Water Supply Planning

Formal adoption of the state water plan every five years is a key Board responsibility. In addition to adoption of rules that govern the planning process, the Board is responsible for reviewing the regional water planning areas boundaries at least every five years. The areas, and the initial planning groups, were originally designated and approved by the Board at the inception of the planning process (see Section VIII. Water Supply and Infrastructure, Water Supply Planning).

As Texas' guide to water policy, the state water plan includes legislative recommendations that the Board believes are needed and desirable to facilitate more voluntary water transfers. The plan must also identify river and stream segments of unique ecological value and sites of unique value for the construction of reservoirs that the Board recommends for protection.

The state water plan is based on regional water plans that are adopted by each of the 16 regional water planning groups; the regional plans are also approved by the Board. Prior to approval of the regional water plans, the Board is responsible for adoption of the population and water demand projections that are used in their development. Prior to submittal of the draft regional water plans to the TWDB for review, the planning groups must notify the TWDB of any potential "interregional conflicts," which are water management strategies recommended by more than one group that may result in an over-allocation of a water source or strategies proposed to be supplied from a different regional water planning area where there is the potential for substantial adverse effect to the supplying area. If such a conflict exists, the Board must facilitate coordination between the affected planning regions; if the conflict is not resolved through negotiations, the Board must resolve the conflict.

The newly created regional flood planning process includes a number of similar Board responsibilities, such as designating planning areas, approving plans, adoption of the state flood plan, and others (see Section VII. Water Supply and Infrastructure, Flood Planning).

SWIFT Program Management

As mentioned previously, the Board considers active management of the SWIFT program one of its most important obligations to the state of Texas. Made possible by a $2 billion transfer from the Economic Stabilization Fund after voter approval in 2013, the program is designed to implement projects in the state water plan so that Texans have adequate water supplies in times of drought. Because funds are transferred out of SWIFT to create assistance accounts for each transaction, the balance of the SWIFT fund declines each time a SWIRFT bond transaction occurs; however, the balance can be replenished as investment income is realized. The TWDB and the Texas Treasury Safekeeping Trust Company—the entity charged with managing and investing the fund— manage their respective responsibilities to ensure that the program can provide the necessary financial assistance over the long term.

Because of the 50-year planning horizon and numerous variables that impact the program, the SWIFT program continues to evolve over time. Flexibility embedded in the structure of the program, as well as management by the TWDB's full-time Board, allows the TWDB to identify and implement any needed changed to ensure its long-term success. Each funding cycle, the Board approves the structure of the program; over the last several years, active management of the SWIFT program by the Board has resulted in

- adjustments to the length of the period of subsidy "lock in" and closing requirements for multi-year commitments to protect future funding capacity,
- additional interest rate subsidization for certain qualifying rural municipal providers and agricultural projects to better support and incentivize those projects, and
- adoption of Board resolution that established parameters for future management of the program in response to the COVID-19 pandemic

Delegations of Authority

The Board is directed by statute to develop and implement policies that clearly separate the policy-making responsibilities of the Board from the management responsibilities of the Executive Administrator and agency staff. In doing so, the Board has delegated several functions to the Executive Administrator, including the development and implementation of policies and procedures that govern the management and organization of the agency; managing the fiscal affairs of the agency; maintaining complaint files and procedures; the purchase of promotional items; the negotiation and execution of certain contracts including payable contracts in the amount of $250,000 or less; conducting technical studies and providing technical assistance; preparing and submitting all statutorily required legislative reports; making recommendations on rules or actions; and reporting to the Bond Review Board on performance of loans.

C. How is the chair selected?

The chair is appointed by the governor and confirmed by the Senate.

D. List any special circumstances or unique features about your policymaking body or its responsibilities.

Board members are full-time agency employees. As required by statute, one member must have experience in the field of engineering, one member must have experience in the field of public or private finance, and one member must have experience in the field of law or business.

E. In general, how often does your policymaking body meet? How many times did it meet in FY 2019? In FY 2020? Explain if the policymaking body met in-person or virtually during this time.

The Board meets regularly, typically once or twice per month, to consider and act on items that are within its jurisdiction. In addition, the Board meets regularly in work sessions in which no action is typically required. The total number of Board meetings and work sessions held by fiscal year are: 21 work sessions and 20 Board meetings in FY 2019; 31 work sessions and 18 Board meetings in FY 2020; and 15 work sessions and 14 Board meetings in FY 2021. Both regular Board meetings and work sessions have been conducted virtually since the governor's COVID-19 disaster declaration has been in effect. In-person Board meetings and work sessions resumed in June and July 2021, respectively.

F. Please list or discuss all the training the members of the agency's policymaking body receive. How often do members receive this training?

Under state law, Board members may not participate in meetings of the Board until they complete a training program that covers: (1) the legislation that created the Board; (2) the programs operated by the Board; (3) the role and functions of the Board; (4) the rules of the Board, with an emphasis on the rules that relate to disciplinary and investigatory authority; (5) the current budget for the Board; (6) the results of the most recent formal audit of the Board; (7) the requirements of the open meetings, public information, administrative procedure law, other laws relating to public officials; and (8) applicable ethics policies adopted by the Board or the Texas Ethics Commission.

Board members must complete the training required by the Open Meetings Act (Texas Government Code § 551.005) and Public Information Act (Texas Government Code § 552.012) within 90 days of taking office. Board members are also required by the Public Funds Investment Act to complete an investment training session within six months of their appointment to office (Texas Government Code § 2256.007).

G. What information is regularly presented to your policymaking body to keep them informed about the agency's operations and performance?

Information presented to the Board to keep them informed is provided in a several regular formats:

- The Executive Administrator updates on agency activities and financial programs as well as Deputy Executive Administrator updates occur periodically at Board work sessions and individual one-on-one meetings.
- The Board receives quarterly reports on Texas water conditions from Water Science and Conservation.
- The Board receives quarterly reports on gifts and donations from the Office of General Counsel.
- The Board receives quarterly update reports of amendments, change orders and contracts subject to contract monitoring from Finance; the Board also receives Quarterly Investment Reports from Finance.
- The Board receives quarterly reports on the status of internal audit and external oversight activities from the Internal Audit division.

H. How does your policymaking body obtain input from the public regarding issues under the agency's jurisdiction? How is this input incorporated into the operations of your agency?

The Board receives comments from the public at its regular Board meetings and work sessions. Comments may be offered on specific items or during the designated time for public comment. The Board also receives comments from the public in connection with its rulemakings.

Statutory provisions regarding water planning (Texas Water Code §§ 16.051 and 16.053) require public input that is presented to the Board for its consideration. Intended use plans are also frequently made available for public comment before they are submitted to the Board to be considered for adoption.

The Board also receives correspondence from members of the public and may meet with members of the public at its offices and or informally on other occasions. Governmental Relations monitors meetings at the Texas Capitol that may include input from members of the public.

I. If your policymaking body uses subcommittees or advisory committees to carry out its duties, fill in the following chart. For advisory committees, please note the date of creation for the committee, as well as the abolishment date as required by Texas Government Code, Section 2110.008.

In addition, please attach a copy of any reports filed by your agency under Texas Government Code, Section 2110.007 regarding an assessment of your advisory committees as Attachment 28.

Exhibit 5, Subcommittees and Advisory Committees, is not applicable since the agency does not use any subcommittees or advisory committees created under Chapter 2110, Government Code.

V. Funding

A. Provide a brief description of your agency's funding, including information about the most recent five percent budget reduction and any funding related to disaster relief or COVID-19, if applicable.

The TWDB has a biennial appropriated budget of approximately $493 million for FY 2022–23. The primary funding sources for the budget are General Revenue (24 percent), Federal Funds (19 percent), TIRF (26 percent), and WIF (25 percent). For Operations (i.e., without debt service), the percentages are GR (22 percent), Federal Funds (31 percent) and TIRF (41 percent). See below.

	All Strategies				Operations	
Method of Finance	**2022**	**2023**	**Biennium**	**Percent**	**Biennial Amount w/o Debt Service**	**Percent**
General Revenue	$63,637,361	$56,904,057	$120,541,418	24.4%	$68,075,089	21.8%
Federal Funds	$47,652,930	$47,652,930	$95,305,860	19.3%	$95,305,860	30.6%
TIRF	$73,538,174	$52,756,000	$126,294,174	25.6%	$126,294,174	40.5%
FIF	$2,526,340	$2,526,340	$5,052,680	1.0%	$5,052,680	1.6%
RWAF	$4,921,000	$4,921,000	$9,842,000	2.0%	$9,842,000	3.2%
WIF	$62,507,274	$62,779,912	$125,287,186	25.4%	$0	0.0%
EDAP	$1,311,222	$1,409,458	$2,720,680	0.6%	$0	0.0%
Ag Water Conservation Fund	$1,200,000	$1,200,000	$2,400,000	0.5%	$2,400,000	0.8%
Water Assistance Fund	$1,295,861	$1,295,861	$2,591,722	0.5%	$2,591,722	0.8%
Appropriated Receipts	$1,541,292	$1,541,292	$3,082,584	0.6%	$2,102,584	0.7%
Interagency Contracts	$45,712	$45,712	$91,424	0.0%	$91,424	0.0%
Total	**$260,177,166**	**$233,032,562**	**$493,209,728**	**100%**	**$311,755,533**	**100%**

5 Percent GR Reduction FY 2020–21 Total:	$3,439,699
2020 Salary Savings:	$902,698
2020 Operating Expenses:	140,581
Total 2020	$1,043,279
2021 Drinking Water State Match:	$2,000,000
2021 Operating Expenses:	60,249
2021 Salary Savings	336,171
Total 2021	$2,396,420

COVID-19 Expenses:

Salaries & Wages
Actual $73,910, Projected $147,820

Other Operating Expenses
Actual $11,784, Projected $127,696 ($91,950 spent on 40 emergency laptops)

A description of these funding sources is included below:

- General Revenue Fund (Appropriated Fund 0001) is used to account for all financial resources of the state except those required to be accounted for in another fund.

- Federal Funds includes funding from the EPA for administering the Clean Water and Drinking Water SRFs and pass-through funding from the FEMA related to the NFIP. The agency also receives funding from the U.S. Department of the Interior (Bureau of Reclamation), and the U.S. Geological Survey.

- Texas Infrastructure Resiliency Fund (Appropriated Fund 0175) is used for flood projects, flood related activities including the collection and analysis of flood-related information, flood planning, protection, mitigation, and outreach programs. Fund may be invested, and any earnings are deposited to the fund.

- Flood Infrastructure Fund (Appropriated Fund 0194) is used for financing for flood projects. Depository interest is deposited to the fund.

- Rural Water Assistance Fund (Appropriated Fund 0301) provides financial assistance to rural political subdivisions for water projects. (The program itself has not been active in recent years because it has been largely supplanted by the Clean Water and Drinking SRFs.)

- Water Infrastructure Fund (Appropriated Fund 0302) includes loans made under the program and costs of administering the program. (The program itself is no longer active since it was replaced by the SWIFT program in 2013.)

- Economically Distressed Areas Clearance Fund (Appropriated Fund 0356) holds balances during the year that are to be transferred to the interest and sinking fund to pay debt service.

- Agricultural Water Conservation Fund (Appropriated Fund 0358) holds bond proceeds and activity of grants to other state agencies for agricultural water conservation projects.

- Water Assistance Fund (Appropriated Fund 0480) receives monies appropriated for use or aid of water development, water conservation, water quality enhancement, or flood control.

- Appropriated Receipts includes funds for cost recovery from the federal SRF programs, revenues related to the Hydrosurvey program, and contracts and memorandums of understanding from entities other than Texas state agencies.

- Interagency Contracts includes contracts with the GLO for an address and land parcel database, hydrodynamic and oil spill monitoring, and the Texas Integrated Flood Framework.

B. List all riders that significantly impact your agency's budget.

- Rider 2. Capital Budget
- Rider 4. Authorized Transfers and Appropriations: Water Assistance Fund
- Rider 6. Appropriation: Water Resources Fund
- Rider 7, Appropriation: Agricultural Water Conservation Fund
- Rider 8. Fee Appropriation: State Revolving Fund Program Operation
- Rider 9. Use of TWRFA Funds
- Rider 10. Rural Water Assistance Fund
- Rider 11. Appropriation: Cost Recovery for the State Participation Program
- Rider 12. Capital Budget Expenditures: Federal Funds & Approp. Receipts Exemption
- Rider 14. Appropriation: Water Infrastructure Fund
- Rider 15. Unexpended Balances Within the Biennium
- Rider 16. Reimbursement of Advisory Committees
- Rider 17. Payment of Debt Service: Economically Distressed Areas Bonds
- Rider 18. Payment of Debt Service: Water Infrastructure Fund Bonds
- Rider 19. Bond Issuance Authority by Program
- Rider 20. Bond Issuance and Payment of Debt Service
- Rider 22. Flood Funding
- Rider 24. Unexpended Balances: Strategic Mapping Account

C. Show your agency's expenditures by strategy.

TWDB
Exhibit 6: Expenditures by Strategy – Fiscal Year 2020 (actual)

Goal / Strategy	Amount Spent ($)	Percent of Total	Contract Expenditures Included in Total Amount ($)
A.1.1 Environmental Impact Info	516,519	0.2%	20,223
A.1.2 Water Resources Data	1,937,605	0.8%	545,259
A.1.3 Automated Information	1,657,105	0.7%	45,677
A.2.1 Technical Assistance and Modeling	1,935,506	0.8%	441,607
A.2.2 Water Resources Planning	5,263,266	2.3%	1,505,546
A.3.1 Water Conservation	728,618	0.3%	
A.4.1 NFIP	61,405,309	26.9%	28,578,241
B.1.1 State & Federal Financial Assistance	14,669,622	6.4%	721,905
B.1.2 EDAP	147,771	0.1%	
C.1.1 EDAP Debt Service	30,354,189	13.3%	
C.1.2 Water Infrastructure Fund Debt Service	99,943,738	43.8%	
D.1.1 Central Administration	6,010,541	2.6%	
D.1.2 Information Resources	2,998,216	1.3%	971,498
D.1.3 Other Support Services	556,962	0.2%	
GRAND TOTAL:	**228,124,967**	**100%**	**32,829,956**

D. Show your agency's sources of revenue. Include all local, state, and federal appropriations, all professional and operating fees, and all other sources of revenue collected by the agency, including taxes and fines.

TWDB
Exhibit 7: Sources of Revenue — Fiscal Year 2020 (Actual)

Source	Amount ($)
Appropriated Receipts	399,135
Debt Service (EDAP, WIF, RWAF)	5,157,819
Federal Funds	8,308,317
Flood Funds (FIF, TIRF)	24,897,655
Interagency Contracts	87,865
Earned Federal Funds	152,480
Water Assistance Fund	22,922
TOTAL	**39,026,193**

E. If you receive funds from multiple federal programs, show the types of federal funding sources.

TWDB
Exhibit 8: Federal Funds – Fiscal Year 2020 (Actual)

Type of Fund	Federal / State Match Ratio	Federal Share - Trust (Method of Finance 99)	Federal Share - Treasury (All Federal Methods of Finance)	Total Federal Share	State Share	Total Funding
CWSRF	83.33 / 16.67	$0.00	$2,056,483.69	$2,056,483.69	$0.00	$2,056,483.69
CWSRF	83.33 / 16.67	$68,296,349.00	$1,499,579.96	$69,795,928.96	$14,524,400.00	$84,320,328.96
DWSRF	83.33 / 16.67	$8,779,202.25	$334,388.10	$9,113,590.35	$0.00	$9,113,590.35
DWSRF	83.33 / 16.67	$75,319,833.25	$3,307,984.37	$78,627,817.62	$17,245,000.00	$95,872,817.62
Special Appropriations Act Projects	100 (Federal)	$0.00	$16,989.71	$16,989.71	$0.00	$16,989.71

FEMA - Flood Mitigation Assistance	90 / 10	$0.00	$4,914,518.83	$4,914,518.83	$459,535.88	$5,374,054.71
FEMA - Flood Mitigation Assistance	90.06 / 9.94	$0.00	$727,189.98	$727,189.98	$292,359.00	$1,019,548.98
FEMA - Flood Mitigation Assistance	99 / 1	$0.00	$404,602.01	$404,602.01	$160.53	$404,762.54
FEMA - Flood Mitigation Assistance	98.88 / 1.12	$0.00	$1,140,597.08	$1,140,597.08	$923.92	$1,141,521.00
FEMA - Flood Mitigation Assistance	90.85 / 9.15	$0.00	$1,032,542.91	$1,032,542.91	$286,111.04	$1,318,653.95
FEMA - Cooperating Technical Partners	26.78 / 73.22	$0.00	$123,586.10	$123,586.10	$2,825.90	$126,412.00
FEMA - Flood Mitigation Assistance	91.52 / 8.48	$0.00	$5,851,942.85	$5,851,942.85	$209,283.06	$6,061,225.91
FEMA - Cooperating Technical Partners	100 (Federal)	$0.00	$23,200.87	$23,200.87	$0.00	$23,200.87
FEMA - Cooperating Technical Partners	83.65 / 16.35	$0.00	$98,239.84	$98,239.84	$20,139.15	$118,378.99
FEMA - Cooperating Technical Partners	89.39 / 10.61	$0.00	$235,084.40	$235,084.40	$0.00	$235,084.40
FEMA - Community Assistance Program - State Support Services Element	80/20	$0.00	$26,614.47	$26,614.47	$6,653.65	$33,268.12
USGS	85 / 15	$0.00	$2,836.98	$2,836.98	$68.82	$2,905.80
FEMA - Cooperating Technical Partners	100 (Federal)	$0.00	$6,566.04	$6,566.04	$0.00	$6,566.04
FEMA - Cooperating Technical Partners	100 (Federal)	$0.00	$10,555.65	$10,555.65	$0.00	$10,555.65

FEMA - Cooperating Technical Partners	100 (Federal)	$0.00	$5,093.55	$5,093.55	$0.00	$5,093.55
FEMA - Cooperating Technical Partners	100 (Federal)	$0.00	$10,019.83	$10,019.83	$0.00	$10,019.83
FEMA - Cooperating Technical Partners	23.54 / 76.46	$0.00	$3,609.90	$3,609.90	$1,228.50	$4,838.40
FEMA - Community Assistance Program - State Support Services Element	75 / 25	$0.00	$231,335.96	$231,335.96	$77,112.05	$308,448.01
USGS	57.21 / 42.79	$0.00	$2,312.32	$2,312.32	$1,729.52	$4,041.84
Texas Comptroller of Public Accounts	100 (Federal)	$0.00	$17,843.64	$17,843.64	$0.00	$17,843.64
TOTAL		**$152,395,384.50**	**$22,083,719.04**	**$174,479,103.54**	**$33,127,531.02**	**$207,606,634.56**

F. If applicable, provide detailed information on fees collected by your agency. Please explain how much fee revenue is deposited/returned to the General Revenue Fund and why, if applicable.

Exhibit 9, Fee Revenue, is not applicable.

VI. Organization

A. Provide an organizational chart that includes major programs and divisions and shows the number of FTEs in each program or division. Detail should include, if possible, department heads with subordinates and actual FTEs with budgeted FTEs in parenthesis.

See Attachment VI.A. TWDB Organizational Chart.

The TWDB's complete organizational chart, with department heads and subordinates, can be found on the agency's website.

B. If applicable, fill in the chart below listing field or regional offices.

The TWDB's headquarters within the Stephen F. Austin building is the location where most TWDB staff are based and the majority of business activities are performed.

Regional offices in Houston, Harlingen, El Paso, and Mesquite provide engineering reviews, grant management support, and community outreach services.

Centennial Towers in Austin houses the majority of active paper financial and business records.

The Hydro Lab is a warehouse facility located in North Austin that is used by the TWDB to house boats, trailers, trucks, and equipment used for field data collection and long-term monitoring. The facility is utilized primarily by the Surface Water and Groundwater divisions but also provides modest storage for bulk materials used by other divisions. Staff use the facility to fabricate, prepare, decommission, and test structures and data collection equipment.

TWDB
Exhibit 10: FTEs by Location — Fiscal Year 2021

Headquarters, Region, or Field Office	Location	Number of Budgeted FTEs FY 2021	Number of Actual FTEs (as of SER submission)
Headquarters (Central)	Austin, Texas	376.1	340
Regional Office	Houston, Texas	11	11
Regional Office	Harlingen, Texas	4	4
Regional Office	Mesquite, Texas	2	2
Regional Office	El Paso, Texas	1	1
Centennial Towers	Austin, Texas	1	1
Hydro Lab	Austin, Texas	0	0
		TOTAL: 395.1	**TOTAL: 359**

C. What are your agency's FTE caps for fiscal years 2019–22?

2019 329.1
2020 370.1
2021 395.1

D. How many temporary or contract employees did your agency have in fiscal year 2020? Please provide a short summary of the purpose of each position, the amount of expenditures per contract employee, and the procurement method of each position.

Title	Position Purpose	Procurement Method	Expenditure for Position
Programmer/ Developer II	GIS developer to maintain and enhance the texmesonet.org application (20 hrs/wk)	DIR Contract: DIR-TSO-354	$73,161.25
Program Supervisor I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$2,891.00
Program Supervisor I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$4,008.69
Engineering Specialist I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$3,812.50
Engineering Specialist I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$16,275.00
Program Specialist I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$23,212.50
Engineering Specialist I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$21,718.75
Program Specialist I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$5,275.00
Engineer I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$90,292.50
Engineering Specialist I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$20,743.75
Engineering Specialist I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$16,112.50
Program Specialist I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$21,725.00
Research Specialist I	Research and user experience expertise to support the redesign of the TexasFlood.org website and development of a decision support tool for the Flood Information Clearinghouse website	State Contract - WorkQuest Peak Performers	$11,902.80
Administrative Assistant III	Administrative support	State Contract - WorkQuest Peak Performers	$7,104.64

Administrative Assistant III	Administrative support	State Contract - WorkQuest Peak Performers	$2,925.44
Program Specialist I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$21,325.00
Program Specialist I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$8,300.00
Program Specialist I	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$15,100.00
Accountant III	Working on Water Supply and Infrastructure engineering processes	Interagency Contract #20000012402 - UT Arlington	$1,675.66

List each of your agency's key programs or functions, along with expenditures and FTEs by program.

TWDB
Exhibit 11: List of Program FTEs and Expenditures – Fiscal Year 2020

Program	Actual FTEs FY 2020	Budgeted FTEs FY 2021	Actual Expenditures FY 2020	Budgeted Expenditures FY 2021
Executive Support	17.0	17.0	$2,065,175	$2,334,567
Governmental Relations	2.2	3.0	$156,641	$250,721
Agency Communications	8.5	8.0	$642,446	$707,763
Office of General Counsel	10.6	12.0	$915,456	$1,046,587
Operations and Administration	1.8	2.0	$212,673	$242,247
Human Resources	9.2	8.0	$572,955	$579,773
Support Services	3.2	3.0	$922,380	$636,607
Information Technology	34.8	38.1	$5,012,831	$6,806,515
Finance	48.4	53.0	$6,077,889	$6,903,817
Water Supply and Infrastructure – Administration	3.3	4.0	$427,693	$527,662
Water Supply and Infrastructure – Regional Water Project Development	56.6	61.0	$4,190,455	$ 4,344,303
Water Supply and Infrastructure – Program Administration and Reporting	18.6	22.0	$1,177,047	$1,482,660
Water Supply and Infrastructure – Water Use, Projections, and Planning	19.5	20.0	$2,565,591	$4,258,471
Water Supply and Infrastructure – Flood Planning	3.3	11.0	$382,311	$758,378
Water Science and Conservation – Administration	5.1	5.0	$436,383	$842,767
Water Science and Conservation – Conservation and Innovative Water Technologies	23.0	24.0	$1,772,425	$2,930,373

Water Science and Conservation – Groundwater	28.8	30.0	$2,389,225	$3,251,435
Water Science and Conservation – Surface Water	25.3	27.0	$3,440,214	$6,012,762
Water Science and Conservation – Flood Science and Community Assistance	12.6	28.0	$1,473,873	$44,245,395
TNRIS	16.2	19.0	$1,829,358	$2,030,784
Debt Service and Financial Assistance Expenditures	0.0	0.0	$191,461,946	$495,472,966
TOTAL	**348.0**	**395.1**	**$228,124,967**	**$585,666,553**

VII. Guide to Agency Programs

This guide includes the TWDB's executive, administrative, and support functions followed by the agency's major programmatic functions. Each section below corresponds to a functional area within the TWDB; please see the agency's organizational chart in Section VI for reference.

In general, the organizational structure of the TWDB's programs follows the agency's four primary objectives that support our mission—science, planning, financial assistance, and TNRIS, the state's geospatial data clearinghouse—as outlined in Section II. While most science and conservation functions are within Water Science and Conservation and most financial assistance functions are within the Water Supply and Infrastructure, etc., there is some crossover between these functions and the offices that support them. Much, if not all, of the work of these areas supports one or more functions across other objectives. For instance, many of the science and data-related functions within Water Science and Conservation contribute to the development and implementation of the regional and state water plans.

Because of this overlap, there are some functions that are better aligned organizationally outside of their primary objective:

- Flood grants, including the federal Flood Mitigation Assistance program and some FIF financial assistance (early warning systems and matching funds for federal programs), align closely with the financial assistance objective. However, the Flood Science and Community Assistance Grant Coordination team is organized within Water Science and Conservation to best align those program functions with staff expertise, particularly staff expertise in the relationship between those functions and federal programs administered by FEMA.

- Agricultural Water Conservation grants are aligned with the financial assistance objective; however, that function is within Water Science and Conservation to best align those program functions with staff expertise in the field of agricultural water conservation. The Agricultural Water Conservation Loan Program, on the other hand, is organized within Water Supply and Infrastructure to align that function with staff expertise in financial assistance in the form of a loan; Agricultural Water Conservation staff in Water Science and Conservation provide technical expertise as needed.

- Flood Planning is organized within Water Supply and Infrastructure due to its similarities with the Water Supply Planning and associated staff expertise. Both the Water Supply Planning and Flood Planning programs are closely linked to financial assistance programs (SWIFT and FIF, respectively), which are also within Water Supply and Infrastructure.

VII. Guide to Programs: Executive Administration, Governmental Relations, Agency Communications, and Internal Audit

Executive Administration oversees the overall operations of the TWDB and provides leadership in the agency's core values: innovation, impact, pride in public service, and accountability. Governmental Relations and Agency Communications are agencywide functions that report directly to the Executive Administrator.

Internal Audit is an independent division that reports functionally to the agency's governing Board, with administrative matters handled by the Board Chair or the Chair's Chief of Staff.

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Executive Administration, Governmental Relations, Agency Communications, and Internal Audit

Location/Division: Austin/Executive Administration and Internal Audit

Contact Name: Jeff Walker, Executive Administrator, and Amanda Lavin, Assistant Executive Administration; Bryan McMath, Governmental Relations Director; Lauren Munguia, Chief Communications Officer; Nicole Campbell, Internal Audit Director

Statutory Citation for Program: Texas Water Code §§ 6.103, 6.183, and 6.184.

B. What is the objective of this program or function? Describe the major activities performed under this program.

Executive Administration

Executive Administration oversees all aspects of TWDB operations and consists of three main areas: (1) Executive Administrator, (2) Governmental Relations, and (3) Agency Communications. The primary objectives of Executive Administration are to support the TWDB and represent the agency before policymakers and stakeholders. Internal Audit reports functionally to the agency's governing Board, with administrative matters handled by the Board Chair or the Chair's Chief of Staff.

The Executive Administrator reports directly to the Board; implements Board policies and directives; is accountable for all functions and operations of the agency; manages agency priorities and budgets; directs and oversees agency initiatives; and is responsible for prudent management of the agency's financial portfolio.

Governmental Relations

Governmental Relations serves as a liaison between the TWDB and state leadership and the state legislature; other local, state, and federal elected officials; other governmental entities; and various trade and interest groups. Governmental Relations coordinates responses to legislative inquiries and facilitates communication between outside parties and TWDB subject matter experts. Governmental Relations coordinates the development and review of statutorily required legislative reports; assists in the development of the agency's strategic plan; coordinates the development of policy initiatives included in the agency's biennial legislative priorities report; tracks and reports on legislative activities; leads an agencywide bill review and analysis team; facilitates the provision of resource witnesses at hearings; and coordinates agencywide implementation of legislation.

Agency Communications

Agency Communications includes Creative Services and Strategic Communications, which provide an innovative stream of communications that respond to Texas and its evolving water needs. Communications handles media inquiries and responses and develops various marketing materials, newsletters, email blasts, and publications. It also communicates to stakeholders via social media and agency-produced content on the Texas Water Newsroom. Additionally, Communications coordinates the biennial Water for Texas conference. Agency Communications is the TWDB's direct contact with the media and public.

Agency Communications also administers the "Water IQ: Know your water" public awareness water conservation program and brand (Texas Water Code § 16.401) that was created to educate Texans about their water resources and to assist utilities in meeting state requirements for developing water conservation plans. Water IQ was developed by the TWDB through a public-private partnership and is owned and maintained by TWDB. Currently there are 109 Water IQ partners whose combined service areas represent about a quarter of the geographic area of the state.

Internal Audit

Internal Audit is the independent auditor for the TWDB. They provide independent, objective assurance and consulting services, using a risk-based approach, to add value and improve agency operations. The Texas Internal Auditing Act (Texas Government Code, Chapter 2102) authorizes TWDB Internal Audit to conduct audits, reviews, and investigations of activities of the agency with unrestricted access to records, physical properties, staff, and other documentation pertinent to carrying out any engagement.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

The effectiveness of Executive Administration is measured by the overall success of the agency; these considerations are discussed in Section II.

In January 2017 and January 2019, the TWDB hosted the agency's Water for Texas conference. Both conferences were widely regarded as a great success. Around 650 registered guests attended the latest conference, which included general sessions as well as breakout sessions in several water-related technical tracks. Approximately 90 percent of post-conference survey respondents reported that they would recommend the conference to others.

Agency Communications program statistics and performance measures are included below.

TWDB
Exhibit 12: Agency Communications
Program Statistics and Performance Measures — Fiscal Year 2020

Program Statistics or Performance Measures	FY 2020 Actual Performance
Organic, new subscribers to email service (metrics through Constant Contact)	795
Email campaigns sent through email service (metrics through Constant Contact)	235
Email service open rate (metrics through Constant Contact)	25% (industry rate is 20%)
Texas Water Newsroom page views (metrics through Google Analytics)	10,385*
Traditional media placements that resulted from Newsroom content (tracked by staff)	8*
Organic social posts that resulted Newsroom content (tracked by staff)	25*
Media requests (tracked by staff)	86
Twitter impressions (metrics through Sprout Social)	694,088
Facebook impressions (metrics through Sprout Social)	829,279
Instagram impressions (metrics through Sprout Social)	369,891
LinkedIn impressions (metrics through Sprout Social)	115,321
Twitter engagements (metrics through Sprout Social)	13,271
Facebook engagements (metrics through Sprout Social)	31,196
Instagram engagements (metrics through Sprout Social)	13,552
LinkedIn engagements (metrics through Sprout Social)	5,206
Twitter post link clicks (metrics through Sprout Social)	1,009
Facebook post link clicks (metrics through Sprout Social)	9,994

Instagram post link clicks (metrics through Sprout Social)	56
LinkedIn post link clicks (metrics through Sprout Social)	3,539
Twitter followers gained (metrics through Sprout Social)	647
Facebook followers gained (metrics through Sprout Social)	601
Instagram followers gained (metrics through Sprout Social)	1,196
LinkedIn followers gained (metrics through Sprout Social)	1,675
YouTube subscribers (metrics through YouTube.com)	284
YouTube video views (metrics through YouTube.com)	49,400
Promotional items distributed at external conferences	1,081**

*TexasWaterNewsroom.org launched in June 2020. Metrics reflect June through August 2020.
**Due to COVID-19, Agency Communications only exhibited at one conference during FY 2020.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

Services and functions of Executive Administration and Governmental Relations have not changed from the original intent.

Executive Administration and the Board, recognizing the importance of communicating the work of the agency with customers, stakeholders, and the general public, has expanded Agency Communications in the last several years to include two graphic designers, a video producer/writer, and a strategic communications manager. Additionally, the team coordinates the biennial Water for Texas conference, which has taken place in 2017 and 2019 and is scheduled for September 2021 in Austin. In 2017 and 2019, the conference hosted approximately 550 to 650 attendees. In June 2020, Communications launched TexasWaterNewsroom.org, a new website that hosts all agency-produced press releases, articles, and videos and serves as a one-stop-shop for members of the media and public to source news content.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

N/A

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Executive Administration

The Executive Administrator is the agency's chief executive officer and reports directly to the Board. The Executive Administrator delegates authority for specific program areas to four Deputy Executive Administrators, the Chief Financial Officer (CFO), and the General Counsel, as depicted in the agency's organizational chart. Within Executive Administration, the Assistant Executive Administrator, Governmental Relations Director, Chief Communications Officer, and Special Advisor report directly to the Executive Administrator and are part of the agency's leadership team.

In addition to overseeing all agency operations, the Executive Administrator supports the TWDB's governing Board and their policymaking functions by providing regular briefings on agency activities at public meetings and by providing formal recommendations to the Board on financial assistance commitments; financial assistance program structures and intended use plans; contracting actions; bond transactions; regional water plan approvals and state water plan adoption; rulemakings; execution of MOUs; legislative priorities and approval of legislative reports; the agency's Legislative Appropriations Request; advisory council membership; and other business items. The Executive Administrator represents the agency in numerous public forums and regularly provides testimony before the Texas Legislature.

Governmental Relations

The Governmental Relations Director oversees this function with support from one Governmental Relations Specialist. Governmental Relations works closely with executive management as well as deputy executive administrators, directors, managers, and frontline staff from each office to respond to external requests from governmental entities related to TWDB programs and services.

Throughout the legislative cycle, Governmental Relations serves as a point of contact at the agency for state leadership and members of the legislature. Staff work closely with legislative committees and provides training for TWDB staff on how to support the work of the legislative process, coordinates TWDB resource witnesses for testimony at hearings, and monitors agencywide implementation of legislation.

Prior to each legislative session, Governmental Relations coordinates development, approval, and delivery of special legislative reports and also works with the agency's leadership team to develop legislative recommendations for consideration by the Board. Governmental Relations assists executive management in development of the agency's strategic plan and Finance in development of the biennial legislative appropriations request.

During each legislative session, Governmental Relations leads an agencywide team of staff that reviews, analyzes, and tracks all filed legislation that would impact TWDB programs and services and prepares cost estimates for the LBB.

Governmental Relations also coordinates agency support of the legislative advisory committees associated with SWIFT and TIRF. The SWIFT legislative advisory committee, which is composed of seven members specified in Texas Water Code § 15.438, is tasked with reviewing the overall operation, function, and structure of SWIFT at least semiannually and may provide comments and recommendations to the TWDB on any matter. Since its creation, the SWIFT Advisory Committee has held one to two public hearings each year, and the most recent meetings were in December 2019 and December 2020. At these hearings, TWDB leadership provides the committee with information about the SWIFT program and its goals, details regarding fund balances, project commitments, and any updates to programmatic processes or changes implemented. The Texas Treasury Safekeeping Trust Company also presents to the committee regarding investment of SWIFT funds.

The TIRF legislative advisory committee is composed of the seven members specified in Texas Water Code § 15.438 as well as the director of TDEM as a non-voting member. Like the SWIFT Advisory Committee, the TIRF Advisory Committee is also tasked with reviewing the overall operation, function, and structure of TIRF at least semiannually and may provide comments and recommendations to the TWDB on any matter. Since its creation, the TIRF Advisory Committee has met twice in conjunction with the SWIFT Advisory Committee hearings in December 2019 and December 2020. At both hearings, TWDB staff provided the committee with details on implementation of new flood programs resulting from the 86th Legislative Session. TDEM also provided updates regarding the implementation of SB 7 and other flood-related items.

Both the SWIFT and TIRF advisory committees provided input to the TWDB regarding use of money in the respective funds and for use by the TWDB in adopting rules.

Agency Communications

Agency Communications works with staff in carrying out the primary functions for processing open records requests media requests, news clips service distribution, planning and distributing in-house publications, social media content, and producing press releases, articles, and videos for members of the media and public. The Chief Communications Officer works with the Deputy of Operations and Administration, executive management, and legal staff to ensure effective implementation of policies and procedures for each of these primary functions. The Chief Communications Officer oversees this program, with support from a Strategic Communications Manager, Creative Services Team Lead, two Information Specialists, a Graphic Designer, and a Media Relations Specialist. Agency staff request communications-related assistance, and the Chief Communications Officer and Strategic Communications Manager confer to prioritize projects.

Internal Audit

Under the direction of the Board and in consultation with Executive Administration, Internal Audit does the following:

- Develops an annual audit plan based on a systematic assessment of risk for the agency and presents the plan to the Board for review and approval.
- Conducts risk-based audits, in accordance with each approved audit plan, to provide an independent assessment of processes or activities. Project-specific risk assessments are performed, and Internal Audit, in collaboration with the management, Executive Administration, and the Board, determines the nature and scope of each project.
- Performs consulting services, the nature and scope of which are agreed upon with the client, to proactively provide expertise and independent analyses as management controls are being designed.
- Conducts investigations into allegations of fraud, waste, or abuse, reported to Internal Audit through the agency's fraud hotline and referred by the State Auditor's Office.
- Tracks and monitors the implementation status of issues and recommendations resulting from internal and external audits, reviews, and oversight activities.
- Performs follow-up audit work to assess the implementation status of corrective actions taken in response to prior internal and external audit findings and recommendations.
- Coordinates external audit activities, providing a single point of contact for all audits of the agency by oversight entities.
- Prepares the Internal Audit Annual Report in accordance with the Texas State Auditor's Office guidelines and submits the report to the required oversight entities by November 1 of each year. The Annual Report provides a summary of the division's activities and the results of work for the year.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding	Amount	
General Revenue	$	2,673,281
Federal Funds	$	83,896
Flood	$	86,121
Appropriated Receipts	$	20,964
Grand Total	$	2,864,261

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

Other state agencies have similar functions devoted to governmental relations, legislative affairs, and/or public affairs. The TWDB's Governmental Relations coordinates and collaborates with counterparts at other state agencies by participating in regular meetings of the State Agency Governmental Relations group.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

N/A

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

The TWDB is an active member in the Council of Infrastructure Financing Authorities, which is a national, not-for-profit organization of SRF Programs. The council advocates for laws, policy, and funding to increase investment in water infrastructure that protects public health and the environment. The TWDB has a long history of service with the council including past and present service on the Board of the organization. The current Executive Administrator, Jeff Walker, serves as the current Treasurer and is in line to serve as the Vice-President.

Governmental Relations serves as a liaison between the TWDB and other governmental entities, including but not limited to: municipalities, counties, councils of government, water districts (such as river authorities, municipal utility districts, water control and improvement districts, drainage districts, irrigation districts, special utility districts, and soil and water conservation districts), other state agencies, statewide elected officials, and U.S. Senate and Congressional offices. Governmental Relations responds to requests from these entities regarding agency programs and activities, water-related data, and/or financial assistance.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

A contract with Innovation Event Management is in place for Water for Texas conference planning purposes. The contractor supports overall event planning, with specific focus on sponsorships, venue coordination, and budget.

- **the amount of those expenditures in fiscal year 2020;**

$20,964.00

- **the number of contracts accounting for those expenditures;**

  1

- **the method used to procure contracts;**

Request for Qualifications

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
Innovation Event Management	$20,964.00

- **the methods used to ensure accountability for funding and performance; and**

The agency adheres to the Texas Comptroller of Public Accounts guidelines for contracting; contracts have a detailed statement of work that outlines tasks and deliverables, as appropriate. Invoices are reviewed and approved by each contract manager throughout the life of the contract. Additionally, regular and recurring meetings are held with the contractor and frequent correspondence ensures performance expectations are met.

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

N/A

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

N/A

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your

agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

VII. Guide to Programs: Office of General Counsel

The Office of General Counsel provides comprehensive agencywide legal services and representation for the agency and the TWDB's governing Board. The Office of General Counsel also regularly interacts with members of the public, including meeting with representatives of constituents who are applying for financial assistance, members of the public who want to participate in Board meetings and rulemaking proceedings, and those who are seeking information from the agency under the Public Information Act. The Office of General Counsel also serves as liaison to the Texas Office of the Attorney General for litigation involving the agency or the State of Texas.

A. Provide the following information at the beginning of each program description.

Name of Program or Function: General Counsel

Location/Division: Austin/Office of General Counsel

Contact Name: Ashley Harden, General Counsel

Statutory Citation for Program: Texas Water Code §§ 6.183 and 6.184

B. What is the objective of this program or function? Describe the major activities performed under this program.

The objective of the Office of General Counsel is to provide legal advice and representation to the TWDB Board members and staff in the areas of financial assistance, water planning, water policy, natural resources, environmental compliance, legislation, tort claims, human resources, contracting and purchasing, real estate, ethics, open records, open meetings, and rulemaking. This includes, but is not limited to, preparing and reviewing documents, researching and preparing formal and informal legal opinions, representing the agency on interagency working groups, drafting and reviewing regulations and policies, and working with the Office of the Attorney General regarding agency litigation and contested matters.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

TWDB
Exhibit 12: Office of General Counsel
Program Statistics and Performance Measures – Fiscal Years 2020

Program Statistics or Performance Measures	FY 2020 Actual Performance	FY 2021 Actual Performance (as of 07/22/2021)
Resolutions Prepared for Board	107	93
Proposed Rule Packages to *Texas Register*	3	3
Responses to Public Information Requests	103	93
Referrals to Office of the Attorney General for Public	8	13
Bill Analysis Reviews	N/A	443

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

N/A

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

The Office of General Counsel oversees all legal matters of the agency. It consists of a General Counsel, eight Assistant General Counsels, one Executive Assistant, one paralegal, and one program specialist. Three of the Assistant General Counsels have been designated as team leads for functional groups that support different parts of the agency; there are groups for Water Supply and Infrastructure, Water Science and Conservation and Finance, and Operations and Administration.

The program specialist serves as the agency open records coordinator and records manager. The executive assistant provides administrative support to and staffing for agency Board meetings and performs the other administrative tasks for the office. Lastly, the paralegal provides legal support services, such as preparation of contract documents and responses to open records requests, for every part of the Office of General Counsel.

The Office of General Counsel is a central service function that provides legal services and advice internally to the entire agency. The types of legal services vary depending on the issues that arise within the agency. A breakdown of the staff resource allocation by the Office of General Counsel is as follows:

- Water Supply and Infrastructure: 45 percent
- Water Science and Conservation: 10 percent
- Finance: 10 percent
- Operations and Administration: 20 percent
- Other: 15 percent

The Water Supply and Infrastructure team supports Water Supply and Infrastructure by helping to review applications for financial assistance, preparing resolutions and other documents needed for Board consideration of applications, and reviewing documents needed for closings. The team also provides legal advice to Water Supply and Infrastructure management and other stakeholders throughout the agency on topics related to the agency's financial assistance programs, the state water plan and the flood planning program. Including the team lead, the Water Supply and Infrastructure team has five total attorneys and uses also uses the services of the Office of General Council's executive assistant and paralegal.

The Water Science and Conservation and Finance team includes two attorneys who support the Water Science and Conservation and Finance by providing general support for day-to-day operations, including assistance with rulemaking and legal advice. The attorneys also assist Finance with the agency's bond issuances and with issues involving the agency's investment portfolio.

The Operations and Administration team includes a team lead and a program specialist who serves as the agency records manager. The team provides legal services to Operations and Administration and the Procurement and Contracting Services section of Finance. The Operations and Administration team is responsible for legal assistance for the agency's procurement processes and for compliance with the Public Information Act and state record management laws. The Operations and Administration team also provides legal advice to the agency's HR and management on employment law issues.

The Office of General Council's executive assistant performs general administrative duties for the division and serves as the coordinator for Board meetings, including agenda preparation, preparation of Board books used in the meetings, and the preservation of minutes and other records documenting actions taken by the Board. The Office of General Council's paralegal provides support services for the three teams including document preparation for the financial

assistance and contracting functions and review and preparation of correspondence and other documents for the agency's public information function.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
General Revenue	$	740,087
Federal Funds	$	173,497
Flood	$	1,872
Grand Total	$	915,456

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

There are no other programs, internal or external to the TWDB, that provide services that are identical to or similar to the functions of the Office of General Counsel. The Office of the Attorney General represents the TWDB in civil litigation. Other state agencies have legal divisions and private law firms provide legal services, but no other program provides services that are identical or similar to the services provided by the TWDB's Office of General Counsel.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Although there is little risk of duplication or conflict, the Office of General Counsel seeks to ensure coordination with other agencies to increase efficiency. For example, the TWDB participates in the State Agency Coordinating Committee Legal Subcommittee. The program specialist who serves as the agency public information coordinator participates in periodic meetings of agency public information coordinators. In addition, the TWDB attorneys are members of various state and local bar groups.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

The Office of General Counsel works with entities seeking loans and grants from the TWDB, including but not limited to cities; counties; local and special districts created under Section 52, Article III or Section 69, Article XVI, Texas Constitution; GCDs, other political subdivisions of the state; any interstate compact commission to which the state is a party; and any nonprofit water supply corporation created and operating under Chapter 67.

The Office of General Counsel also supports agency staff in water science and conservation and water planning issues, including groundwater. This can include interacting with the groups involved in these issues, such as local governments, special and local districts, regional water planning groups that have been designated by the TWDB, and groundwater management areas.

The Office of General Counsel supports the work of other TWDB divisions in their routine work with other agencies, including but not limited to the following:

- Office of the Governor
- TCEQ
- Texas Secretary of State's Office
- U.S. Environmental Protection Agency (EPA) on CWSRF and DWSRF
- FEMA
- U.S. Geological Survey
- Texas Comptroller's Office
- Texas Facilities Commission
- Texas State Library and Archives Commission
- DIR
- Texas Office of the Attorney General
- The Texas Workforce Commission and federal Equal Opportunity Commission.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**
- **top five contracts by dollar amount, including contractor and purpose;**
- **the methods used to ensure accountability for funding and performance; and**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

N/A

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

N/A

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

VII. Guide to Programs: Finance

Finance oversees the TWDB's $17.6 billion financial portfolio, upholding the agency's fiduciary responsibility to the state of Texas and its citizens by closely monitoring all financial transactions for compliance with applicable laws and regulations, ensuring that borrowers are in financial compliance with loan covenants, and adhering to the highest standards of governance and internal control. Finance is also responsible for the day-to-day financial operations of the agency, as described below.

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Finance

Location/Division: Austin/Finance

Contact Name: Rebecca Trevino, CFO

Statutory Citation for Program:

Texas Constitution – Authority to Issue Debt (see Attachment VII.A. Financial Assistance Bonding and Financing Authorities

Texas Water Code §§ 6.183, 6.184, 6.190 and 6.192. The TWDB is constitutionally authorized to issue general obligation and revenue bonds for the purposes of financing water and wastewater infrastructure. In addition, the TWDB has been named by the governor as the state entity responsible for administering the Clean Water and Drinking Water SRFs, which includes statutory authority to issue revenue bonds. Because the agency is responsible for repayment of its debt, it also has an inferred responsibility to ensure it can repay outstanding debt. As a result, the TWDB has a team dedicated to ensuring borrowers comply with their respective loan covenants.

B. What is the objective of this program or function? Describe the major activities performed under this program.

Finance is responsible for the financial operations of the agency, including management and administration of Budget; Accounting; Financial Reporting; Payroll, Accounts Payable, and Travel; Revenue; and Procurement and Contract Services. Finance is also responsible for two major functions related to the agency's primary function of financing water and wastewater projects.

The first area, Debt and Portfolio Management, is responsible for raising financial capital needed to fund many of the agency's financial assistance programs. These responsibilities include determining the size and structure of a bond sale, managing the external advisors, ensuring accuracy of the documents, and closing the deals. This area also maintains and monitors program cashflows to ensure bonds can be repaid and works with the credit rating agencies as needed.

The second area, Financial Compliance, ensures borrowers comply with loan covenants. Responsibilities include an annual review of each borrower's audited financial statements to monitor and assess the financial health of each organization with active financial commitments with the TWDB. Staff also seek corrective action plans when appropriate and monitor compliance with the plans, as well as conduct onsite monitoring visits if appropriate. To date, the TWDB has not had any defaults of pledged loans in its financial assistance programs.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

As mentioned in II. H, "Increasing Statutory and Operational Responsibilities," Finance tracks several key performance metrics for the agency. Data for these metrics from FY 2013 to FY 2020 are available in Attachment VII.C. Finance Metrics; FY 2020 performance data is presented in the table below.

TWDB
Exhibit 12: Finance Program Statistics and Performance Measures – Fiscal Year 2020

Program Statistics	FY 2020 Actual Performance
Total Assets Managed	$17,626,612,511
Total Dollar Amount of Loans Receivable	$12,606,254,290
Number of Loan Repayments Received	521
Number of Active Bond Series	50
Total Dollar Amount of Bonds Payable	$8,971,584,826
Number of Active Loans	1,042
Number of New Loans Closed	145
Total Dollar Amount of New Loans Closed	$2,461,377,753
Number of Active Contracts	600
Number of Payment Vouchers Processed	2,460
Number of Encumbrance Transactions Processed	1,372
Number of Communities with Active Financial Assistance Agreements	550
Number of Federal Reports Processed	91

Number of Federal Draws Deposited	144
Number of Deposits Processed	904

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

The TWDB's bill pattern in the General Appropriations Act for FY 2020–21 totaled $382,541,502. The 86th Legislature passed SB 7 and SB 8, which added new flood programs to the TWDB. Additional appropriations of $1.478 billion were provided through SB 500, the Supplemental Appropriations Act, causing the agency's funding to increase almost four-fold, as shown below:

Description	FY 2020-21 Biennium
General Appropriations Act, Article VI, TWDB	**$382,541,502**
SB 500 Supplemental Appropriations:	
Section 74, TIRF, Hazard Mitigation	$273,000,000
Section 75, TIRF, Public Assistance	$365,000,000
Section 76, TIRF, Mapping, Planning, and Operations	$47,000,000
Section 77, FIF Program	$793,000,000
Total SB 500 Supplemental Appropriations	**$1,478,000,000**
Increase over General Appropriations Act	$1,478,000,000
% Increase over General Appropriations Act	**386.36%**

The new flood programs (FIF and flood planning) resulted in significant, additional workload for the entire agency, including Finance. To help support the additional workload, the legislature authorized 51.0 additional FTEs across the agency, which is an increase of approximately 15 percent, as shown below:

FTE, per General Appropriations Act	344.1
FTE Supplemental	51
Total	**395.1**
Percent increase over General Appropriations Act	**14.82 %**

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

N/A

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Finance is divided into multiple functions with specific objectives as described below:

- CFO Administration includes the CFO, the Deputy CFO, the Office's Executive Assistant, and a Business Analyst. The team is designed to oversee all operations within Finance and ensure that staff adopt sound business practices, comply with all appropriate guidance, ensure there is no waste, fraud or abuse, identify and mitigate risks, etc. In addition, the CFO and Deputy CFO ensure that all areas of the agency have the financial resources needed to promote successful completion of their deliverables as well as provide specialized expertise to the Board and Executive Administrator. The business analyst position works to ensure all financial systems operate effectively, develops technical requirements for system improvements or enhancements, and coordinates user acceptance testing as needed.

- Budget is responsible for coordinating the biennial legislative appropriations request and operating budget as well as developing and managing the annual internal operating budget. Staff are responsible for ensuring compliance with LBB budget reporting requirements and ensuring public funds are used for their intended purpose.

- Accounting is responsible for processing all transactional data, including payroll and travel. They also prepare the majority of agency's financial reports and ensure compliance with Comptroller guidance.

- Procurement and Contract Services is responsible for coordinating all procurements, issuing purchase orders, and tracking the agency's contracts.

- Debt and Portfolio Management is responsible for issuing bonds, ensuring the proper use of bond proceeds, and repaying the debt.

- Financial Compliance is responsible for reviewing the financial position of program participants, as well as their compliance with loan covenants, to identify risks that may impact their ability to repay the TWDB in full.

Finance uses multiple systems in its day-to-day operation, including:

- Texas Water Information System Expansion (TxWISE), for structuring loans and debt, managing outstanding bonds payable, managing outstanding loans receivable, and financial reporting. This system is used to track loans, loan forgiveness, and some grants.

- Contract Administration System, for tracking contracts for goods and services, as well as some grants.

- MIP Fund Accounting internal accounting system for day-to-day operations, financial reporting of appropriations and local funds. Interfaces are used to avoid duplicate entry to the Uniform Statewide Accounting System.

- CAPPS–HR statewide system for tracking time and effort of all employees, to track leave balances, and to process payroll.

- Various banking portals, such as Bank of New York as the SWIFT trustee; Wells Fargo as its custodian for public securities; Wells Fargo for the Travel Advance account; Texas Treasury Safekeeping Trust Company as the administrator of local funds; and Citibank for procurement and travel cards. Various staff have access to various systems based on their roles and responsibilities.

- Federal draw system – TWDB has federal grants with FEMA and EPA. Each agency has its own system for drawing federal funds.

- Other state systems – Staff use the Automated Budget and Evaluation System for Texas (ABEST) for external budget reporting and performance measures and USAS for managing appropriations.

Finance follows Texas Comptroller of Public Accounts policies that covers multiple topics including accounting policies, appropriation accounting, asset management, CAPPS, financial reporting, payment processing, payroll, revenue accounting, and travel.

Finance also follows LBB guidance that provides guidance regarding the legislative budget process, various LBB reporting requirements such as the Biennial Operating Plan, the Legislative Appropriations Request, and agency contract reporting. Information regarding the use of ABEST is also located on this portal.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding	Amount
General Revenue	$ 5,075,397
Federal Funds	$ 948,368
Flood	$ 54,124
Grand Total	$ 6,077,889

Finance also expended appropriated funds for debt service (both self-supporting and non-self-supporting), as well as financial assistance payments in the agency's new flood programs, as follows:

Category / Program	General Revenue	Other Funds	All Appropriated Funds
Debt Service:			
Self-supporting			
Rural Water Assistance Fund (RWAF)		$ 4,144,790	$ 4,144,790
Non-Self-supporting			
Economically Distressed Areas Program (EDAP)	$ 27,215,431	$ 3,138,758	$ 30,354,189
Water Infrastructure Fund (WIF)		$ 99,943,738	$ 99,943,738
Flood Financial Assistance:			
TIRF, Hazard Mitigation / Public Assistance		$ 57,019,230	$ 57,019,230
Grand Total	**$ 27,215,431**	**$ 164,246,515**	**$ 191,461,946**

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

N/A

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

N/A

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

The EPA and FEMA provide guidance on administering federal programs. They also provide training and onsite monitoring of programs under their jurisdiction. The TWDB prepares an Indirect Cost Rate Proposal that is submitted to the EPA each year. The TWDB works with local entities to deliver funds for approved projects. Financial Compliance staff work with local entities to ensure compliance with bond covenants.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

Contracts provide for ongoing services relating to the issuance of debt, including financial advisory services, underwriting, bond counsel, and tax counsel. The division also has a contract for a reporting and tracking system that is used by the Financial Compliance staff to monitor the financial condition of borrowers in the TWDB financial assistance portfolio, as well as contracts with Certified Public Accounting firms to assist with the CFO-to-Go program.

- **the amount of those expenditures in fiscal year 2020;**

$1,002,143

- **the number of contracts accounting for those expenditures;**

7

- **the method used to procure contracts;**

Requests for Proposal or Requests for Quote to procure professional services

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
First Southwest	$475,763.27
McCall, Parkhurst & Horton, LLP	$381,000.00
Municipal Advisory Council of Texas	$95,200.00
Wells Fargo	$15,783.94
First Southwest	$15,000.00

- **the methods used to ensure accountability for funding and performance;**

The agency adheres to the Texas Comptroller of Public Accounts guidelines for contracting; contracts have a detailed statement of work that outlines tasks and deliverables, as appropriate.

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

Litigation Regarding Contract Revenues

The TWDB invests in local infrastructure by purchasing locally issued public securities that are considered very sound investments. However, recent litigation regarding contract revenues could potentially negatively impact revenue streams of the entities within the portfolio (see Section IX, Major Issues, Governmental Immunity for Local Governments Participating in Regional Projects). As with any litigation, there is no known timeline for resolution and litigation could continue for years. Because of this uncertainty, the TWDB has discussed whether a mechanism for bad debt should be proposed. For example, the use of a "Reserve for Bad Debt" is common in banking institutions.

Procurement and Contracting Services Level of Service

The level of service provided by the Procurement and Contracting Services team has deteriorated over the last few years due to the growth of the agency's responsibilities, fragmented and dated systems, as well as the loss of senior staff and institutional knowledge. In response, the agency has recently moved responsibility of the function from Operations and Administration to Finance. This placement will benefit Procurement and Contracting Services by allowing them to coordinate with the budget and accounts payable teams more closely. In addition, three new full-time positions have been added to the team along with two temporary employees.

Audited Financial Statements for TWDB Financial Assistance Recipients

The TWDB relies on audited annual financial reports of entities in its portfolio to assess the financial health of each organization, as well as the status of compliance with loan or grant agreements. Often, it is challenging to get audited financial reports in a timely manner. While there are statutes requiring audits for most entities, no state entity enforces compliance to ensure timely preparation of audited financial statements. This can cause delays or be a barrier to entities seeking to address essential services through financing programs with the TWDB and other funding agencies.

As of summer 2021, a significant number of entities in the TWDB's portfolio have not submitted their annual financial reports in a timely fashion, which decreases the timeliness of the agency's

insight into the entities' operations and increases the risk that borrower non-compliance issues will not be detected.

See Section IX, Major Issues, Audited Financial Statements for TWDB Financial Assistance Recipients, for further discussion on this topic.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

N/A

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

VII. Guide to Programs: Operations and Administration

Operations and Administration provides agencywide services and functions in three divisions: Human Resources, Information Technology, and Support Services.

Operations and Administration: Human Resources

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Human Resources (HR)

Location/Division: Austin/Operations and Administration, Human Resources

Contact Name: Edna Jackson, Operations and Administration Deputy Executive Administrator

Statutory Citation for Program: Texas Water Code §§ 6.183 and 6.184.

B. What is the objective of this program or function? Describe the major activities performed under this program.

HR is a supporting function in facilitating the accomplishment of the TWDB's mission by providing services and administering benefits that promote the security and well-being of the TWDB's most important resource, its employees. HR provides administrative services to the employees of the TWDB in the areas of human resources including recruitment, employee benefits, salary administration, human resources development, personnel records, and employee relations.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

HR maintains status reports that provide updates to activities and projects performed by the division to include specific information related to

- number of employees (year to date),
- FTE Cap,
- management-to-staff ratio,
- number of new hires,
- number of separations,
- employee turnover rate,
- current job posting status report,
- internship program,
- contractor/temporary employee report,
- recruitment events,
- special leave and benefits issues,
- Workers' Compensation report,
- HR reports and status updates, and
- HR special projects.

This comprehensive reporting tool provides management with a weekly summary that assesses the performance of HR. In FY 2020, HR

- managed 73 active job postings;
- onboarded over 100 new hires, interns, and contractors;
- conducted a series of 18 management and staff trainings designed to address deficiencies in hiring, performance appraisal, and disciplinary actions, which include the

successful development and implementation of the Leadership Exploration and Development Program;

- conducted 30 employee separations;
- processed more than 600 personnel actions;
- processed awards including over 230 administrative leave, service, and retirement awards;
- processed over 200 leaves in the categories of special sick leaves, bereavement, wellness, military, Family First Coronavirus Response Act, leave without pay, and Family and Medical Leave requests;
- processed 14 disability requests;
- processed bonuses including approximately 50 retention and recruitment requests;
- processed 2 educational assistance reimbursement requests;
- processed annual appraisals/reviews and annual telecommuting agreements for all agency staff;
- maintained a comprehensive recruitment program to include career fair attendance/sponsorship, successful advertisement program and brand development;
- maintained a comprehensive wellness program;
- implemented DocuSign for Human Resources signature requirements to improve agency efficiencies;
- maintained a comprehensive internship program to include partnering with the Mickey Leland Program and Environmental and Natural Resources Law Section; and
- implemented revised HR policies and procedures.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

In 2015, the TWDB developed an “Aspiring Leaders Program” with a goal of increasing employee retention by building a community of employees who, with the skills they gain in the program, are prepared to advance into leadership positions. This type of succession planning helps identify, develop, and transfer knowledge to employees who become highly qualified and capable of filling key positions. To date, the TWDB has facilitated three annual Aspiring Leaders Program courses. Of the 26 participants, 12 are currently in agency leadership roles.

In 2016, the agency revamped and formalized its internship program, which is comprised primarily of unpaid internship opportunities aimed at providing students with real-world training and skill development. The goal is to provide current college students or recent graduates with useful skills to complement their education and help them gain future employment opportunities. Beyond providing on-the-job experience in their desired field, internships at the TWDB give students both an inside look at state government and the opportunity to see firsthand how our important work has a direct impact on the citizens of Texas. Interns are afforded opportunities to interact with and learn from agency management

while working closely with subject matter experts in their intended field. Opportunities are standardly offered on a semester basis and include mixers, field trips, externships, and other informal activities.

In 2019, the agency offered a leadership training program to current agency management staff called "Leadership Exploration and Development." The year-long curriculum required participants to attend internal and external leadership training programs, serve as a mentor, complete a summary portfolio, and conduct a presentation.

In the past year, HR has had to shift its methods of administering services due to the digital transformation prompted by the COVID-19 pandemic. For example, personnel records are now maintained electronically, documents are routed electronically, and trainings such as those for CAPPS-HR and new hire orientation are provided virtually. This has been a significant shift in the way services have traditionally been provided.

The FY21 deployment of the CAPPS-HR system has additionally prompted a shift in HR and agency processes for leave accounting and other personnel actions.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

N/A

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

HR serves under the direction of the Deputy Executive Administrator for Operations and Administration. The division works with management and legal staff to ensure effective implementation of HR policies and practices for the agency.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
General Revenue	$	353,167

Federal Funds	$	118,254
Flood	$	49,152
Earned Federal Funds	$	52,382
Grand Total	$	572,955

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

HR functions must be performed by all state agencies in some capacity. The TWDB has determined that an internal program best suits its business needs as opposed to outsourcing these duties and responsibilities. The HR function is centralized at the TWDB and there is no redundant function elsewhere in the agency.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

HR coordinates training with internal divisions to avoid duplication of services. The division also coordinates with external agencies such as the Equal Employment Opportunity Commission, State Auditor's Office, Office of Attorney General, Texas Workforce Commission, Employees Retirement System, State Office of Risk Management, etc., as needed to ensure mandated training, legal claims, unemployment claims, workers compensation claims, employee benefits information, and other personnel matters are appropriately handled or resolved.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

N/A

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**
- **top five contracts by dollar amount, including contractor and purpose;**

- **the methods used to ensure accountability for funding and performance; and**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

The TWDB has made extensive efforts during this challenging job market to recruit and retain hard-to-fill or key positions. The pandemic, rising housing costs, and other factors have prompted a shift toward employees relocating to distant or even out-of-state locations. Efforts to retain or even recruit employees within hard-to-fill or key positions have led to extreme vetting and case-by-case approvals for distant or out-of-state staff in limited circumstances.

This trend along with the agency's digital transformation creates has also created opportunities for recruitment of hard-to-fill positions at the national level. Positions such as modelers, GIS specialists, hydrogeologists, hydrologists, and IT specialists can be advertised nationally, casting a broader net on potential applicants.

Challenges associated with this trend include statutory uncertainty related to distant or out-of-state employment. For example, management of other state employment and tax laws requires significant research and careful administration by state agencies. Travel-related statutes do not specifically address changing workplace dynamics leaving much for agency interpretation as related to staff working remotely.

Other challenges relate to the TWDB's inability to compete with other public and private organizations that offer more flexible work/life balance programs. Staff surveys and discussion sessions clearly indicate staff interest in long-term telecommuting and other flexible work programs. Supportive state statutes could utilize current trends as an opportunity to recruit and maintain a talented and robust workforce.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

N/A

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**

- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Operations and Administration: Information Technology

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Information Technology

Location/Division: Austin/Operations and Administration, Information Technology

Contact Name: Darrell Tompkins, Chief Information Officer

Statutory Citation for Program: Texas Water Code §§ 6.183 and 6.184; Texas Government Code §§ 2054.071 and 2054.136

B. What is the objective of this program or function? Describe the major activities performed under this program.

IT's objective is to provide a secure, stable, scalable, and innovative technology environment for the agency. IT is composed of the following functions:

- Operations provides maintenance, support, and upgrades for IT infrastructure, hardware, software, and commercial-off-the-shelf applications. It is composed of Security and Networking and Help Desk.
- Application Development provides maintenance, support, and enhancements for in-house developed and modified-off-the-shelf applications. It is composed of Project Management, Systems Analysis, Development, Scientific Applications, and Web Administration.
- Data Services provides maintenance, support, and upgrades for agency databases, data warehouse, and business intelligence, reporting, and analytics solutions.
- The Information Security office oversees the agency's Information Security Program.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

TWDB
Exhibit 12: IT Program Statistics and Performance Measures — FY 2020

Program Statistics or Performance Measures	Dataset Reference Number* (if applicable)	Calculation (if applicable)	FY 2020 Target	FY 2020 Actual Performance	FY 2020 % of Annual Target
Number of incident tickets processed				7236 (FY21)	
Number of change tickets processed				503	
Project metrics – active, requested, and closed projects				10 active, 11 requested, 7 closed	
Number of applications supported				75	
Number of servers supported				60	
Number of workstations supported				500	
Number of application maintenance/enhancement releases				30	
Number of business intelligence reports/dashboards created				209	
Number of critical/security system patches released				127	
Number of security alerts processed				324	
Number of security reviews conducted (e.g., software requests, new projects, application enhancements)				124	
Number of TWDB meetings facilitated				68	

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

The technology landscape is growing and changing rapidly. This has resulted in increased demands on the IT division, resulting in organizational changes and growth. The FTE count has grown by more than 25 percent over the last eight years, to include Information Security with a designated Information Security Officer and Data Services with a designated Data Officer.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

N/A

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

IT strategic goals and objectives are reviewed regularly and align with agency needs, and the State Strategic Plan for Information Resources Management. The Chief Information Officer attends agency leadership meetings, a project prioritization/review meeting is held with the Executive Administrator quarterly, and the IT leadership team has quarterly meetings with leadership teams from key business areas. Agency IT needs are received, documented, and tracked via help desk tickets, change tickets, and project request forms. IT Security policies, the Information Security Program, the Business Continuity Plan, and the Disaster Recovery Plan are reviewed on an annual basis. A third-party Controlled Penetration Test is performed annually, and agency vulnerability scans are performed regularly. The Agency Security Plan and a third-party Risk Assessment are conducted every two years.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
General Revenue	$	3,715,589
Federal Funds	$	938,823
Flood	$	358,419
Grand Total	$	5,012,831

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

N/A

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

N/A

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

IT does not work directly with local or regional units of government. IT receives security alerts from federal entities such as the Multi-State Information Sharing and Analysis Center and the Cybersecurity and Infrastructure Security Agency. These alerts are part of the Department of Homeland Security's cybersecurity information sharing program with state, local, tribal, and territorial governments. IT also receives alerts from the statewide Chief Information Security Office at the DIR.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

IT contracts are for Shared Technology Services program participation; third-party vendor assistance with Amazon Web Services cloud backups; live streaming and archiving of agency public meetings; and application maintenance, enhancements, and reports.

- **the amount of those expenditures in fiscal year 2020;**

$1,581,484

- **the number of contracts accounting for those expenditures;**

7

- **the method used to procure contracts;**

The agency adheres to DIR's guidelines for state IT procurements.

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
Department of Information Resources	$1,201,349.44
Northbridge Environmental Management	$145,302.50
Northbridge Environmental	$86,400.00
Northbridge Environmental Management Consultants	$56,392.00
RFD & Associates	$50,000.00

- Shared Technology Services (DIR) – participation in this program is required for the TWDB and includes the hosting and maintenance of public and private cloud environments.
- TxWISE Enhancements (Northbridge Environmental) – enhancements to the TxWISE application.
- TxWISE Maintenance (Northbridge Environmental Management Consultants) – maintenance of the TxWISE application.
- TxWISE Reports (Northbridge Environmental Management Consultants) – TxWISE report development and enhancements.
- Online Loan Application Maintenance (RFD & Associates, Inc.) – maintenance of the online loan application.

- **the methods used to ensure accountability for funding and performance; and**

Invoices and payments are reviewed and authorized by a designated contract manager and are tracked in the Contract Administration System application. Where necessary, regular status reports are required by the vendor and Contract Managers address issues with vendors in an appropriate and timely manner.

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

IT's primary challenges are maintaining adequate, qualified staffing resources to meet the technology demands of the agency while keeping pace with a quickly changing, increasingly complex, and rapidly growing technology environment with multiple security requirements with short timelines for implementation.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

N/A

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Operations and Administration: Support Services

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Support Services

Location/Division: Austin/Operations and Administration, Support Services

Contact Name: Kelly Burton, Support Services manager

Statutory Citation for Program: Texas Water Code §§ 6.183 and 6.184

B. What is the objective of this program or function? Describe the major activities performed under this program.

Support Services provides mail services, fleet management, staff support, and facility support such as office space management, lease management, building safety, telecommunications, and other support functions of the agency as needed. The division also provides Board meeting and special event coordination. The Support Services manager additionally serves as the agency's property manager.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

TWDB
Exhibit 12: Support Services
Program Statistics and Performance Measures — Fiscal Year 2020

Program Statistics or Performance Measures	Dataset Reference Number* (if applicable)	Calculation (if applicable)	FY 2020 Target	FY 2020 Actual Performance	FY 2020 % of Annual Target
New employees (access, phones, parking, office assignments, etc.)				79	
Terminating employees				30	
Office moves				130	
Minor construction projects				3	
Assets managed				922 ($38,124,350.37)	
Fleet managed (registration, inspection, assignments, maintenance, etc.)				49	

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

Support Services is currently in the process of redefining and developing procedures more conducive to a hybrid workforce. Some methods for providing traditional services must change

slightly such as virtual onboarding of new staff. This new method of onboarding requires Support Services to shift methods for issuance of badge and parking assignments.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

N/A

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

The Support Services manager reports to the Deputy Executive Administrator for Operations and Administration. Support Services is comprised of three full-time employees housed at the agency's main headquarters and maintains ownership of agency policies such as the Vehicle Management and Mail Operations policies. The division works closely with the Texas Facilities Commission and agency staff to maintain regional leased properties.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
General Revenue	$	252,692
Federal Funds	$	150,688
Flood	$	519,000
Grand Total	$	922,380

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

No other internal or external programs provide identical or similar support to the TWDB.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Although there is no duplication of functions, Support Services coordinates closely with internal agency business areas such as Finance, HR, and IT to manage broader programs such as health and safety, employee onboarding, asset management, and property receiving. Support Services maintains agreements such as those with the Department of Public Safety for driving records as well as the University of Texas at Austin for fleet services.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

Primary external stakeholders for Support Services include other state agencies such as the Comptroller of Public Accounts for mail operations, the DIR for telecommunications services, the Texas Department of Public Safety for parking and badge services, and the Texas Facilities Commission for building maintenance, lease services, and minor construction.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**
- **top five contracts by dollar amount, including contractor and purpose;**
- **the methods used to ensure accountability for funding and performance; and**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

N/A

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

N/A

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

VII. Guide to Programs: Water Supply and Infrastructure

Water Supply and Infrastructure is composed of four divisions: Program Administration and Reporting, Regional Water Planning and Development, Water Supply Planning, and Flood Planning.

Program Administration and Reporting works closely with Finance to ensure the agency's state and federal financial assistance programs meet the needs of our customers, comply with program requirements, provide for the timely disbursement of funds, and report on the benefits of the agency's efforts in developing water projects for Texas. Work includes assessing program funding capacity; preparing program schedules; drafting program parameters and developing and making available project information forms; preparing funding program intended use plans; tracking program funds and general funding program activities; and authorizing releases of funds to borrowers.

Regional Water Project Development works closely with Program Administration and Reporting and with the TWDB's customers to provide guidance and support to potential borrowers seeking funding for the development and construction of water supply, wastewater, and flood projects throughout Texas. This includes overseeing the development and review of funding applications from environmental, legal, engineering, and repayment perspectives and obtaining board authorizations to fund projects and coordinating with Finance to assist in closing on funds.

Water Supply Planning develops the agency's 50-year state water plan based on 16 regional water plans. In support of this effort, the division collects, evaluates, maintains, and disseminates state water use data; develops population and water demand projections;

administers the regional water planning process; and provides technical and financial support to the 16 regional water planning groups.

Flood Planning supports the regional flood planning process and will be responsible for developing the first state flood plan in 2024. In support of this effort, the division prepares statewide flood planning datasets for the regions; administers the regional flood planning process; and provides technical and financial support to the 15 regional flood planning groups. The division also oversees the agency's watershed flood protection studies program including reviewing applications, obtaining Board authorizations to fund studies; developing and managing the contracts; and reviewing study deliverables.

Water Supply and Infrastructure: Program Administration and Reporting

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Program Administration and Reporting

Location/Division: Austin/Water Supply and Infrastructure

Contact Name: Mark Wyatt, Director

Statutory Citation for Program: CWSRF and DWSRF – Texas Water Code, Chapter 15, Subchapter J. (Federal: CWSRF program: 33 U.S. Code §§ 1251 - 1387; DWSRF program: 42 U.S. Code § 300j–12)

SWIFT: Texas Water Code, Chapter 15, Subchapters G and H.

FIF: Texas Water Code, Chapter 15, Subchapter I (and by reference Texas Water Code Chapter 15, Subchapter F)

EDAP: Texas Water Code, Chapter 16, Subchapter J and Chapter 17, Subchapter K

Texas Water Development Fund: Texas Water Code, Chapter 17, Subchapter L.

B. What is the objective of this program or function? Describe the major activities performed under this program.

Program Administration and Reporting consists of four areas that develop enhancements to existing programs and implement new programs; ensure program compliance with federal and state requirements; report on the outcomes and benefits from the agency's financial assistance programs; disburse funds to program recipients; and provide outreach and assistance to agency customers and the public.

Program Administration performs duties that include the following:

- Prepare the CWSRF, DWSRF, FIF, and EDAP intended use plans that contain eligibility criteria, structure of financial assistance, any program subsidies, and criteria to be used for the prioritization of applications, and for the two SRFS, the priority list of projects

- Prepare funding notices, guidelines and required information for the applicants to submit for all programs, including the SWIFT program
- Prepare prioritization procedures and timelines
- Review, score, and rank submitted requests for project funding
- Invite projects to submit applications
- Prepare allocations of available funds to projects and track the funding status
- Prepare guidance documents to use for program delivery
- For the SRFs, prepare the SRF grant application to submit to EPA
- Develop and guide the implementation of enhancements to the agency financial loan/grant management systems
- Prepare specifications for TxWISE reports and modifications
- Prepare for the EPA annual review of the SRFs for the Program Evaluation Report and provide responses to EPA
- Prepare Texas Administrative Code amendments
- Prepare website revisions

Reporting performs duties that include the following:

- Produce required annual/biennial reports regarding the SRFs and SWIFT
- Submit reports to EPA on annual SRF performance measures
- Review submissions for compliance with Disadvantaged Business Enterprise requirements under the CWSRF and DWSRF programs
- Make ongoing data entries into federal and agency database systems on a monthly basis
- Prepare reports on the agency's quarterly State Performance Measures
- Prepare required flood reporting
- Develop and prepare program implementation reporting for management, the agency website, and as exhibits in formal reports
- Develop new tools to assist staff in managing project implementation and workload prioritization
- Perform the EPA's statewide Clean Watersheds Needs Survey and Drinking Water Infrastructure Needs survey approximately every four years, as a condition of the SRF annual capitalization grants, to identify and document the cost of infrastructure required to meet the water quality and public health goals of the Clean Water Act and which is used as part of the basis for allocating federal funds to states.
- Prepare reports for publication on the agency website
- Prepare numerous ad hoc reports requested by management, the media, and to fulfill public information requests
- Perform the Business Team function for the agency's loan and grant management system known as TxWISE; these responsibilities include managing all enhancements to the system and serving as the technical experts to assist other agency staff

Outlays and Escrow Release processes the disbursement of funds to recipients for most of the agency's financial assistance programs. All processes are fully electronic.

- Outlays and Escrows performs many crucial functions in financial program delivery, including the review and processing of outlay requests, the subsequent release of funds from bank escrow accounts, the tracking and supporting documentation necessary for drawing down federal funds from EPA, closing on commitments, and ensuring program financial compliance during the annual EPA financial reviews.
- The outlay report is the mechanism for the program recipients to request disbursements of funds based on supporting invoices that are employed for many of the agency's programs. The department authorizes the release of program funds that were deposited into the recipient's bank escrow account upon satisfaction of agency requirements or process an installment disbursement of funds.
- A financial analyst receives and reviews the outlay request and then routes to the program manager/engineer for review and approval of submitted expenses. The program manager/engineer either approves the request or, if appropriate, denies all or a portion through a disallowance. Upon subsequent review and approval by the manager or director of Program Administration and Reporting, the funds are disbursed typically through a letter directing the bank to release funds from the recipient's escrow account to its construction account. Funds are then used to pay contractors for work performed on the project.
- Projects that do not require an outlay with invoices in advance of disbursement use a review, approval, and release from an escrow account.
- The department works with Finance to submit the documentation necessary to draw down funds from the EPA. The department tracks the required state match under the CWSRF and DWSRF programs that determines when Finance may draw down federal dollars from EPA.
- The financial analyst works with the project manager/engineer and financial analyst in Regional Water Project Development if funds are being released at closing and an outlay is required. The department subsequently works with Finance to ensure all outlay paperwork is submitted for the closing.
- The department handles EPA review of the agency's disbursements of CWSRF and DWSRF funds.

The fourth section of Program Administration and Reporting is Outreach. Duties include:

- Providing onsite assistance to potential and existing customers to explain the agency's financial assistance opportunities or provide technical assistance
- Coordinating with the Regional Water Project Development team serving the area to ensure all the customer's questions are answered and to connect them with the staff who would handle the review of their application and project implementation
- Providing special assistance to systems with issues directly affecting public health
- Making presentations at financial assistance workshops and other public venues
- Responding to requests for financial assistance information and explaining funding options available that may meet customer needs
- Conducting outreach and training such as webinars for completing applications

The **CWSRF** assists communities by providing below market-rate financing and various levels of principal forgiveness for a wide range of projects that facilitate compliance with the water pollution control requirements of the Clean Water Act. The TWDB through its CWSRF program finances creation or improvement of wastewater treatment facilities, reuse/recycle facilities, and collection systems, control of nonpoint source pollution, implement green projects, and manage stormwater.

The **DWSRF** assists communities by providing below market-rate financing and various levels of principal forgiveness for a wide range of projects that facilitate compliance with primary drinking water standards or otherwise significantly further the health protection objectives of the Safe Drinking Water Act. The TWDB through its DWSRF program finances corrections to public water system deficiencies including water quality, capacity, pressure, and water loss, upgrades or replacements of public water systems, implements green projects, and implements source water protection projects.

FIF assists in financing drainage, flood mitigation, and flood control projects, including planning and design activities, work to obtain necessary regulatory approvals, and construction and/or implementation of flood projects.

EDAP provides financial assistance in the form of grants and loans for water and wastewater projects in economically distressed areas where service is unavailable or is inadequate to meet state standards. Projects must be located in counties that are enforcing adopted Model Subdivision Rules. Eligible Projects include planning, design, acquisition, and construction for first-time service or improvements to water supply or wastewater collection and treatment works. Applicants eligible to apply for assistance include political subdivisions and nonprofit water supply corporations.

The **Texas Water Development Fund** (often referred to as "DFund") provides financial assistance in the form of loans for water supply, wastewater, and flood control projects. The program allows the funding of water and wastewater projects concurrently with one commitment and closing and has broader eligibility than the SRF programs. The recipient benefits from the lowest possible interest rate due to the state's high credit rating. No grant funds are authorized for this program per statute.

The **RWAF** program 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, including nonprofit water supply corporations, serving a population of 10,000 or less and counties in which no urban area has a population exceeding 50,000. The main advantage over the Texas Water Development Fund is that nonprofit water supply corporations are exempt from paying sales tax incurred on any project financed by the RWAF program. (Note: The program has not been active in recent years because it has been largely supplanted by the Clean Water and Drinking SRF programs.)

The **State Participation** program enables the TWDB to provide funding and assume a temporary state ownership interest in a regional water, wastewater, or flood control project when the local sponsors are unable to assume debt for an optimally sized facility. This encourages the optimum development of regional projects by funding excess capacity for future use. Eligible projects are planning, design, acquisition, and construction for the following excess capacity of regional projects for water supply, including reservoirs, well fields, and water rights; wastewater; and flood control. (Note: Since its inception in 2013, the SWIFT program has been able to meet the needs for temporary state ownership of projects recommended in the state water plan, so the State Participation program is no longer used for that purpose.)

The **SWIFT** program helps communities develop and optimize state water plan 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.

For reference, Attachment VII.B. TWDB Funding Commitments Since Inception shows the TWDB's financial commitments since the inception of the agency, with amounts by program and amounts by county.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

N/A

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

Enhancements to the Clean and Drinking Water SRF programs include the following:

FY 2015

- Increased CWSRF and DWSRF loan terms up to 30 years
- Increased the number of eligible activities in the CWSRF program based on authority under the Water Resources Reform and Development Act
- Created an Urgent Need funding option for projects that will address situations that require immediate attention to protect public health and safety offered principal forgiveness and later zero percent loans
- Increased the loan capacity in CWSRF and DWSRF programs

FY 2016

- Incorporated new affordability criteria based on income, unemployment rates, and population trends

FY 2017

- In response to Hurricane Harvey, created the Emergency Relief funding option in the CWSRF program with principal forgiveness and zero percent loans. In the DWSRF program, increased the amount of principal forgiveness and zero percent loan funds available in the Urgent Need funding option to assist with disaster recovery.

FY 2018

- Established a special Disadvantaged Small/Rural funding option with principal forgiveness and zero interest loan funding to assist small and rural projects.
- Increased amount available under the DWSRF program's Very Small Systems funding option
- Set aside a portion of the DWSRF program's Urgent Need funds for Disadvantaged/Small/Rural projects

FY 2019

- Implemented an Asset Management Program for Small Systems initiative. The TWDB has developed and implemented an initiative to assist small water and wastewater utilities in creating an asset management plan for managing their systems in a financially and technically sustainable manner
- Established an ongoing cash flow transfer mechanism between the CWSRF and the DWSRF programs.
- Increased the capacity of the CWSRF and DWSRF programs.

FY 2020

- Provided $75,000 with an interest rate of zero percent for any entity, not just small systems, to prepare an asset management plan
- Implemented a "CFO to Go" initiative where TWDB contracts with Certified Public Accountants to provide technical assistance services to designated SRF recipients. The TWDB selects recipients determined to be in need of special assistance from a CPA to maintain adequate compliance with the requirements of the SRF programs
- Established that any funded project regardless of the type of assistance received must demonstrate to the TWDB that it is viable, feasible, and sustainable

- Implemented a new initiative in the DWSRF program called Securing Safe Water that involves a comprehensive outreach, technical assistance, and funding strategy to reduce the number of public water systems that have unresolved health issues. It will support the goal of significantly reducing the number of public water systems with reported health violations. The TWDB allocated a portion of the Very Small Systems and Urgent Need funding to the Securing Safe Water initiative

FY 2021

- In further support of asset management planning, a small system eligible under AMPSS may receive up to $500,000 at zero percent for a portion of the total TWDB funding for a project if it has implemented substantially all of the Asset Management and Financial Planning tools required in the current AMPSS initiative.

- Further, any eligible entity, not just small system, is eligible for up to $100,000 with an interest rate of zero percent to prepare all of the Asset Management and Financial Planning tools required in the current AMPSS initiative.

FY 2022

- Established a new interest rate reduction methodology with a percentage reduction from the Thomson Reuters Municipal Market Data rate adjusted for yield to maturity

- Implemented an initiative to enhance Emergency Preparedness for Severe Weather. Allocated principal forgiveness for the preparation of an emergency preparedness evaluation/audit plan. Entities could receive funding to determine compliance with statutory and regulatory standards of emergency operations that directly affect operation of a public water system during an extended power outage from severe weather that impacts the system

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

The eligibility requirements vary for each financing program based on law and the agency's policy determinations. Notably, the definition of "political subdivision" can vary by program.

The requirements for the CWSRF are detailed in the annual IUP:

The requirements for the DWSRF are detailed in the annual IUP.

The requirements for the FIF program are detailed in the 2020 Flood IUP.

Eligible FIF activities are organized into four categories:

- Category 1 (managed by Flood Planning staff): Conduct planning of entire watersheds no smaller than Hydrologic Unit Code 10-digit (HUC-10) to better inform the development of strategies using structural and nonstructural measures before a flood event, such as determining and describing problems from or related to flooding, identifying and planning solutions to flooding problems, and estimating the benefits and costs of these solutions.

- Category 2 (managed by Regional Water Project Development staff): (a) Planning, Acquisition, and Design includes activities related to planning, land acquisition, and/or design of the project. Planning includes feasibility analyses, detailed hydraulic and hydrological studies, activities to obtain regulatory approval, and coordination of other related work; and (b) Construction, Rehabilitation, and Implementation includes construction and rehabilitation activities, but may also include demolition, decommissioning, and other activities not necessarily thought of as construction. Rehabilitation must take into consideration methods of improving resiliency.

- Category 3 (managed by Flood Grant Coordination staff): for communities that have received a federal award for flood-related activities contingent on the availability of local matching funds. Grant funds may be provided for a portion of the applicant's required federal match amount.

- Category 4 (managed by Flood Grant Coordination staff): Projects are those that can be implemented quickly and are understood to be immediately effective in protecting life and property. Eligible Category 4 projects include warning systems, crossing barriers, gages, and public education and outreach. This category does not include large scale, major planning, acquisition, and design and/or construction/rehabilitation-type projects. The TWDB does not maintain an exhaustive list of activities eligible under Category 4, and applicants are encouraged to discuss possible Category 4 proposals with TWDB staff.

Applicants eligible to apply for FIF assistance include:

- Political subdivisions of the state are eligible to apply for financial assistance for flood mitigation projects. This includes cities, counties, and any district or authority created under Article III, Section 52 or Article XVI, Section 59 of the Texas Constitution.

- For Category 1 only, eligible applicants also include any other political subdivision of the state, any interstate compact commission to which the state is a party, and any nonprofit water supply corporation created and operating under Chapter 67.

For the Water Development Fund, eligible applicants are all political subdivisions of the state (at tax exempt rates) and nonprofit water supply corporations (at taxable rates). Political subdivisions include cities, counties, districts, and river authorities.

For EDAP, eligible applicants include cities, counties, water districts, nonprofit water supply corporations, and all other political subdivisions. The city or county where the project is located

must adopt and enforce Model Subdivision Rules for the regulation of subdivisions (Texas Water Code §16.343). In addition, projects must also be located in an economically distressed area where the median household income is not greater than 75 percent of the median state household income, been an established residential subdivision as of June 1, 2005, and have water or sewer services that are inadequate to meet the minimal needs of residential users as defined by TWDB rules (Texas Administrative Code, Title 31, Part 10, Subchapter E, Rule §363.503).

For the SWIFT program, any political subdivision of the state or nonprofit water supply corporation with a project included as a recommended strategy in the most recent state water plan is eligible for financial assistance. Political subdivisions can include municipalities, counties, river authorities, special law districts, water improvement districts, water control and improvement districts, irrigation districts, and GCDs

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Program Administration and Reporting performs the tasks generally described under item B for all financing programs assigned to Water Supply and Infrastructure. Each agency financing program follows its own annual or other cycle or process depending on the program structure. Timelines for each program are described below.

CWSRF and DWSRF

- Open the Annual Intended Use Plan project submission cycle in December after the U.S. Census Bureau releases its latest data used for the program
- Project Information Forms submissions for the initial Intended Use Plan Project Priority Lists are due the following March
- Review, score, and rank projects submitted by deadline – Summer
- Publish draft Intended Use Plan including Project Priority Lists for public comment – late Summer
- Adopt Intended Use Plan and send out initial invitations to submit applications
- Review applications submitted, allocate funding, recommended to the Board for commitment, and close on commitments – ongoing SWIFT program
- Open the annual cycle in December
- Abridged applications are due the following February

- Board considers prioritization of abridged applications, identifies amount of funds available by category, and TWDB extends invitations to submit complete applications for financial assistance – Spring/Summer
- Board establishes financing structure and subsidy terms – Spring/Summer
- TWDB reviews submitted applications and make recommendations to Board for commitments – Summer
- TWDB conducts a bond sale and closes on commitments – Fall/Winter

Flood Infrastructure Fund (only one cycle has occurred under this program to date):

- The TWDB published a draft Flood Intended Use Plan for public comment and requested abridged applications - Spring 2020
- Abridged applications were received and reviewed - Summer of 2020
- Board approved the Flood Intended Use Plan – September 2020
- The Board considered the project prioritization list, identified the amount available for new applications, established the structure of financing, and the terms of subsidy – September 2020
- Invitations to submitted full applications were extended to a specific number of projects in rank order – Fall 2020
- TWDB staff reviewed submitted applications and made recommendations to the Board – Fall 2020
- TWDB continued to invite additional projects in rank order to submit full applications
- TWDB closed /executed grant agreements for commitments - ongoing

EDAP

The TWDB anticipates establishing a cycle similar to the SWIFT program and SRF program cycles using a newly developed EDAP Intended Use Plan to establish specific prioritization criteria and subsidy determinations. Prior funding occurred either as needed and in 2018 as a one-time prioritization process and method of allocating available funds.

Texas Water Development Fund

- An eligible entity may submit an application at any time. The TWDB reviews the submitted application and makes a recommendation to Board for commitment. If the Board provides a commitment, depending on the amount of funds provided, the TWDB may conduct a bond sale. Upon availability of funds, the TWDB closes on the commitment.

- The Program Administration department has coordinators assigned to specific financing programs to provide technical assistance and ensure compliance with state and federal laws and regulations. Staff are cross trained to assist in other program areas. The Manager of Program Administration coordinates tasks and assigns staff to assist in other priority areas as needed.

- Reporting has staff assigned based on the financing program, source of funding, and type of activity.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
General Revenue	$	435,022
Federal Funds	$	632,625
Flood	$	109,400
Grand Total	$	1,177,047

CWSRF: Federal capitalization grants are provided annually from the EPA. The EPA allocates funds to the states based on a statutory formula. The TWDB allocates funding at the project level and the details are included in the annual IUP.

DWSRF: Federal capitalization grants are provided annually from the EPA. The EPA allocates funds to the states based on a Drinking Water Infrastructure Needs Survey and Assessment typically conducted every four years. The TWDB allocates funding at the project level and the details are included in the annual IUP.

FIF: Funding was initially transferred to FIF from the state's Economic Stabilization Fund in accordance with SB 500, 86th Legislative Session, and is available for expenditure on authorized projects without further appropriation. These funds are awarded according to the Flood Intended Use Plan and will likely be fully allocated to the entities that have already submitted

abridged applications and have been prioritized. A modest amount of funds may be available for future use as loans are repaid.

SWIFT: In 2013, HB 1025 authorized a one-time, $2 billion supplemental appropriation from the state's economic stabilization fund to SWIFT. The SWIFT fund is available to support revenue and general obligation bonds issued by the TWDB to fund state water plan projects. The amount available for each funding cycle is based on TWDB Board determination. The Board considers a staff recommendation on the project prioritization list, amount of funds available by category (such as low interest rate loans, deferments, and Board participation), and terms of subsidy to offer. To date, the program has been able to fund all applications recommended for Board commitment.

Water Development Fund: There is no allocation of state or federal funds. Funds are obtained from the TWDB's sale of general obligation bonds sufficient to close on the funding commitment.

EDAP: State appropriations supplement the debt service on bonds sold to provide the project funding. During the 86th Legislative Session, SB 2452 revised the program to add prioritization criteria, change the amount of funding in the form of grants, allow the loan portion of come from another financing program, and create a new annual report requirement. In addition, SJR 79 and subsequent voter approval of Proposition 2 amended the Texas Constitution to provide that an aggregate principal amount of TWDB general obligation bonds issued for EDAP that are outstanding at any time does not exceed $200 million. The 87th Legislature appropriated $6,087,500 and will allow up to $100 million in EDAP financial assistance in the next biennium.

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

The closest program in size and scale to the TWDB's water and wastewater financial assistance programs would be the U.S Department of Agriculture Rural Development's various water and wastewater financing programs. The Texas Department of Agriculture's Community Development Block Grant program provides financing to similar projects on a smaller scale.

For flood mitigation funding, the GLO Community Development Block Grant mitigation funding, which is neither an annual nor recurring source of funding, is similar although they have recently shifted to allocating large portions of the available funds to either Councils of Government or affected counties to allocate to specific projects. TDEM administers several federal programs that can fund disaster mitigation activities, including flood mitigation; their programs are most similar to the FEMA Flood Mitigation Assistance program administered by the TWDB (see Water Science and Conservation, Flood Grant Coordination)

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

The TWDB meets monthly with TCEQ staff to discuss the DWSRF program, including topics such as projects with public health issues that are in need of financial assistance.

The TWDB uses two other coordinating groups to avoid duplication of effort and direct entities to the best fit for obtaining financing for their project. The TWDB was a founding member of the Texas Water Infrastructure Coordination Committee, or TWICC, which is a "one-stop shop" for information on funding eligibility or technical assistance for water systems facing infrastructure or compliance issues. TWICC is a collaborative effort by state and federal government agencies and technical assistance providers promoting an efficient process for affordable, sustainable, and innovative funding strategies for water and wastewater infrastructure projects that protect public health. In addition to the TWDB, members include the EPA, U.S. Department of Agriculture, Texas Department of Agriculture, TCEQ, Texas Public Utilities Commission, Texas Rural Water Association, Communities Unlimited, Inc., American Water Works Association - Texas Section, North American Development Bank, and the Bureau of Reclamation, U.S. Department of Interior.

For flood, the TWDB is similarly a founding member of the FLICC, which is a group of cooperating agencies that regularly meet to review funding inquiries submitted to the committee and to coordinate the use of state and federal funding for flood mitigation projects. These agencies include TDEM, GLO, TWDB, and the Texas State Soil and Water Conservation Board.

The TWDB has an MOU with TCEQ for the use of the DWSRF set-aside funds from the annual EPA capitalization grant. These grant funds provide for the TCEQ's State Program Management activities, Small Systems Technical Assistance, and Local Assistance and Other State Programs activities as permitted in the federal regulations for the DWSRF program.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

The TCEQ and the TWDB execute an agreement each year for the administration of the DWSRF program set-aside funds from the EPA capitalization grant. The federal regulations for the DWSRF program allow a portion of the annual EPA capitalization grant to be used for certain activities known as set-asides. The set-aside funds are provided to TCEQ for its DWSRF State Program Management activities, Small Systems Technical Assistance, and Local Assistance and other activities.

Local units of governments are the predominate recipient of funding. Local governments submit Project information Forms which enables consideration for inclusion in the annual Intended Use Plans. The involvement with regional and federal governments, aside from EPA's program oversight, is mainly coordination on funding activities and outreach.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

The TWDB has developed and implemented an Asset Management Program for Small Systems initiative whereby the TWDB hires consultants to assist smaller water and wastewater utilities in creating a plan for managing their systems in a financially and technically sustainable manner by delivering management tools developed by the TCEQ.

- **the amount of those expenditures in fiscal year 2020;**

$61,130

- **the number of contracts accounting for those expenditures;**

3

- **the method used to procure contracts;**

Requests for Qualifications were submitted by firms interested in providing the asset management services. They were then placed on a "qualified contractors" list from which participating communities selected the firms they wanted to work with.

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
BSP Engineers, Inc	$27,975.00
KSA Engineers, Inc	$17,033.38
KSA Engineers, Inc	$16,121.50

The purpose of the contracts is to evaluate the existing system and create an asset management plan in accordance with the guidelines created by TCEQ's Small Business and Governmental Assistance Section. Deliverables include an Asset Management Plan, System Operations and Maintenance Manual, training for system management and staff, a compliance manual, and other items such as updated drought contingency or water conservation plans if needed.

- **the methods used to ensure accountability for funding and performance;**

A report was required from each contractor at the end of the contract period to document their adherence to the scope of work. Draft reports were reviewed by staff with comments provided as necessary before final reports were submitted. While the work was being performed, each contractor invoice was also reviewed by program staff as part of the approval process before funds were released.

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

Grants are awarded under FIF and EDAP. Grants in the FIF program are allocated according to the methodology set forth in the 2020 Flood Intended Use Plan.

In the SRF programs, principal forgiveness is provided based on criteria found in the respective Intended Use Plans. Principal forgiveness, which is forgiveness of the loan principal amount, is not considered grant funding by EPA or the TWDB.

In both the Clean Water and Drinking Water SRF programs, under an initiative known as "Asset Management Program for Small Systems," the TWDB awards contracts to qualified entities such as engineering firms to evaluate the small water and wastewater utilities and create an asset management plan for managing their systems in a financially and technically sustainable manner. This innovative, new form of assistance is considered administration and technical assistance by the TWDB.

Under EDAP, a nuisance determination that is based on an existing situation in the project area considered dangerous to the public health is required in order for a project to be eligible for greater than 50 percent grant funds.

The relatively new FIF program awarded grants in the amount of $142,869,593 as of June 30, 2021.

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

As mentioned above, the greatest challenge impeding the performance of the agency's programs is managing staff workloads as volume continues to increase as a result of new programs and difficulties in filling engineering vacancies. The current operational structure is based on a regional team concept; however, in order to balance workload, projects are often reassigned to other teams serving another geographic area.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

A full understanding of these programs can be found in resources available on the agency's financial assistance website:

CWSRF

- IUP
- Texas Administrative Code, Title 31, Part 10, Chapter 375
- Summary information is available on the program website

DWSRF

- IUP

- Texas Administrative Code, Title 31, Part 10, Chapter 371
- Summary information is available on the program website

FIF

- IUP
- Texas Administrative Code, Title 31, Part 10, Chapter 363, Subchapter D
- Summary information, including a map showing active commitments, is available on the program website

EDAP

- Texas Administrative Code, Title 31, Part 10, Chapter 363, Subchapter E
- Project implementation details are found in the SFY 2020 Annual Report

Water Development Fund

- Texas Administrative Code, Title 31, Part 10, Chapter 363
- Summary information is available on the program website

SWIFT

- 2020 Biennial Report on the Use of the State Water Implementation Fund for Texas 87th Legislature
- Texas Administrative Code, Title 31 Part 10, Chapter 363, Subchapter M
- Summary information, including project implementation maps, can be found on the program website

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If

necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Supply and Infrastructure: Regional Water Project Development

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Regional Water Project Development

Location/Division: Austin/Water Supply and Infrastructure, Regional Water Project Development

Contact Name: T. Clay Schultz, Director

Statutory Citation for Program:

CWSRF and DWSRF: Texas Water Code, Chapter 15, Subchapter J. (Federal: CWSRF program: 33 U.S. Code §§ 1251–1387; DWSRF program: 42 U.S. Code § 300j–12)

SWIFT: Texas Water Code, Chapter 15, Subchapters G and H.

FIF: Texas Water Code, Chapter 15, Subchapter I (and by reference Texas Water Code Chapter 15, Subchapter F)

EDAP: Texas Water Code, Chapter 16, Subchapter J and Chapter 17, Subchapter K

Texas Water Development Fund: Texas Water Code, Chapter 17, Subchapter L

B. What is the objective of this program or function? Describe the major activities performed under this program.

Regional Water Project Development includes six regional teams, one statewide team, a business processes team, a director, an executive assistant, and a credit manager. Regional Water Project Development is responsible for the coordination, review, and management of TWDB-funded projects to ensure compliance with applicable programmatic rules and regulations (see Water Supply and Infrastructure, Program Administration and Reporting). Functions include performing outreach and pre-application coordination, financial analysis, engineering, and environmental reviews of financial applications, review and coordination of closings, and review and coordination of projects from the planning phase through project closeout. This work is focused on ensuring compliance with applicable state and federal requirements, including those detailed in the Texas Administrative Code, the Texas Water Code, and federal requirements discussed elsewhere.

Regional Water Project Development staff coordinate closely with applicants for financial assistance and their consultants starting with informational and/or pre-application meetings. As

needed throughout the life of a project, staff coordinate with the outreach team in the Program Administration and Reporting Division of the TWDB to ensure customer questions are answered and concerns are addressed. This collaboration between the teams and the outreach team allows for additional flexibility when it comes to accommodating in-person meeting requests around the state and requests for presentations to interested parties.

After receipt of financial assistance applications, staff lead and coordinate the technical review of each application, which involves staff from throughout the TWDB and, in many cases, coordination with other state agencies such as the TCEQ. Once the technical review of an application is complete, staff present recommendations to the Board for consideration. After a Board commitment is approved, staff coordinate closings on financial commitments. Following the closing on a financial commitment, staff, particularly the team managers, engineering staff, and environmental review staff, work closely with the borrower and its consultants to review and approve project planning, acquisition, design, and construction related documents, including reviewing and approving requests for funding releases, in accordance with applicable program requirements.

Regional Water Project Development staff coordinate with other state and federal government agencies including, for example, the EPA, the TCEQ, TPWD, the Texas Historical Commission and the State Historic Preservation Officer, the U. S. Army Corps of Engineers, and the U. S. Fish and Wildlife Service. Staff may also coordinate with other funding agencies such as the GLO, Texas Department of Agriculture, and the U. S. Department of Agriculture on a project-by-project basis and as part of the TWDB's participation in the TWICC.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

N/A

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

The Regional Water Project Development regional team structure was put in place by an agency re-organization in the fall of 2013 to create a "one-stop shop" for entities seeking funding from the TWDB. Prior to the reorganization, engineering, environmental, financial analysis, and project oversight were in separate areas. The regional team structure provides for all project management functions under one team by region. With the introduction of the FIF program, a seventh statewide team was added to further balance workload.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

The TWDB provides financing to a variety of public entities. Applicants for financial assistance from the TWDB include political subdivisions, non-profit water supply corporations, and private entities that own and operate public water systems. As such, potential applicants include, for example, cities, authorities, districts, and counties.

In addition to applicants, Regional Water Project Development staff work closely with outside professionals working on TWDB-funded projects, including, for example, licensed professional engineers, environmental consultants, financial advisors, bond counsels, grant writers, and contractors.

Regional Water Project Development staff may also coordinate with external parties such as the Texas Associated General Contractors of Texas, the Texas Water Infrastructure Network, and other professional societies.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Regional Water Project Development consists of a director, seven multi-disciplinary regional teams, a business processes team, a credit manager, a loan specialist, and a division executive assistant. Staff are headquartered in Austin and in regional offices in Mesquite, Houston, and Harlingen.

As discussed above, each of the seven teams works on projects from pre-application through project close-out. Each team has a manager, engineering staff, including licensed and non-licensed engineering staff, an environmental reviewer, and a financial analyst. In addition, each team has an administrative assistant assigned to provide administrative support. Staff from other business areas including Water Supply Planning, Water Science and Conservation, Finance, TNRIS, and the Office of General Counsel work closely with the teams on application review, closings, and project issues as necessary.

Each discipline (e.g., engineer) includes a “discipline lead” who is responsible for maintaining and updating procedures and overseeing training within that discipline. Each team has a senior engineer who serves as the engineering subject matter expert for the team.

Regional Water Project Development financial analysts perform a credit analysis of each application for financial assistance. In July 2005, an Internal Risk Scoring System was implemented to evaluate the credit worthiness of the various financial assistance requests and to quantify the financial credit analysis component of the application review process for all loans prior to TWDB consideration. While this specific risk score process is not required by statute, it is a good business practice that helps ensure the credit worthiness of funding recipients and helps quantify potential risk associated with each applicant.

Regional Water Project Development financial advisors prepare a summary of the internal risk score that serves as part of the Executive Administrator's recommendations to the Board to fund projects. The financial advisors and credit manager serve as the TWDB's credit committee that reviews each internal risk score prepared by staff prior to submitting for Board consideration. The credit manager serves as the credit committee lead and signs off on each risk score. These internal risk scores also undergo a peer review process to help ensure accuracy and a robust process. The financial advisors, working closely with the credit manager, loan specialist, team attorneys, and finance staff, coordinate loan closings. This requires close coordination with other team members as well as outside parties, including an entity's financial advisor and bond counsel.

The teams prepare material in support of the Executive Administrator's recommendations to the Board to fund projects. Team members present such recommendations to the Board on behalf of the Executive Administrator.

Environmental review staff review TWDB-funded projects in accordance with approved procedures, agency rules, and program requirements. Environmental review requirements vary depending on the source of funds (state versus federal) and specific program requirements, as detailed in the Texas Administrative Code. The main differences between the state and federal requirements include the level of regulatory agency coordination, public participation, and ensuring the federal level review process is conducted in a manner consistent with the National Environmental Policy Act.

Environmental reviews generally result in an environmental finding (Environmental Determination, Finding of No Significant Impact, Categorical Exclusion, Statement of Findings, etc.) that is signed the Executive Administrator or the Executive Administrator's delegate, currently the director of Regional Water Project Development. Conditions developed during the environmental review process are then applied to the project and may be reflected in the construction documents to help ensure TWDB-funded projects avoid, minimize, or mitigate environmental impacts.

Engineering staff review projects from application through project closeout, including, for example, review of the preliminary engineering feasibility report submitted with the application, review of the budget and schedule, review and approval of the Engineering Feasibility Report, plans and specifications, bid documents, concurrence with a notice to proceed, and change orders. This work is driven by requirements in the Texas Administrative Code, including the TCEQ's rules and a letter of agreement between the TWDB and the TCEQ, and the Texas Water Code. Staff also conduct site visits to TWDB-funded construction projects. Engineering staff manage the project budget in the agency's project tracking database, TxWISE, and review and approve outlays and other release requests.

Team managers oversee the daily operations of the teams and serve as the primary point of contact for their assigned region. Each team manager leads their assigned team, setting priorities and providing direction, support, and oversight to effectively manage competing projects, tasks, and deadlines. Specifically, team managers lead, plan, assign, coordinate,

review, and evaluate team activities and assignments. Managers must exercise proactive management of their assigned team, the financial assistance process, and the overall management of projects in the region. They must actively maintain knowledge about requirements, projects, and applicants.

The Business Processes team includes two program specialists. This team is responsible for many tasks, including the following:

- Intake of funding applications
- Creating projects in TxWISE
- Assigning project and commitment reference numbers
- Updating and maintaining contacts and entity information in TxWise
- Assisting in coordinating work performed under the inter-agency contract with the University of Texas at Arlington
- Assisting in maintaining a record and library of all Water Supply and Infrastructure procedures
- Serving as the records management liaison for the division
- Coordinating division-related updates to the TWDB website and associated documents
- Coordinating the Certificate of Approval routing and signature process

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
General Revenue	$	1,710,360
Federal Funds	$	2,616,178
Flood	$	95,225
Grand Total	$	4,421,763

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

The TCEQ also reviews plans and specifications for water projects. The TWDB review of plans and specifications for water projects is governed by a Letter of Agreement between the TWDB and the TCEQ (Texas Administrative Code, Title 31, Part 10, Rule §354.5). The water and wastewater project reviews are conducted to ensure compliance with state design criteria and specific programmatic requirements.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Responsibility and coordination of reviews of plans and specifications for water projects with the TCEQ is governed by a Letter of Agreement in 31 Texas Administration Code 354.5.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

TCEQ

The TWDB adheres to regulations and permitting administered by the TCEQ for infrastructure under the TCEQ's jurisdiction. In addition, the TCEQ and TWDB coordinate closely in the implementation of the DWSRF program. The TCEQ also reviews some TWDB-funded projects as part of the environmental review process for consistency with the state's water quality management plan and coordination required under the Clean Air Act. The TCEQ is responsible for performing the financial, managerial, and technical assessments required in the DWSRF program.

Texas Historical Commission

The Texas Historical Commission reviews projects for potential impacts to cultural resources of the state, including historical sites, and performs other related activities within its purview. Conditions identified by the Texas Historical Commission may be included as conditions in the TWDB's environmental findings and in the construction documents as necessary.

TPWD

The TPWD reviews projects to identify potential impacts to fish and wildlife and threatened and endangered species and performs other related activities within its purview. Recommendations made by the TPWD may be included as conditions in the TWDB's environmental findings and included in the construction documents as necessary.

EPA

The EPA provides funding to the state for use in various programs. Two of the main programs include the CWSRF and the DWSRF. Programs that receive funding from the EPA are administered by the TWDB to comply with EPA requirements. Depending on the location of a TWDB-funded project, EPA may review projects for potential impacts to sole-source aquifers.

U. S. Army Corps of Engineers

The U.S. Army Corps of Engineers reviews projects for potential impacts to wetlands and navigable waterways and performs other related activities within its purview. TWDB-funded projects must adhere to permits granted by the U.S. Army Corps of Engineers. Conditions identified by the U.S. Army Corps of Engineers may be inserted into the TWDB's environmental findings and in the construction documents as necessary.

U. S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service reviews projects to identify potential impacts to fish and wildlife and threatened and endangered species and performs other related activities within its purview. Conditions identified by the U.S. Fish and Wildlife Service may be inserted into the TWDB's environmental findings and in construction documents as necessary.

Texas Department of State Health Services

Certain levels of EDAP grant funding are impacted by health and safety nuisance determinations currently made by the Texas Department of State Health Services (DSHS). The TWDB maintains an interagency contract with DSHS to perform nuisance surveys.

Funding Agencies

Project funding may be provided by other state or federal agencies. While those programs and agencies operate independently of the TWDB, the TWDB coordinates closely with other agencies providing partial funding for projects. In addition, the TWDB coordinates closely regarding funding potential projects as part of TWICC, which includes several state and federal agencies such as the Texas Department of Agriculture, the U.S. Department of Agriculture – Rural Development, EPA, GLO, etc. Information on TWICC is available on the TWICC website.

Local Governments

As noted elsewhere, TWDB applicants include political subdivisions of the state and non-profit water supply corporations.

Other Agencies

Construction in Texas, depending upon the nature of the project, can involve other local, state, or federal stakeholders for environmental review and/or construction related permitting, approvals, etc. When projects fall within these agencies' purview, the TWDB funding recipient and/or its consultants coordinate with those entities to ensure compliance with local, state, and federal requirements. These could include, for example, GLO, the International Boundary and Water Commission, the U.S. Bureau of Reclamation, the U.S. Department of Agriculture – Natural Resources Conservation Service, FEMA, the Texas Department of Transportation, local floodplain administrator, etc.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

During FY 2020, Regional Water Project Development had two active contracts. One was with Freese & Nichols, Inc., (Contract 2021602444) for an evaluation of the TWDB's engineering review process, and the other was an inter-agency contract with the University of Texas at Arlington for assistance engineering-related tasks (Contract 2000012402).

- **the amount of those expenditures in fiscal year 2020;**

$412,954

- **the number of contracts accounting for those expenditures;**

2

- **the method used to procure contracts;**

The Freese & Nichols, Inc., contract was executed on August 7, 2020, after going through a Request for Qualifications process. The purpose of this contract was to assess the TWDB's engineering review processes. The University of Texas at Arlington contract is an interagency contract that was executed on January 30, 2020. The purpose of this contract is to assist with engineering tasks, including review of plans and specifications, site visits of projects under construction, review of the CWSRF Project Information Forms for ranking to be included in the Intended Use Plan, and preparation of program guidance documents.

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
University of Texas - Arlington	$412,154.96
Freese & Nichols	$799.48

- **the methods used to ensure accountability for funding and performance; and**

Close coordination, regular meetings, and tracking deliverables and deadlines as outlined in the contract were used.

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

As noted elsewhere, grants are awarded under FIF and EDAP. Under EDAP, a nuisance determination is required for a project to be eligible for greater than 50 percent grant funds. Principal forgiveness is awarded through the CWSRF and DWSRF programs. For the grant agreements and principal forgiveness agreements managed by Regional Water Project Development, awards follow the general application and commitment process described above.

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

An ongoing challenge has been hiring qualified professional engineers and other qualified staff with engineering experience. There has been a great demand for engineers in the state and it is challenging to recruit qualified applicants at the salaries currently being offered.

While hiring has continued to be an issue, the TWDB has seen a significant increase in projects being funded, resulting in a significant increase in workload. In addition, the TWDB has seen an increase in the use of alternative project delivery methods, including Construction Manager at Risk and Design Build. While TWDB staff have worked to develop internal and external guidance and procedures to accommodate these delivery methods, this has resulted in a significant increase in workload for engineering staff due to how projects are tracked and where program specific requirements may be documented. Additional review and refinement of processes related to alternative delivery is currently underway.

A recent evaluation of the TWDB's engineering processes by Freese & Nichols, Inc., found that the agency's current project tracking database (TxWISE) may not adequately meet the specific project management needs and may not be an efficient or effective tool for managing, tracking, and monitoring the environmental and engineering reviews and approvals of projects. The TWDB is currently implementing temporary project tacking tools using Microsoft's PowerBI. Ultimately, staff intend to fully evaluate the potential for a new project management software that will not only enable more efficient internal tracking but could also provide an external facing portal for TWDB customers, which would show project status and provide information regarding required documentation or necessary steps for the project to proceed. The agency anticipates pursuing acquisition of a new project management software in the next biennium, which may require further resources.

The challenges noted above have resulted in some actual and perceived delays in project reviews and approvals. This has resulted in complaints to legislative members, Board members, and executive management. Regional Water Project Development management, working closely with the Deputy Executive Administration of Water Supply and Infrastructure and executive management, has been working to implement improvements to help the teams more effectively manage their significant workloads. This includes identifying work that could be performed by non-engineering staff, identifying potential project management tools, identifying and utilizing tools that improve efficiency in the overall review process, and clarifying procedures. This is an active and ongoing process and in itself adds additional workload to an area that is already understaffed (as noted above).

In addition, the contract with Freese & Nichols, Inc., was pursued to help evaluate current processes and identify areas where improvements could be made. Likewise, the contract with the University of Texas at Arlington was pursued to provide assistance to Water Supply and Infrastructure given the staffing and workload issues discussed above.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

N/A

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Supply and Infrastructure: Water Supply Planning

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Water Supply Planning

Location/Division: Austin/Water Supply and Infrastructure**,** Water Supply Planning

Contact Name: Temple McKinnon, Director

Statutory Citation for Program: Texas Water Code §§ 15.701–15.708, 16.012(m), 16.051, and 16.053

B. What is the objective of this program or function? Describe the major activities performed under this program.

Development of the state water plan is central to the mission of the TWDB. It is a heavily stakeholder driven, bottom-up process that relies on approximately 350 volunteer planning group members. Based on 16 regional water plans, the state plan projects water demands, evaluates existing water supplies, and identifies the needs (potential shortages) of all water user groups in the state—municipal, irrigation, manufacturing, livestock, mining, and steam-electric power—during a repeat of the drought of record that is best illustrated, on a statewide basis, by the drought of the 1950s. The plan then evaluates and recommends strategies and projects to address the identified needs. Most water needs can be met by the plan, with all

municipal water needs met thereby protecting health and welfare. Unmet needs are mostly associated with irrigated agriculture and due to the lack of economically feasible options to meet those needs in a drought.

Water Supply Planning does the following:

- Coordinates the regional water planning process
- Develops population and water demand projections
- Compiles annual municipal and industrial water use data and information regarding water sales and purchases among users and suppliers
- Collects water provider service area boundaries
- Develops estimates of agricultural water use
- Evaluates the social and economic impacts of not meeting forecasted water needs
- Develops and maintains data management structures for water planning, demand projections, and water supply and strategy analysis
- Develops the state water plan, a comprehensive guide to the water resources in the state
- Operates the Texas Water Bank (Texas Water Code Chapter 15 Subchapter K), which provides a mechanism to allow for and assist in the voluntary transfer of water rights between willing buyers and sellers

- Operates the Texas Water Trust (Texas Water Code § 15.7031), which holds water rights for environmental purposes within the Texas Water Bank

- Administers the Water Use Survey (Texas Water Code § 16.012m), an annual survey of around 6,000 water systems and industrial facilities in the state that collects the volume of both ground and surface water used, the source of the water, water sales, and other data that is used in water supply planning

- Reviews applications for financial assistance to ensure consistency with regional water plans and the state water plan, including approved population and water demand projections, and ensures compliance with Water Use Survey reporting requirements

- Provides technical support to the Interregional Planning Council (Texas Water Code § 16.052), which was created by the 86th Legislature to improve coordination among and share best management practice between the regional water planning groups

- Provides technical support to the Water Conservation Advisory Council (Texas Water Code Chapter 10), which was established by the 80th Legislature to provide state leadership, political subdivisions of the state, and the public with the resource of a select council with expertise in water conservation

- **What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or**

function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

N/A

- **Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.**

N/A

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

Sponsors that support the regional water planning groups must be political subdivisions of the state. The groups themselves represent a variety of interests as required by statute; these include agriculture, industry, environment, public, municipalities, business, water districts, river authorities, water utilities, counties, groundwater management areas, and power generation.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Every five years, each of the 16 regional water planning groups must develop and deliver a regional water plan to the TWDB. Every five years, the TWDB develops and delivers a state water plan, as adopted by the Board, to the legislature and state leadership approximately one year after the regional plans are delivered.

Water Supply Planning is divided into three departments with managers reporting to the division director; these include:

- Regional Water Planning
- Projections and Socioeconomic Analysis
- Water Use and Planning Data

The responsibilities of management include performing or delegating responsibility for the following tasks:

- Managing contracts
- Providing administrative and technical assistance to stakeholders

- Facilitating, assigning, and prioritizing projects
- Completing administrative tasks, including budget, personnel management, and strategic planning for division activities
- Reviewing products, such as reports and papers, to provide quality assurance
- Coordinating and developing processes and procedures internally and externally
- Directing updates to web content and web development
- Serving as a source person for various questions or concerns regarding the program

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
General Revenue	$	1,840,862
Federal Funds	$	24,368
Flood	$	4,153
Water Assistance Fund	$	696,209
Grand Total	$	2,565,592

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

Water Supply Planning

There are fundamental differences between water supply planning and flood mitigation planning that necessitate a different focus of attention. Water supply planning is generally about addressing long time periods of low water supplies that unfold somewhat slowly and have their greatest impact on the economy, with potential risks to health and safety, whereas

flood mitigation planning is about coping with very intense rainfall events over short time periods that quickly take lives, destroy public and private property, and disrupt the economy.

In addition, flood planning groups are organized by river basin, and the underlying science, data, and methodologies are very different between these efforts. For instance, reservoir storage must be treated entirely differently. Reservoir storage for water supply aims to keep sources as full as possible to provide water supply during times of drought, whereas reservoir storage for flood control must be kept at lower levels in preparation for the next flood event. Although water planning and flood planning are separate programs, there will be data sharing and opportunities for collaboration, such as when flood mitigation projects can provide water supply benefits.

Water Use Data Collection

TCEQ requires surface water right holders to report water use data and GCDs collect local pumping data on various scales.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

The agency has a partnering agreement with the U.S. Army Corps of Engineers and EPA to improve interagency coordination related to large water supply projects in Texas, including related to permitting processes.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

Water Supply Planning works with local governments and other political subdivisions of the state to provide guidance, funding, and technical and administrative support for regional water planning and regional water and wastewater facility planning. Through the regional water planning process, the program coordinates with other state agencies in developing population and water demand projections and in developing the state water plan. The program also works with federal agencies such as the U.S. Army Corps of Engineers to facilitate the implementation of water management strategies in the 2017 State Water Plan and the USGS to enhance TWDB efforts in water data and science.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

Administrative and technical support for the state's regional water planning groups; technical studies to develop information in support of regional water plan development

- **the amount of those expenditures in fiscal year 2020;**

$2,713,606

- **the number of contracts accounting for those expenditures;**

16

- **the method used to procure contracts;**

Requests for Applications

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
Trinity River Authority	$429,773.25
San Jacinto River Authority	$361,326.01
Brazos River Authority	$308,246.43
Northeast Texas Municipal Water District	$201,885.08
San Antonio River Authority	$183,299.20

The purpose of these contracts is development of regional water plans.

- **the methods used to ensure accountability for funding and performance;**

Tracking deadlines and deliverables outlined in the contract ensure accountability.

- **and a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

Grant funds in total of $2,844,856 in FY20 were contracted to the state's regional water planning groups.

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

During the governor's COVID-19 pandemic disaster declaration, procedures for open meetings included the opportunity for members of the public to participate in meetings via telephone, as allowed under the Governor's suspension of Texas Open Meetings Act laws. Once the exception

expires on September 1, 2021, regional flood planning group meetings will again be subject to the Texas Open Meetings Act provision for public participation that specifically allows for participation by members of the public only by videoconference, which could be a challenge for regional water planning groups because they represent large geographic areas. Please see Section IX, Major Issues, Texas Open Meetings Act Allowances, for further discussion on this topic.

Texas Water Code § 16.053(h) requires large mailouts and newspaper postings for regional water planning groups for certain activities, which can be costly and time and labor intensive. The requirements were not imposed on the flood planning program.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

More information can be found on TWDB's website:

State Water Plan

Regional Water Planning

Planning Data

Water Use Survey

Interactive State Water Plan

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Supply and Infrastructure: Flood Planning

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Flood Planning

Location/Division: Austin/Water Supply and Infrastructure, Flood Planning

Contact Name: Reem Zoun, Director

Statutory Citation for Program: Texas Water Code §§ 16.061 and 16.062

B. What is the objective of this program or function? Describe the major activities performed under this program.

Flood Planning is responsible for initiating, overseeing, and supporting the fifteen regional flood planning groups in developing their first 15 regional flood plans by January 2023. Based on the regional flood plans, the TWDB will prepare and adopt Texas' first-ever state flood plan and present it to the Texas Legislature in September of 2024.

The Flood Planning Data team is responsible for supporting the fifteen regional flood planning groups in all aspects of flood planning data including data gathering, dissemination, and visualization of data developed by the flood planning program.

The Flood Planning Grant team is responsible for the review, execution, and management of the FIF watershed studies, also known as Category 1 projects. These studies represent those eligible under Category 1, Flood Protection Planning for Watersheds, of the 2020 Flood Intended Use Plan. This category of funding was designed to support studies that conduct planning of entire watersheds no smaller than Hydrologic Unit Code 10-digit (HUC-10) to better inform the development of strategies using structural and nonstructural measures before a flood event, such as evaluating flooding locations and impacts, identifying and planning solutions to flooding problems, and estimating the benefits and costs of these solutions.

There are fundamental differences between water supply planning and flood mitigation planning that necessitate a different focus of attention. Water supply planning generally addresses long time periods of low water supplies that unfold somewhat slowly and have their greatest impact on the economy, with potential risks to health and safety, whereas flood mitigation planning is about coping with very intense rainfall events over short time periods that quickly take lives, destroy public and private property, and disrupt the economy. In addition, flood planning groups are organized by river basin, and the underlying science, data, and methodologies are very different between these efforts. For instance, reservoir storage must be treated entirely differently. Reservoir storage for water supply aims to keep sources as full as possible to provide water supply during times of drought, whereas reservoir storage for flood control must be kept at lower levels in preparation for the next flood event. Although water planning and flood planning are separate programs, there will be data sharing and opportunities for collaboration, such as when flood mitigation projects can provide water supply benefits.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

N/A

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

Flood Planning is a new program directed by SB 8 of the 86th Legislature. The overall process and program were generally modeled after the successful regional water planning program that is now in its sixth five-year planning cycle.

Prior to establishment of this new program, the TWDB published the 2019 State Flood Assessment, which provided a largely stakeholder-driven initial assessment of Texas' flood risks, an overview of roles and responsibilities, an estimate of flood mitigation costs, and a synopsis of stakeholder views on the future of flood planning. It did not seek to fund specific strategies or projects related to flood planning, mitigation, warning, or recovery. Preliminary findings summarized in the assessment were derived from stakeholder input and organized according to three key pillars of comprehensive flood risk management: (1) mapping, (2) planning, and (3) mitigation.

Implementing the new regional and state flood planning process under SB 8 required developing extensive rules, including flood planning guidance principles; delineating regional flood planning area boundaries based on river basin boundaries; soliciting of and designation by the Board of the initial regional planning group membership; soliciting interest from potential political subdivision sponsors; organizing, convening, and facilitating all 15 initial flood planning group meetings at which the initial members selected their 15 chairs and sponsor political subdivisions; and providing technical and financial support for the planning groups.

The TWDB began the 15 inaugural planning group meetings on October 26, 2020, less than 18 months after SB 8 was signed into law.

In addition, SB 500 provides funding for both regional flood planning activities as well as flood science initiatives (see Water Science and Conservation, Flood Science and Community Assistance), including Base Level Engineering, that will support development of the regional and state flood plans.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

Regional flood planning groups were initially formed when the TWDB designated their initial membership. Once convened, the groups became self-governing with a chair and executive committee operating within the planning framework and in accordance with agency rules that include a variety of requirements with regard to minimum membership and public notice.

Sponsors that support the regional water planning groups must be political subdivisions of the state. The groups themselves represent a variety of interests as required by statute; these include the public, counties, municipalities, industries, agricultural interests, environmental interests, small businesses, electric generating utilities, river authorities, water districts, and water utilities.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Every five years, each of the 15 regional flood planning groups must develop and deliver a regional water plan to the TWDB. Every five years, the TWDB develops and delivers a state flood plan to state leadership approximately one year after the regional plans are delivered.

The division is divided into three departments with managers reporting to the division director:

- Regional flood planning
- Data
- Flood protection planning grants

The responsibilities of management include performing or delegating responsibility for the following tasks:

- Managing contracts
- Providing administrative and technical assistance to stakeholders
- Facilitating, assigning, and prioritizing projects
- Completing administrative tasks including budget, personnel management, and strategic planning for division activities
- Reviewing products, such as reports and papers, to provide quality assurance
- Coordinating and developing processes and procedures internally and externally
- Directing updates to web content and web development
- Serving as a source person for various questions or concerns regarding the program

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
Flood	$	382,297
Grand Total	$	382,297

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

The TWDB works closely with other state and federal agencies that provide similar flood planning services as part of the regional flood planning process. As required by statute, the TWDB worked with TCEQ, Department of Agriculture, GLO, TPWD, TDEM, and the State Soil and Water Conservation Board on development of flood planning guidance principles. Also, each of these agencies has an ex officio member on each regional flood planning group and is also able to add additional state and federal agency members as appropriate for the planning region.

The GLO is undertaking one-time watershed studies in Hurricane Harvey-impacted regions of the Texas. The regional flood planning groups and GLO are coordinating to avoid duplication of effort.

The TWDB also coordinates with GLO regarding grant administration of FIF watershed studies and other projects. The GLO's Combined River Basin Flood Studies are a one-time planning effort and the data and information produced by the GLO will be utilized to help local communities identify needs and apply for mitigation projects, support current and future Texas state flood plans, and inform the Texas Disaster Information System.

The TWDB will be working with TDEM to ensure that flood mitigation projects and strategies recommended in the regional and state flood plans be incorporated in the state's Hazard Mitigation Plan.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

The regional flood planning groups and GLO are coordinating to avoid duplication of effort on similar planning activities in the Gulf Coast region. For the flood planning efforts, this coordination is accomplished in various ways, including: the Texas Flood Organizing Group, a group of federal and state agencies that meets regularly to collaborate on flood science and planning topics; coordination between the directors of both programs; GLO sharing information with the TWDB to share with flood planning groups, and vice versa; and a formal information sharing agreement, which is in development.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

Flood Planning works with local governments and other political subdivisions of the state to provide guidance, funding, and technical and administrative support for regional flood planning and watershed flood studies. Through the regional flood planning process, the program coordinates with other state agencies who are also non-voting members of the regional flood planning groups and in developing the state water plan. The program also works with federal agencies such as the U.S. Army Corps of Engineers to facilitate coordination and information sharing.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

Contracts include administrative and technical support for the state's regional flood planning groups and technical studies overseen directly by the TWDB to develop statewide information in support of regional flood plan development. This program was new in FY20, so the first year was used to organize the regional flood planning groups and no contracted expenditures were incurred for this purpose. This program contracted for professional services to support agency development of portions of the regional flood planning technical guidelines.

- **the amount of those expenditures in fiscal year 2020;**

$172,293

- **the number of contracts accounting for those expenditures;**

2

- **the method used to procure contracts;**

Request for Applications

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
AECOM	$108,279.90
Halff Associates	$64,012.99

- **the methods used to ensure accountability for funding and performance;**

The scope included provisions for progress meetings and draft deliverables that staff reviewed and provided comment on to ensure that the work product met the contractual requirements and our flood planning needs.

and

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

Each of the 15 regional flood planning groups has a political subdivision of the state that has been designated as a planning group sponsor, which receives grant funds for the development of the regional flood plans. A portion of awarded FIF funding, known as Category 1 watershed study funding, was in the form of grants.

FIF Category 1 contracts represent Flood Protection Planning for Watersheds of the 2020 Flood Intended Use Plan. This category of funding was designed to support studies that conduct planning of entire watersheds no smaller than Hydrologic Unit Code 10-digit (HUC-10) to better inform the development of strategies using structural and nonstructural measures before a flood event, such as evaluating flooding locations and impacts, identifying and planning solutions to flooding problems, and estimating the benefits and costs of these solutions.

A total of 46 FIF Category 1 projects received funding commitments from the TWDB with a total grant amount of approximately $69.7 million and total project cost of over $99 million during FY21 (as of August 17, 2021). Out of this, a total of 21 grant contracts have been executed (as of August 17, 2021).

Two additional projects are anticipated to receive funding commitments from the TWDB with a total grant amount of approximately $2.1 million and total project cost of approximately $2.4 million during FY21.

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

During the governor's COVID-19 pandemic disaster declaration, procedures for open meetings included the opportunity for members of the public to participate in meetings via telephone, as

allowed under the Governor's suspension of Texas Open Meetings Act laws. Once the exception expires on September 1, 2021, regional flood planning group meetings will again be subject to the provision for public participation that specifically allows for participation by members of the public only by videoconference, which could be a challenge for regional flood planning groups because they represent large geographic areas and need to meet frequently to adhere to the expedited timeline of the first planning cycle.

Please see Section IX, Major Issues, Texas Open Meetings Act Allowances, for further discussion on this topic.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

The TWDB has just begun the first cycle of regional and state flood planning in Texas; more information on the new program can be found on the Flood Planning website.

To support the regional flood planning groups, the TWDB has assembled a wide array of flood-related data in coordination with TNIRS. The data, all of which come from publicly available sources, has been centralized into a single, easy-to-use Flood Planning Data Hub. The TWDB generated template GIS geodatabases with multiple feature classes and tables for the regional flood planning groups. Each planning group must fill the template geodatabase with relevant regional flood planning data.

Flood Planning worked with Flood Science and Community Assistance to make the "floodplain quilt," a comprehensive compilation of existing statewide flood hazard information, available for the flood planning groups. The floodplain quilt was prepared by the TWDB to provide the planning groups with a common starting point for their own compilation of flood risk data in their regions. The planning groups are expected to confirm, update, and otherwise enhance the initial floodplain quilt information as appropriate to prepare the deliverables required for their flood risk analyses tasks. The Floodplain Quilt geodatabase is available for download under Flood Risk on the Hub.

The floodplain quilt is "sewn" together from various sources of data (National Flood Hazard Layer, Base Level Engineering, etc.) to provide one location for all layers. The quilt prioritizes layer types and shows the top layer type available for a particular area. An additional Draft Cursory Floodplain dataset is available for areas not covered by the quilt. The TWDB funded and guided the development of a user-friendly benefit cost analysis input interface in the form of a spreadsheet document that works in conjunction with the FEMA Benefit-Cost Analysis Toolkit.

The FIF Category 1 contracts represent Flood Protection Planning for Watersheds as detailed in the 2020 Flood Intended Use Plan. This category of funding was designed to support studies that conduct planning of entire watersheds no smaller than Hydrologic Unit Code 10-digit (HUC-10) to better inform the development of strategies using structural and nonstructural measures before a flood event, such as evaluating flooding locations and impacts, identifying and

planning solutions to flooding problems, and estimating the benefits and costs of these solutions. This is the first cycle of FIF funding.

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

VII. Guide to Programs: Water Science and Conservation

Water Science and Conservation provides assistance, information, and education for the conservation, management, and understanding of water in Texas. Water Science and Conservation strives to ensure that Texans have the information they need to conserve, manage, and understand water and is broken out into four primary divisions, with each subdivided into specific departments.

Water Science and Conservation: Conservation and Innovative Water Technologies

Conservation and Innovative Water Technologies helps Texans conserve water resources and pursue alternative water supplies by providing education, data, and funding.

Conservation continues to play an essential role in meeting the future water demands of Texas' rapidly growing population. Significant progress in both agricultural and municipal water use efficiency has been made over the past decade. Within the regional and state water planning process, such progress is reflected in water conservation measures that include practices, techniques, programs, and technologies that will protect water resources; reduce water consumption, loss, or waste; or improve the efficiency of water use.

Municipal Water Conservation reviews water conservation plans and annual conservation reports and makes recommendations regarding best management practices, reviews water loss

audits, promotes water loss mitigation programs, loans leak detection equipment, and conducts training and outreach. Agricultural Water Conservation conducts annual irrigation water use surveys, promotes the adoption of best management practices, and administers agricultural conservation grants to support conservation water management strategies in the state water plan.

Innovative Water Technologies educates the water community on the use of alternative water supplies such as ASR, desalination, and water reuse. Staff manages contracts, conducts research studies, authors publications, presents at events, meets with stakeholders, and participates in professional associations. All related deliverables such as reports, data, presentations, and publications are made publicly available.

Water Science and Conservation: Conservation

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Conservation

Location/Office/Division: Austin/Water Science and Conservation, Conservation and Innovative Water Technologies

Contact Name: John Sutton, Manager

Statutory Citation for Program:

- Texas Water Code § 16.0121 (Water Loss Audits)
- Texas Water Code §§ 15.106; 15.208; 15.995; 11.1271, and 13.146 (Water Conservation Plans)
- Texas Water Code § 16.402.b (Annual Conservation Reports)
- Texas Water Code §§ 16.012 and 16.401 (Education & Outreach)
- Texas Water Code § 16.053 (Agricultural Irrigation Estimates)
- Texas Water Code §§ 17.871–17.912 (Agricultural Grants)

B. What is the objective of this program or function? Describe the major activities performed under this program.

Conservation consists of two primary program areas: Municipal Water Conservation and Agricultural Water Conservation. The major program activities and objectives include the following:

- Promote conservation strategies in regional and statewide water resources planning
- Review water conservation plans and annual conservation reports required to be submitted to the state because of having an active financial obligation with the TWDB, having a certain number of connections, or having certain surface water rights
- Review water loss audits required to be submitted to the state

- Review water conservation plans and water loss audits submitted as a requirement for a financial assistance application
- Provide technical assistance to water suppliers with developing water conservation plans and water loss audits and in the implementation of water conservation best management practices
- Provide support to the Water Conservation Advisory Council (Texas Water Code Chapter 10), including assisting with the council's development of best management practices and its biennial report to the legislature
- Provide technical and financial assistance to implement agricultural conservation programs
- Administer the Agricultural Water Conservation Grants function and manage the grant projects
- Conduct annual agricultural irrigation surveys to estimate water use by crop and by county. This data is the basis for developing statewide water use demands and projections used in the regional water planning process and in groundwater modeling
- Provide water conservation education, literature, outreach, and public awareness programs

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

Key statistics include these:

- Since 1985, the TWDB has developed annual agricultural irrigation water use estimates for each of the state's 254 counties.
- Since the inception of the Agricultural Water Conservation Program in 1985, the TWDB has provided over $110 million in low-interest loans, grants, and other transfers of funds for agricultural water conservation projects.
- During the past 10 fiscal years, 2011 through 2020, grant and loan recipients reported about 622,000 acre-feet as savings or efficiency gains through agricultural water conservation financial assistance programs.
- Over that same 10-year period of FY 2011 through FY 2020, the TWDB provided over $28 million in funding commitments for agricultural water conservation activities in the form of grants, loans, and demonstration projects.
- Currently, 56 active grant projects are being administrated through the Agricultural Water Conservation Grants Program.
- In 2020, staff conducted 12 Water Use, Loss and Conservation training workshops around the state to assist utilities in a better understanding of the annual Water Use Survey, the water loss audit, water conservation plans and programming and to provide awareness of resources, both technical and financial.
- In 2021, staff conducted two webinars based on the training above. These workshops reached approximately 400 individuals.

- As of August 2021, approximately 65 percent of the 4,000 retail water suppliers required to submit a water loss audit for 2020 have complied. Approximately 75 percent of the 800 retail water suppliers required to submit the audit annually have complied.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

Water conservation plans and annual reporting have been required in statute in some form since 1985, and additional conservation requirements were enacted in 2003. Water loss audits have been required since 2005, with annual reporting requirements since 2013. Data from annual conservation reports and water loss audits are provided to the regional water planning groups for their consideration in identifying water management strategies to be used in the regional water plans to meet future water needs. Water loss thresholds were enacted in 2015, requiring recipients requesting financial assistance for a water supply project to meet certain water loss thresholds, either through mitigation as part of the requested funds or by requesting a waiver, if they are actively addressing their water loss.

Texas has funded agricultural water conservation projects since 1985 through pilot programs, low-interest loans and grants, as well as large-scale demonstration projects. In 2019, the 86th Texas Legislature increased the allowable appropriations from the Agricultural Water Conservation Fund to provide between $600,000 and $1,200,000 per fiscal year through the Agricultural Water Conservation Grants Program. This increase allows for funding a greater variety of projects, such as capital-intensive projects like irrigation canal lining, that provide quantifiable water savings and further support the water management strategies in the state water plan.

The number of staff in Conservation has varied with the addition or elimination of positions over the years, but the program has remained the same and with increasing responsibility. More recently, the agricultural water conservation and the municipal water conservation were restructured and merged as teams in Conservation.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply.

Overall, Conservation and Innovative Technologies serves Texas citizens, stakeholders, public entities, and legislative staff who are interested in agricultural and municipal water use efficiency and conservation, and alternative water supplies including ASR, desalination, and water reuse.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other

illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Conservation is part of the Conservation and Innovation Water Technologies division within Water Science and Conservation. The staff composition includes a manager, two team leads for the municipal and agricultural teams, and seven staff members. The team is headquartered in Austin and travels when required for official business.

The manager is responsible for leadership and management of the team; assigning and prioritizing projects; coordinating activities with external collaborators and stakeholders; working on program administrative duties, including budget, timesheets, staff meetings, performance plans, merits, hiring, discipline, and overall general oversight. The manager also provides technical support and conducts activities for the conservation programs. The team leaders are responsible for providing subject matter expertise and general guidance and information to the staff on their respective teams.

The Agricultural Conservation team is responsible for conducting annual irrigation water use estimates that are used by Water Science and Infrastructure to project water demands and water needs as part of the regional water planning process. The team also administers the Agricultural Water Conservation Fund Grant Program. This entails an annual request for applications for new projects, as well as ongoing management of existing contracts, including requesting and tabulating annual water saving reports.

The Municipal Conservation team is responsible for reviewing water conservation plans, water loss audits and water loss thresholds associated with an entity's application for financial assistance for water and wastewater projects from the TWDB. On an annual basis, staff reviews annual conservation reports required as part of having a water conservation plan with the state. Staff also reviews the water loss audits of retail public water suppliers that are required to submit a water loss audit as part of having an active financial obligation with the TWDB or having over 3,300 connections. In addition, all retail public water suppliers are required to submit a water loss audit every five years on a set schedule. Data from both the annual water conservation reports and the water loss audits is provided to Water Science and Infrastructure to assist regional water planning groups in identifying water management strategies to meet Texas' long-term water needs.

Conservation staff also provide water conservation education, support, training and assistance to water providers, planners, educators, environmental groups, and professional trade organizations. Additionally, staff provide support and technical assistance to the Water Conservation Advisory Council with the development of its biennial report to the legislature.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
General Revenue	$	697,479
Grand Total	$	697,479

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

Within the TWDB, the Water Use Survey team (see Water Supply and Infrastructure, Water Supply Planning) collects water reuse data through their annual survey, and Municipal Water Conservation also collects reuse data though required annual reports. Additionally, the agency collects information on desalination, ASR, and reuse through the regional and state water planning process. All divisions across the agency have public outreach as a shared function.

Externally, the TCEQ has a similar but distinct water conservation function that is more regulatory in nature.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Internally, agency staff collaborate and share knowledge to help inform the planning process of projects related our programs. When possible, agency staff from other divisions are invited to participate in outreach opportunities if appropriate.

Externally, agency staff maintain professional relationships with the various key agencies, share datasets and information on TWDB-funded studies, and invite them to be stakeholders in TWDB-funded studies by joining meetings and reviewing deliverables, when appropriate. To avoid duplication of efforts, the TWDB and TCEQ work very closely together to align requirements and remove duplication so both programs can best serve each set of customers. Staff also participate in and share information about TWDB programs with professional organizations.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

Conservation works closely with retail public water suppliers and municipalities in developing and implementing municipal water conservation programs. Many of these entities are required

to submit water conservation plans, annual conservation reports, and water loss audits as a requirement for applying for or having received financial assistance from the TWDB. Data from the annual reports and audits is provided to the regional water planning groups for their use when considering water management strategies to meet future needs in the regional water plans.

Conservation also works closely with water irrigation districts in estimating annual agricultural irrigation water use. This data is compiled by the TWDB to estimate future agricultural water demands, and these demand estimates are used in the regional water planning process. The agricultural water conservation grant program, administered by Conservation, supports programs and research conducted by irrigation districts and other entities who provide water and services to agricultural water users to help ensure water use efficiency and conservation as provided for in the state water plan.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**
- **top five contracts by dollar amount, including contractor and purpose;**
- **the methods used to ensure accountability for funding and performance; and**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

Agricultural Water Conservation programs at the TWDB include an annual grants program to eligible political subdivisions and state agencies, low interest loans to eligible political subdivisions, and educational and technical assistance programs to the public upon request. The objective of the grants program is to promote research and activities related to agricultural water conservation in the state.

The following is a summary of the FY20 agricultural conservation grants awarded:

Contract Number	Contractor	Amount	Purpose
2013582446	Bayview Irrigation District #11	$200,00	Main Canal Pipe Conversion Project

2013582447	El Paso County WID #1	$300,000	Franklin Canal Lining Project Phase 2
2013582448	Lower Colorado River Authority	$244,744	Garwood Gate Automation Project
2013582449	North Plains GCD	$250,000	Master Irrigator Program
2013582450	Texas A&M AgriLife Research	$200,314	Education Programs in South Texas

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

It is estimated that with its current grant and loan activities, the Agricultural Water Conservation Fund, created by the 69th Legislature, will not be able to sustain its current level of use after 2025. Since the fund's initial bonding authority of $200 million in 1985, the fund has provided over $113,100,100 in agricultural grants and low interest loans. It is estimated that since 2004 the program has funded projects that have resulted in over 923,019 acre-feet of water saved. In 2019, the annual funding capacity was increased by the 86th Texas Legislature to allow more funds to be awarded (see Section D). While this expanded capacity provided more opportunity for more capital-intensive projects, it also accelerated the rate of drawdown of available funds.

Without these funds, irrigation districts, GCDs, and agricultural producers will not have access to cost-efficient funds and training about new irrigation technology. Texas irrigators will have to find alternative sources of funding for their conservation efforts, and there may be a potential reduction in adoption of these irrigation water management strategies and technologies, which are an important component in the state water plan.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

The 2022 State Water Plan identifies water conservation as providing 30 percent of the recommended water strategy supplies in 2070. Water conservation is also typically the least expensive and one of the most effective water supply strategies and therefore is an important future water supply strategy for Texas water user groups.

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Innovative Water Technologies

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Innovative Water Technologies

Location/Division: Austin/Water Science and Conservation, Conservation and Innovative Water Technologies

Contact Name: Erika Mancha, Manager

Statutory Citation for Program:

- Texas Water Code § 11.153 (Projects for Storage of Appropriated Water in Aquifers)
- Texas Water Code § 11.155 (ASR and Aquifer Recharge Reports)
- Texas Water Code § 16.060 (Desalination Studies and Research)
- Texas Water Code § 16.053 (Regional Water Plans)
- Texas Water Code, Chapter 18 (Marine Seawater Desalination Project)
- Texas Health and Safety Code § 341.0316 (Desalination of Marine Seawater for Drinking Water)
- Texas Health and Safety Code § 341.039 (Direct Potable Reuse)

B. What is the objective of this program or function? Describe the major activities performed under this program.

Innovative Water Technologies consists of three primary areas: ASR, Desalination, and Water Reuse, which explore alternative water supplies that will help meet the future water demands of Texas. The mission of Innovative Water Technologies is to educate the water community on the use of alternative water supplies in Texas by researching, developing, and disseminating information. Innovative Water Technologies administers contracts for demonstration projects, pilot plant studies, and research projects. It also conducts internal studies to advance program areas and promotes the use of alternative water supplies through outreach activities including maintaining a website, making public presentations, writing articles and reports, participating in professional organizations and societies, and distributing printed educational materials. Innovative Water Technologies maintains and updates a publicly available database of desalination plants with a capacity of more than 25,000 gallons per day.

Staff also prepares and submits the biennial report on seawater and groundwater desalination to the governor, lieutenant governor, and the speaker of the house by December 1 of each even-numbered year.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

In the 2022 State Water Plan, recommended water management strategies related to innovative water technologies are expected to account for about 21.4 percent of all new water by 2070, approximately 1.65 million acre-feet per year. This represents an increase compared to the 2017 State Water Plan, in which strategies related to innovative water technologies accounted for about 17.5 percent of all new water by 2070, approximately 1.5 million acre-feet per year.

These technologies have been implemented over the past two decades. The number of brackish groundwater and surface water desalination plants has been increasing steadily, and as of August 2020 there are 53 desalination plants with a capacity greater than or equal to 25,000 gallons per day operating in Texas. There has also been a notable increase in seawater desalination activities in the Corpus Christi area and two entities (City of Corpus Christi and Port of Corpus Christi) have been submitting applications to obtain permits. With the support of funding provided by the TWDB, the City of Corpus Christi has been the most active entity and has advanced from planning to the permitting of two proposed sites and a proposed seawater desalination plant with a maximum production capacity of 30 million gallons per day.

Recently, water reuse expanded to include potable uses. Texas has the first operating direct potable reuse facility in the nation as well as five operating indirect potable reuse facilities. There are also three operating ASR facilities and aquifer recharge facilities in San Antonio, Kerrville, and El Paso. Stakeholders continue to pursue and to be interested in alternative water supplies. In 2019, the Texas Legislature passed HB 720 that expanded the TWDB's ASR activities by providing three full-time employees and appropriations to fund a statewide study. In 2021, the Texas Legislature passed SB 905 to define direct potable reuse in statue and request TCEQ

to share permitting requirements for direct potable reuse projects. The Innovative Water Technologies team continues to steadily conduct outreach, engage with stakeholders, and log these activities as part of the Groundwater division performance measures.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

Innovative Water Technologies has evolved progressively since its inception in 2003. It originated with the Desalination program and has grown to now include ASR, BRACS, rainwater harvesting, and water reuse. In 2018, rainwater harvesting activities were transferred to Municipal Conservation. In 2021, the BRACS program and eight staff members were transferred to Groundwater.

Some important milestones in Innovative Water Technology's history include the following:

Desalination

- 2002: Governor Rick Perry announced a seawater initiative to construct a seawater desalination plant.
- 2002: The TWDB issued a request for Statements of Interest for proposals to develop large-scale demonstration seawater desalination projects.
- 2003: The 78th Legislature passed HB 1370 requiring the TWDB to take all necessary actions to develop seawater desalination supplies. The 78th Legislature appropriated $1.5 million to the TWDB to contract three feasibility studies at the recommended sites located in Freeport, Brownsville, and Corpus Christi.
- 2003: Innovative Water Technologies was created within Water Science and Conservation.
- 2004: The Brackish Groundwater Desalination Initiative was established at the TWDB.
- 2005: The 79th Legislature appropriated $2.5 million for desalination plant pilot studies. Out of the $2.5 million appropriated, $600,000 was appropriated for the first batch of three demonstration projects.
- 2007: The 80th Legislature appropriated $600,000 to support four new projects to assess desalination technology and methods and fund a brackish groundwater pilot project.
- 2008: The TWDB funded two projects with the Research and Planning Fund to assess energy saving strategies and desalination concentrate management.
- 2009: The 81st Legislature appropriated $600,000 to support four new demonstration projects to develop permitting guidance and assess new treatment technology and innovative construction materials for brackish groundwater production wells.
- 2011: The TWDB funded one project with its Research and Planning Fund to investigate pilot testing alternatives.
- 2015: The 84th Legislature passed HB 30, which directed the TWDB to also report on groundwater desalination activities in the biennial report on desalination.

- 2015: The TCEQ adopted rules to allow the use of computer models from membrane manufacturers for reverse osmosis systems used to treat secondary contaminants in groundwater as an alternative to conducting pilot testing. A TWDB-funded study provided the science need to support the TCEQ's subsequent rule adoption, which provides a more expedited path for approving brackish groundwater desalination facilities.
- 2019: The 86th Legislature appropriated $200,000 in grant assistance for the Brazosport Water Authority for its brackish groundwater desalination project.

Aquifer Storage and Recovery

- 2009: The TWDB funded a study to determine why ASR was not being more widely implemented in Texas.
- 2010: The TWDB created its ASR program housed under Innovative Water Technologies.
- 2012: The TWDB completed a technical report of geologic characterization of the Gulf Coast Aquifer for the Corpus Christi ASR Conservation District.
- 2015: The TWDB published Technical Note 15-04 summarizing the history of ASR projects in Texas.
- 2015: The 84th Legislature passed HB 655 relating to the storage and recovery of water in aquifers. The 84th Legislature passed HB 1, Rider 25, which appropriated $1 million from the General Revenue Fund to the TWDB to fund ASR projects.
- 2016: The TWDB provided funding to the Victoria County GCD, the Edwards Aquifer Authority, and the Corpus Christi ASR Conservation District to acquire information about local geological conditions for possible ASR projects.
- 2016: The TWDB funded planning studies for the City of Wharton and Barton Springs/Edwards Aquifer Conservation District to evaluate new water sources, including ASR.
- 2019: The 86th Legislature passed HB 721, directing the TWDB to conduct a statewide survey of various major and minor aquifers to identify the relative suitability of aquifers for use in ASR projects and aquifer recharge projects based on several considerations. A report summarizing the statewide survey was due by December 15, 2020. In addition, the bill directed the TWDB to (1) conduct studies of ASR projects or aquifer recharge projects in the state water plan or identified by interested persons, (2) work with appropriate interested persons to conduct studies, and (3) share the results of studies with regional water planning groups and interested parties. The 86th Legislature also passed HB 720 that allows unappropriated water, including stormwater and floodwater, to be appropriated for aquifer recharge projects and ASR projects.
- 2020: The TWDB initiated two studies: an aquifer characterization for the Guadalupe-Blanco River Authority and a model update for the City of Bandera and Bandera County.

Water Reuse

- 1988–1997: The TWDB completed six water reuse feasibility and planning studies.2004–2011: The TWDB completed six water reuse feasibility, storm water assessment, and research studies.

- 2009: The TWDB created its Reuse Program housed under Innovative Water Technologies.
- 2015: Water Reuse published the Direct Potable Reuse Resource Document and completed one project.
- 2017: Water Reuse completed one project that sampled and conducted testing at the Raw Water Production Facility in Big Spring, Texas.
- 2021: The 87th Legislature passed SB 905 that amends the Health and Safety Code to (1) define direct potable reuse and (2) require the TCEQ to develop and make publicly available a regulatory guidance manual that explains rules applicable to direct potable reuse.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply.

Conservation and Innovative Water Technologies serves Texas citizens, stakeholders, public entities, and legislative staff who are interested in alternative water supplies including ASR, desalination, and water reuse.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Innovative Water Technologies is part of Conservation and Innovation Water Technologies within Water Science and Conservation. It includes a manager, discipline lead, and three staff members. The team is headquartered in Austin and travels when required for official business.

The manager is responsible for leadership and management of the team; assigning and prioritizing projects; coordinating activities with external collaborators and stakeholders; working on program administrative duties, including budget, timesheets, staff meetings, performance plans, merits, hiring, discipline, and overall general oversight. The manager also provides technical support and conducts activities for the water reuse and desalination program.

The discipline lead is responsible for leading technical aspects of the ASR program. The duties include making technical decisions on data collection methods or procedures applied to studies, researching program related topics, completing studies, keeping technical studies on schedule, and reporting any problems to the manager.

The three staff members that support the ASR program consist of a geologist, a hydrologist, and an engineer. Primary duties involve conducting studies, characterizing aquifers, updating models, collecting aquifer data, and presenting results to stakeholders. Staff also serve as contract managers for technical professional services contracts. They interact with external and

internal stakeholders when conducting meetings, phone calls, presentations, and information requests. Staff meet as needed to advance studies.

On a daily basis, the team works on the duties described above and any additional duties as assigned. The Conservation and Innovative Water Technologies team meets monthly, and the study teams meet biweekly with management for their ongoing studies to discuss their progress and schedule.

Every year or other year, staff completes ASR studies and aquifer recharge studies to fulfill a legislative mandate. In 2019, the 86th Legislature passed HB 721 that directed the TWDB to (1) conduct studies of ASR projects or aquifer recharge projects in the state water plan or identified by interested persons, (2) work with appropriate interested persons to conduct studies, and (3) share the results of studies with regional water planning groups and interested parties.

Every biennium, staff prepares and submits the biennial report on seawater and brackish groundwater desalination to the governor, lieutenant governor, and the speaker of the house by December 1 of each even-numbered year as required by Texas Water Code § 16.060. Staff updates material in the report, coordinates with internal and external stakeholders to obtain and/or verify information, routes the legislative report through the publication process, and make it available on the Desalination website.

About every five years, staff updates a database of desalination plants with a capacity of more than 25,000 gallons per day. The database is updated by obtaining the most recent list of permitted desalination plants from TCEQ, comparing the list of plants with the database and identifying the new plants, updating contact information for existing and new plants, sending out surveys to existing and new plants, sending reminders to entities about completing the survey via email and phone, entering new or updating data in the database, and finally working with IT to upload the updated database.

About every five years, staff also helps (1) review and approve source water requests for ASR, desalination, and reuse in the regional water planning process and (2) review ASR, desalination, and reuse items in the draft regional water plans. The team obtains recommended and alternative water management strategies and projects in the state water plan for our programs to evaluate, analyze, and make available on the Desalination website.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding	Amount
General Revenue	$ 1,074,945
Grand Total	$ 1,074,945

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

No single internal or external program exists that provides identical or similar services or functions to stakeholders. However, there are some programs in other areas of the agency that may collect data related to the programs of Innovative Water Technologies.

Internally within the TWDB, the Water Use Survey (see Water Supply and Infrastructure, Water Supply Planning) collects water reuse data through their annual survey. Additionally, Municipal Water Conservation collects onsite reuse data in their annual reports. The agency also collects information on desalination, ASR, and reuse through the regional and state water planning process, funds projects related to Conservation and Innovative Water Technology programs, and may obtain technical information like engineering reports that are part of the planning and construction aspects of projects. All programs across the agency have public outreach as a shared function.

Externally, the TCEQ approves permits for desalination plants used for municipal and industrial uses, ASR facilities, aquifer recharge projects, and indirect and direct reuse for non-potable and potable water uses. The Railroad Commission of Texas (RRC) approves permits for wells related to oil and gas activity. Both the TCEQ and the RRC perform these duties as part of a regulatory function whereas TWDB activities serve to provide information and support of long-term water planning efforts.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Internally, agency staff collaborate and share knowledge to help inform the planning process for projects related to Innovative Water Technologies. When possible, agency staff from other program areas are invited to participate in outreach opportunities if appropriate.

Externally, agency staff maintain professional relationships with various key agencies, share datasets and information on TWDB-funded studies, and invite them to be stakeholders through active engagement in work groups or by joining meetings and reviewing deliverables, when appropriate. Staff also participate in professional organizations and share information about TWDB programs and activities.

Innovative Water Technologies shares the Desalination Plant Database with the TCEQ, and TCEQ shares the list of permitted desalination plants with TWDB that is used to survey existing and new desalination plants and update the TWDB's database. In July 2017, Innovative Water Technologies staff began collaborating with the Groundwater Advisory Unit of the RRC by holding monthly meetings to discuss distinct aspects of their programs and to share information related injection wells permitted by the RRC and brackish groundwater production zone designations determined by the TWDB. The meetings have evolved and expanded to larger coordination meetings, with the addition of three more agencies, including the University of Texas Bureau of Economic Geology, TCEQ, and the U.S. Geological Survey.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

Innovative Water Technologies partners with local and regional units of government (city, county, and regional entities) regarding activities related to ASR, desalination, and water reuse. Innovative Water Technologies may conduct studies for local or regional public entities to help further their projects that will develop alternative water supplies. Currently, staff are conducting an aquifer characterization of the Carrizo-Wilcox in Eastern Gonzales and Southern Caldwell counties for the Guadalupe-Blanco River Authority and updating a model to evaluate water level decline in the lower Trinity Aquifer in Bandera County for the City of Bandera and Bandera County River Authority and Groundwater District. These studies are supported by the TWDB in accordance with the legislative directives of HB 721 of the 86th Legislature.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

Contracts may be initiated for professional services to support various initiatives.

- **the amount of those expenditures in fiscal year 2020;**

$386,471

- **the number of contracts accounting for those expenditures;**

1

- **the method used to procure contracts;**

State purchasing and contract policy and procedures are utilized to procure contracts.

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
HDR Engineering Inc	$386,470.96

The 86th Legislature passed HB 721, directing the TWDB to conduct a statewide survey of various major and minor aquifers to identify the relative suitability of aquifers for use in ASR projects and aquifer recharge projects based on several considerations. A report summarizing the statewide survey was due by December 15, 2020. The agency contracted the study and converted the report to meet the legislative mandate.

- **the methods used to ensure accountability for funding and performance;**

Contracts have a detailed statement of work that outlines tasks and deliverables, and retainage is withheld from these contractors until deliverables that meet requirements are provided.

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

N/A

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

The following is provided as additional information related to ASR, desalination, and reuse.

ASR and Aquifer Recharge

In Texas, ASR is defined as "the injection of water into a geologic formation, group of formations, or part of a formation that is capable of underground storage of water for later retrieval and beneficial use" (Texas Administrative Code, Title 30, Part 1, Chapter 331, Subchapter A). Aquifer recharge is defined as the intentional recharge of an aquifer by means of injection well or other means of infiltration (Texas Water Code § 27.201). ASR and Aquifer Recharge can be used to store water sources (including excess surface water, water from another aquifer, treated wastewater, and desalinated water) that meet state requirements for drinking water safety and are chemically compatible with a suitable aquifer.

Desalination

With a 367-mile coastline along the Gulf of Mexico, Texas has access to a nearly limitless supply of seawater for desalination. Seawater has a total dissolved solids content of 35,000 parts per million or greater and needs to be desalinated to reduce the concentration of total dissolved solids and other constituents to use as public water supply. Similarly, brackish groundwater is another important source of new and largely unused water supply in Texas. Brackish groundwater is defined as groundwater with a total dissolved solids content between 1,000 and 10,000 parts per million. If used for potable purposes, brackish groundwater needs to be desalinated or blended with other water to reduce the concentrations of total dissolved solids and other constituents.

Water Reuse

Water reuse, also known as reclaimed water, is the use of treated domestic or municipal wastewater effluent for a beneficial purpose. Examples of reuse water include municipal reclaimed water used to irrigate golf courses and treated industrial wastewater used for manufacturing and cooling purposes. Recently, treated wastewater has become available for potable use in some communities.

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Flood Science and Community Assistance

Floods are a natural and regular occurrence that have shaped the Texas landscape for millennia. Flood Science and Community Assistance seeks to improve resiliency through public awareness, scientific data, and financial and technical assistance. The vision of Flood Science and Community Assistance is to promote and contribute to an environment where Texans

understand the hazards posed by flooding, are equipped with comprehensive and reliable information, and can implement proactive strategies that reduce flood risks.

Flood Science and Community Assistance activities include: compiling, analyzing, and disseminating current, reliable flood data to influence informed decision making at regional and local levels; facilitating proactive floodplain management through education and access to resources by providing communities with a realistic perception of flood risk; and assisting with the implementation of state and federally funded mapping, outreach, and mitigation projects focused on cost-effective measures to identify, reduce, or eliminate long-term risk of flood damage to structures and life.

Water Science and Conservation: Community Assistance Program

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Community Assistance Program

Location/Division: Austin/Water Science and Conservation, Flood Science and Community Assistance

Contact Name: Yi Ling Chan, Manager

Statutory Citation for Program: Texas Water Code §§ 16.314 and 16.316

B. What is the objective of this program or function? Describe the major activities performed under this program.

The Community Assistance Program serves to provide flood outreach and guidance to local officials and the public across the state on the topic of floodplain management. The TWDB serves as the state coordinating agency for the NFIP by coordinating between local floodplain administrators and the FEMA. Outreach is provided through community assistance visits, general technical assistance, ordinance review assistance, trainings, and workshops. This group also supports communities after disasters with on-site visits and through providing recommendations on floodplain management responsibilities, substantial damage provisions, application of ordinance or court orders, permitting procedures, and coordination with other state and federal agencies.

The program also serves to provide general outreach about flooding and flood activities to the public through answering phone calls from the public and presenting on flood-related TWDB programs at conferences, workshops, and community meetings.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

TWDB
Exhibit 12: Community Assistance Program
Program Statistics and Performance Measures — Fiscal Year 2020

Program Statistics or Performance Measures	Dataset Reference Number* (if applicable)	Calculation (if applicable)	FY 2020 Target	FY 2020 Actual Performance	FY 2020 % of Annual Target
Closure of 40% of all Community Assistance Visits (CAVs) within each period of performance	N/A	N/A	40%	27%	68%
26% of Texas communities have adopted higher floodplain management standards	N/A	N/A	26%	29%	112%
Teach at least 18 floodplain management classes throughout the state	N/A	N/A	18 classes taught	19	106%
Attend or present at a minimum of five state-level organization meetings.	N/A	N/A	5 meetings attended or presented	22	440%
Conduct 325 instances of general technical assistance for communities	N/A	N/A	325 instances	389	120%

The TWDB works with FEMA to track the measures in Exhibit 12 as well as additional performance measures as part of the FEMA-Community Assistance Program, State Support Services Element grant funding provided to the TWDB for this program.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

N/A

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply; the Community Assistance Program provides floodplain management support to all Texas communities (cities and counties) regardless of their participation in the NFIP.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

The Community Assistance Program is part of Flood Science and Community Assistance within Water Science and Conservation and is composed of a manager and five staff members. The team is headquartered in Austin and has three staff located in field offices. The team travels extensively around Texas to engage with stakeholders and communities.

The primary scope and funding for this program is provided on an annual basis through a grant agreement with FEMA, with the period of performance spanning from July 1 to June 30 of the following year. The TWDB provides FEMA with a draft statement of work for the program each year in early spring. A final statement of work is included with the grant application once the Notice of Funding Opportunity is released by FEMA. Typically, the Notice of Funding Opportunity is released in May and applications for the grant program from each state are due mid-June. In addition to the FEMA grant activities, this program provides state-specific floodplain management outreach and support services to assist with other state flood activities such as regional and state flood planning.

The TWDB provides quarterly financial and performance reports 30 days after the end of each federal performance quarter and close out documentation no later than 90 days after the expiration of a grant. Documentation includes the final financial status report and final performance report.

There are three Community Assistance Program staff in field offices in Harlingen, Houston, and El Paso. Field staff meet with local officials; hold in-person trainings; and respond to and assist local officials, especially after disasters.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
Federal Funds	$	188,561
Flood	$	12,643
General Revenue	$	69,703
Grand Total	$	270,907

Roughly 70 percent of the Community Assistance Program is federally funded by FEMA with the state providing a 25 percent cost match from general revenue. Federal funding is allocated on an annual basis and is funded through federal fees collected pursuant to section 1308(d) of the National Flood Insurance Act of 1968 (42 U.S.C. 4015(d)). The remaining portion of the program budget comes from state funds used to support non-FEMA activities.

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

FEMA also provides similar services to local governments and the public. Both the TWDB and FEMA provide "Community Assistance Visits," "Community Assistance Contacts," General Technical Assistance, and training to local governments throughout the state. Many of these activities are performed identically by both parties, but FEMA is a regulatory agency while the State is not. This difference in regulatory authority allows the TWDB to build stronger relationships with local governments than FEMA is often able to. Additionally, FEMA provides these functions in a more limited capacity as they have fewer staff for the whole state. Since the TWDB is able to provide a broader level of outreach across the state and is often quicker to respond post-disaster than FEMA, the TWDB tends to serve as the primary contact to local officials, escalating issues to FEMA as needed.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

A statement of work is provided to FEMA at the beginning of every period of performance (yearly) which outlines the specific communities and the outreach that will be performed

throughout the state for that year. All contacts made with local communities are documented in a database that both the TWDB and FEMA staff have access to. This ensures that both programs are up to date on the most recent outreach and the kind of interaction that FEMA and/or the TWDB have had, which eliminates the possibility of any duplication of services. Additionally, the Community Assistance Program meets monthly with staff from FEMA to discuss ongoing activities.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

The Community Assistance Program functions as a liaison between FEMA and local governments throughout the state at either the city or county level. FEMA provides oversight for communities that are enrolled in the NFIP to ensure that they are administering their floodplain management programs. Local governments can choose to participate in the NFIP. Participation requires that standards are adopted that are consistent with the minimum FEMA requirements. The TWDB serves to assist communities with their application into the NFIP program and serves as a resource for any floodplain management related questions that local communities have. The TWDB accomplishes these functions by holding regular trainings, presenting at workshops and conferences, contacting communities frequently, and serving as a resource that communities can reach out to for questions.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**
- **top five contracts by dollar amount, including contractor and purpose;**
- **the methods used to ensure accountability for funding and performance; and**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

NFIP participation is voluntary for each community in Texas (Texas Water Code § 16.3145); about 1,260 of 1,480 communities in Texas participate (approximately 85 percent). Lack of participation may inhibit or prevent communities and their citizens from obtaining disaster assistance during floods and also may cause development to occur without floodplain

regulations in place to limit its impact. Aside from NFIP regulations, there are very few state regulations for floodplain management, which results in highly varied regulations for each community in Texas and concerns between communities of passing flood risk to others.

There are no state floodplain laws or regulations for state-owned properties in Texas. However, some state agencies have rules or guidelines pertaining to development in the floodplain, which are not required by state law but may be required by their respective federal agencies. MOUs exist where certain state agencies agree to "seek compliance with FEMA's minimum floodplain management standards." These agencies include the Texas Department of Transportation, the TPWD, and TCEQ. However, these MOUs were made when the NFIP State Coordinating Office was within the Texas Natural Resource Conservation Commission, and they were signed around 1998 to 2000.

FEMA is currently assessing state NFIP compliance for all states and Texas is at some risk of receiving a negative assessment from FEMA regarding the lack of state floodplain laws or regulations for state-owned properties that could result in probation or suspension from the NFIP and loss of eligibility for some types of federal assistance. Depending on further feedback received from FEMA, the TWDB will develop and implement a recommended action plan.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

N/A

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Flood Grant Coordination

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Flood Grant Coordination

Location/Division: Austin/Water Science and Conservation, Flood Science and Community Assistance

Contact Name: Kathy Hopkins, Manager

Statutory Citation for Program: Texas Water Code §§ 15.405, 15.601–15.618 and 16.093.

B. What is the objective of this program or function? Describe the major activities performed under this program.

The primary objective of Flood Grant Coordination is to assist Texas communities by providing federal funds for cost-effective measures to reduce or eliminate the long-term risk of flood damage to Severe Repetitive Loss, Repetitive Loss, and other insured structures under the NFIP. Severe Repetitive loss is defined as four or more flood insurance claim payments exceeding $5,000 for a total greater than $20,000, or two separate claim payments exceeding the market value of the building. Repetitive Loss is defined as having damages on two occasions, for which the cost of repair on average equaled at least 25 percent of the market value of the building. Flood risks are addressed through mitigation projects or long-term comprehensive mitigation planning. Communities can receive up to 100 percent federal funding depending on the type of structure being mitigated or the type of mitigation activity.

The major program activities and objectives include the following:

- Provide technical assistance and support communities in developing awardable sub-applications for the Flood Mitigation Assistance grant program.
- Review and rank sub-applications for inclusion in the state-level, TWDB Flood Mitigation Assistance Grant application to FEMA.
- Develop and manage the TWDB Management Cost Subgrant for each fiscal year that provides FEMA funds to support TWDB activities in managing the Flood Mitigation Assistance program for Texas.
- Provide technical support and manage the TWDB's contract preparation, negotiation, and finalization of the scopes of work for subgrants awarded to political subdivisions. Manage all aspects of the contract for the subgrants, ensure timely execution and completion of contract terms, and meet all performance and financial reporting requirements.
- Develop and maintain the Repetitive Loss Strategy of the Texas Hazard Mitigation Plan, which allows for the maximum federal cost share available for mitigation of Severe

Repetitive Loss and Repetitive Loss properties. Coordinate with TDEM every five years to update the Texas Hazard Mitigation Plan for re-approval by FEMA.

- Provides technical assistance, implementation guidance, and oversight of the grant projects from implementation through completion once contracts are fully executed.
- Conducts quarterly subgrant site visits, monitoring visits, and prepares quarterly summary reports for FEMA.

Staff typically administers five to six years of ongoing federal grant agreements which typically includes 10-12 Flood Mitigation Assistance subgrant contracts each. At any given time, there may be roughly 50 to 75 active subgrants over five to six funding years.

FIF and Flood Protection: These are both state-funded grant/loan programs that support flood planning and mitigation for Texas communities. Flood Protection grants have been in place since 1983 and are currently being phased out (existing grants working through completion) due to the passage of new flood legislation that enabled the development of the much larger FIF program by the 86th Legislature. The grants focused on flood studies to develop improved flood mapping and plans for mitigation projects. In 2015, Flood Protection grants were expanded to also include development and installation of flood early warning systems for communities.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

See Question L below for the amount of federal Flood Mitigation Assistance funds obtained for Texas communities for flood mitigation each year. Specific performance measures based on funding have not been defined due to uncertainty in availability of federal funding each year and competition between states for the limited funding amounts.

Historical funding for Flood Protection grants was roughly $1 to 2 million per biennium, and grants were typically distributed to around 8 to 12 flood projects per biennium. The program was very popular with stakeholders and was consistently oversubscribed. In 2016, the TWDB received 41 applications requesting over $7.26 million in funding; in 2018, the TWDB received 38 applications requesting over $5.5 million in funding. Completed projects led to improved floodplain mapping in communities and also to support for implementing specific flood mitigation projects.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

Flood Grants Coordination has been administering the FEMA Flood Mitigation Assistance grant program since 1998. As of June 2021, Texas has been selected to receive over $400 million in federal funds to assist communities to date.

Some important milestones in the program's history include the below:

1994: The Flood Mitigation Assistance Grant Program was created by the National Flood Insurance Reform Act of 1994.

1997: On November 25, Texas Governor George W. Bush designated the TWDB as the state agency responsible for administering the Flood Mitigation Assistance Grant Program.

1998: The TWDB was awarded federal funding for flood mitigation for the first time.

2012: The Biggert-Waters Flood Insurance Reform Act of 2012 eliminated the Repetitive Flood Claims and Severe Repetitive Loss grant programs and incorporated their functions into the Flood Mitigation Assistance Grant Program.

1994: The TWDB issued the first Flood Protection Planning grants using Research and Planning Funds.1982 to 2015: The TWDB awarded 136 Flood Protection Planning Grants totaling approximately $22,200,000 in funding assistance during this time period. December 2015: In response to significant flooding, in particular the Wimberly Floods of 2015 that claimed 13 lives, the Office of the Governor and the TWDB executed a memorandum of understanding "…for purposes of preparing for a disaster…making funds available to state and local entities for floodplain management…." In support of these activities, the Board authorized the Executive Administrator to publish a request for applications for a total amount not to exceed $2 million from Disaster Contingency Fund No. 453 to assist state and local entities in improving upon flood notification systems and floodplain management planning.

June 2016: The TWDB received 41 applications requesting over $7.26 million in funding for this new version of the Flood Protection Grant program.

July 2018: The TWDB received 38 applications requesting over $5.5 million in funding for Flood Protection Grants.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

See Water Supply and Infrastructure, Program Administration and Reporting, for FIF information.

Flood Mitigation Assistance eligible communities must participate in the NFIP and the properties to be mitigated must be NFIP-insured. Overall community subgrant applications must have a Benefit Cost Ratio greater than 1.0. Of 1,480 Texas communities (cities and

counties), about 1,260 participate in the NFIP (approximately 85 percent). The remaining 15 percent of communities that don't participate in the NFIP are not eligible to apply for funding.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Flood Grants Coordination is part of Flood Science and Community Assistance within Water Science and Conservation and is composed of a manager and six grant coordination specialists.

The primary function of Flood Grants Coordination is to administer FEMA Flood Mitigation Assistance grants and Categories 3 and 4 of the FIF program (see Water Supply and Infrastructure, Program Administration and Reporting).

The Flood Mitigation Assistance program opens on an annual cycle with the issuance of a Notice of Funding Opportunity by FEMA on www.grants.gov. The TWDB will issues notice to Texas communities and interested communities work with the TWDB to develop eligible subgrant applications. The TWDB assembles all the subgrant applications into a single state application for submission to FEMA. FEMA performs a review and ranking process and then issues a notice of selected subgrants for award. FEMA awards the subgrants through its grant agreement with the TWDB. Once the subgrants are awarded by FEMA, the TWDB enters into agreements with each community. Once agreements are in place, communities may begin their mitigation project. The TWDB oversees and provides technical assistance to communities in implementing their subgrants from initiation through closeout with FEMA.

See Water Supply and Infrastructure, Program Administration and Reporting, for more information on the FIF program.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
Appropriated Receipts		
Federal Funds	$	130,688
Flood	$	37,617
General Revenue	$	58,121
Grand Total	$	226,426

Funding Year	# of Selected Texas Sub-Applications	Federal Funding Received by Texas Communities ($ Million)
2018	14	32.55
2019	13	44.48
2020	13	63.6

Flood Mitigation Assistance projects have three types of local match requirements.

A. For Severe Repetitive Loss structures, the program pays 100 percent; communities pay 0 percent.

B. For Repetitive Loss structures, the program pays 90 percent; communities pay 10 percent.

C. For drainage planning and other projects, the program pays 75 percent; communities pay 25 percent.

Different local match requirements based on multiple structures can be combined (and proportionally computed) as part of an overall community sub-application.

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

The FEMA Flood Mitigation Assistance grant program is a part of FEMA's Hazard Mitigation Assistance suite of grant programs, which also include the Hazard Mitigation Grant Program and the Building Resilient Infrastructure and Communities programs, both administered by TDEM. Hazard Mitigation funding administered by TDEM may become available after a Presidential Declared Disaster (if the amount of damage received verses the population reaches a certain threshold) and provides mitigation funding to mitigate all hazards—flooding, wildfire, tornadoes, winter weather, and others—with either project or planning grants.

The program has an annual funding cycle that only provides mitigation funding to NFIP- insured structures to mitigate flood-prone structures with either project or planning grants. The Building Resilient Infrastructure and Communities grant program has an annual funding cycle which mitigates all hazards (not just flood) with either project or planning grants.

The GLO administers the Community Development Block Grant for Mitigation funding that becomes available after a Presidential Declared Disaster and U.S. Congress allocates the funding. These funds are to mitigate potential future losses and to repair from previous losses. These funds can be provided directly to property owners to assist in repairs or to a community. The GLO must prepare an administrative plan that is approved by the U.S. Department of Housing and Urban Development on how the funds will be used and directed by notice issued in the Federal Register and guidance documents.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

The TWDB, GLO, and TDEM (along with other state agencies that indirectly administer flood mitigation funds) participate in the FLICC, which meets on a monthly basis to discuss any current funding opportunities and applications received. The FLICC has developed a website to assist communities identifying potential funding for their flood mitigation projects. The TWDB also provides training through webinars and conferences which include information about various state and federal flood grant programs.

FIF applications and projects are managed are coordinated internally as described above under Item H.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

Flood Mitigation Assistance: The TWDB administers the Flood Mitigation Assistance grant on behalf of FEMA. FEMA provides oversight and final selection of subgrant selections, and the TWDB provides administrative oversight and technical assistance to communities of the state who apply and are awarded subgrants.

Flood Mitigation Assistance can require up to 25 percent local match if mitigating repetitive loss structures, NFIP insured structures, localized flood control project, or for planning purposes. Meeting the local match requirement can be a challenge for some communities, in which case they may pass this requirement down to the individual property owners. This shift can be financially burdensome to property owners, and certain owners may drop out of the (voluntary) participation in the subgrant, leaving the property unmitigated. For the FY 2017 and FY 2018 subgrants, the state is providing the required local match to address this concern through FIF funding. If the state regularly (not just for FY 2017 to 2018) provides assistance with meeting the local match requirement, community participation would increase, property owner dropout would decline, and the success rate of the program would increase.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**
- **top five contracts by dollar amount, including contractor and purpose;**
- **the methods used to ensure accountability for funding and performance; and**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

Flood Mitigation Assistance:

Total federal contributions by grant year:

- FY 2011 Severe Repetitive Loss, EMT-2011-SR-0001 Severe Repetitive Loss, $54,908,901.73
- FY 2014 Flood Mitigation Assistance, EMT-2015-FM-E002 Flood Mitigation Assistance, $17,459,337.09
- FY 2015 Flood Mitigation Assistance, EMT-2016-FM-E001 Flood Mitigation Assistance, $33,404,327.50
- FY 2016 Flood Mitigation Assistance, EMT-2017-FM-E001 Flood Mitigation Assistance, $48,483,110.47

- FY 2017 Flood Mitigation Assistance, EMT-2018-FM-E002 Flood Mitigation Assistance, $29,732,031.95
- FY 2018 Flood Mitigation Assistance, EMT-2020-FM-E001 Flood Mitigation Assistance, $32,668,695.54
- FY 2019 Flood Mitigation Assistance, EMT-2020-FM-E006 Flood Mitigation Assistance, 28,572,905.39 (amount awarded to date, additional projects have been selected, further awards pending by FEMA totaling around $44 million)

The TWDB was recently notified that FEMA selected 13 subgrants for the FY 2020 Flood Mitigation Assistance grant cycle totaling around $63 million. FEMA will start the award process summer-fall 2021, depending on when the federal funds become available for award.

Flood Protection Grants: From 1983 to 2015, the TWDB awarded 136 Flood Protection Planning Grants totaling approximately $22,200,000 in funding assistance. Funding historically ranged from $1 million to $2 million per biennium, with the last awards issued in 2018 and six projects remaining in progress as of August 2021.

FIF: By January 2021, the TWDB had approved 15 applications totaling $9.8 million for Categories 3 and 4. A dashboard of all committed projects can be found on the program website.

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

N/A

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

N/A

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency,

such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Flood Mapping Program

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Flood Mapping

Location/Division: Austin/Water Science and Conservation, Flood Science and Community Assistance

Contact Name: Manuel Razo, Manager

Statutory Citation for Program: Texas Water Code § 16.316

B. What is the objective of this program or function? Describe the major activities performed under this program.

The primary objective of Flood Mapping is to identify flood risk and provide flood mapping information for the state. Major activities and key functions of the program include

- coordinate and develop hydrologic and hydraulic models;
- generate flood hazard maps and map products, including flood extents, frequency, and intensity; and
- conduct risk assessments that include annual average flood losses.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

Flood Mapping is a new program that was created early in FY 2020, and therefore does not have FY 20 statistics or performance measures. However, the TWDB has committed to completing approximate flood risk mapping for 100 percent of the state's land area by 2024 through a process called Base Level Engineering. As of February 2021, 17 percent of Texas watersheds have Base Level Engineering flood maps, another 32 percent of watersheds are in the process of being mapped, and mapping the remaining 51 percent of watersheds is planned as upcoming work.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

The TWDB has been a Cooperating Technical Partner with the FEMA since 2000 and has been supporting flood risk mapping efforts since that time. After the 86th Legislature provided additional funding and the creation of mapping and modeling groups within the TWDB, the agency has accelerated flood risk data creation.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

N/A

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Flood Mapping is part of Flood Science and Community Assistance within Water Science and Conservation and is administered by a manager and composed of four staff members located in Austin.

Flood Mapping produces updated flood risk information for the state, utilizing both in-house staff and managing multiple contracts. Funding these activities is comprised of state dollars and federal dollars provided by FEMA through the Cooperating Technical Partners program. Typically, the Notice of Funding Opportunity is released in May and applications for the grant program from each state are due mid-June. The Cooperating Technical Partners period of performance starts October 1 and can last two to three years depending on the project type. The TWDB uses federal guidance documents for product development and is also in the process of creating our own guidance documents.

For federal funding, the TWDB Cooperating Technical Partners program provides quarterly financial and performance reports 30 days after the end of each federal performance quarter. The TWDB provides close out documentation no later than 90 days after the expiration of a grant. Documentation includes the final financial status report and final performance report.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
Federal Funds	$	336,751
Flood	$	358,143
General Revenue	$	54,351
Grand Total	$	749,245

Federal Funding: FEMA Cooperating Technical Partners Program: Funding varies, typically from $250,000 to $900,000 per year. This funding is highly variable as it is dependent on Congressional appropriations and allocations to states.

State Funding: Floodplain Management Account in TIRF: Mapping efforts were funded by SB 500 and outlined in SB 7 from the 86th Legislature. Support for this work, which includes both modeling and mapping efforts, totals approximately $18,500,000 in FY 2021.

Local Funding: Participation is infrequent, ranging from $0 to $500,000 per year.

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

FEMA produces flood risk information focused on Flood Insurance Rate Maps for the state without direct TWDB participation. FEMA's focus is typically on highly populated areas and their funding for this work is often limited. The TWDB, in contrast, looks at providing updated flood risk information statewide, with a focus on covering both urban and rural areas. Both agencies use the same methods to produce consistent information.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Through participation in FEMA's Cooperating Technical Partners program, the TWDB coordinates closely with FEMA on projects undertaken by both agencies. The TWDB has a Cooperating Technical Partners Agreement with FEMA to collaborate on providing up-to-date flood risk information for the state.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

The TWDB coordinates with federal entities on the production of updated flood risk information, including by identifying area of need across the state; these include FEMA, the U.S. Army Corps of Engineers, the USGS, the National Oceanic and Atmospheric Administration/National Weather Service, and the Natural Resources Conservation Service.

Other Cooperating Technical Partners in Texas include San Antonio River Authority, North Central Texas Council of Governments, City of Dallas, City of Austin, City of Grand Prairie, Harris County Flood Control, Texas A&M, City of Arlington, City of Fort Worth, and the Guadalupe-Blanco River Authority. The TWDB coordinates with the various Texas partners to determine areas of need for updated flood risk information, collaborate on creating update flood risk information, and prevent duplication of efforts.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

Flood Mapping contracts are primarily for the production and update of flood risk information for the state, but the contract has also been used to support flood related activities that the agency is involved in.

- **the amount of those expenditures in fiscal year 2020;**

$966,025

- **the number of contracts accounting for those expenditures;**

2

- **the method used to procure contracts;**

The agency uses a Request for Qualifications as defined by the guidelines provided by the Comptroller's office.

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
AECOM	$499,697.45
Halff Associates	$466,327.08

The purpose of these contracts is to provide flood mapping.

- **the methods used to ensure accountability for funding and performance;**

Monthly invoices, progress reports, and status meetings are reviewed and attended by the designated contract manager. Detailed review of the deliverables is conducted by subject matter experts within the Flood Science and Community Assistance division throughout the life of the contract and task orders.

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

The volume of flood data and information resources is growing rapidly, with new maps and models coming from various federal, state, and local entities. Products being developed use different technologies and are designed for different purposes, yet these differences are often not easy for members of the public to discern or understand. Additionally, this proliferation of new flood information and resources comes on top of existing data and maps, many of which are outdated. This combination of maps, data, and information from various sources, in various formats, and for various purposes makes educating the public on local flood risk challenging.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

N/A

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Flood Modeling

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Flood Modeling

Location/Division: Austin/Water Science and Conservation, Flood Science and Community Assistance

Contact Name: Srikanth Koka, Manager

Statutory Citation for Program: Texas Water Code § 16.316

B. What is the objective of this program or function? Describe the major activities performed under this program.

The primary objective of Flood Modeling is to provide flood modeling services and engineering technical assistance in support of the state's floodplain management, flood grant, and flood mapping objectives. Major activities include the following:

- Modeling, mapping, and engineering related to flood hazard and risk identification
- Support of Base Level Engineering data development and dissemination
- Support of federal/state flood planning and mitigation programs and initiatives
- Provision of technical guidance and assistance to other flood-related agency functions such as planning, mitigation, and community assistance
- Coordination/collaboration with FEMA on federal flood-related programs
- Engineering economic analyses for assessing flood mitigation project feasibility and cost effectiveness
- Research and development on topics related to flood science and technologies

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

Flood Modeling is a new function that was created early in FY 2020 and therefore does not have FY 2020 statistics or performance measures. However, the TWDB has committed to completing approximate flood risk mapping for 100 percent of the state's land area by 2024 through a process called Base Level Engineering. As of February 2021, 17 percent of Texas watersheds have updated flood maps through this process, another 32 percent of watersheds are in the process of being mapped, and mapping the remaining 51 percent of watersheds is planned as upcoming work.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

Flood Modeling provides a core group of staff with expertise that ultimately support the state's new, statewide flood planning efforts. Flood Modeling drives flood mapping, which in turn drives floodplain management, flood planning, and flood mitigation. While engineering contractors provide significant flood modeling products, having in-house expertise to provide consistency across various contractors and to assist with decision-making in all flood contexts is essential to the success of the agency's new flood programs.

Flood Modeling provides technical, modeling, and engineering support to various state and federal flood programs. For example, the team plays a lead role in support of the state's flood mapping efforts, such as Base Level Engineering. The team also provides technical support to grant programs by providing review of grant applications under FEMA's Flood Mitigation Assistance and the state's FIF programs. Additionally, the team generates technical guidance for a variety of topics related to flood hazard mapping, planning, and mitigation; develops flood hazard and risk data; and coordinates and conducts research and development related to flood science topics. The team also supports agency outreach functions and plays a key role in communicating technical information to community officials and other stakeholders.

E List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

N/A

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Flood Modeling is part of Flood Science and Community Assistance within Water Science and Conservation. Flood Modeling is administered by a manager and composed of six engineers and engineering specialists.

Flood Modeling supports flood planning; supports federal and state grant programs by reviewing benefit cost analyses for proposed flood mitigation/management projects under federal and state grant programs; develops technical guidance related flood risk data development topics; and conducts research and development on flood related topics and technology. Flood Modeling utilizes in-house staff and contract support. Funding these activities is comprised of primarily state dollars allocated through the floodplain management account under TIRF. The TWDB uses federal guidance documents for product development and is also in the process of creating our own guidance documents.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding	Amount
Flood	$ 27,331
Grand Total	$ 27,331

Floodplain Management Account in the TIRF: Modeling efforts were funded by SB 500 and outlined in SB 7 from the 86th Legislature. Support for this work, which includes both modeling and mapping efforts, totals approximately $18,500,000 in FY 2021.

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

FEMA produces flood risk information focused on Flood Insurance Rate Maps for the state without direct TWDB participation (though there is frequent coordination). FEMA's focus is typically on highly populated areas, and funding for this work is often limited. The TWDB, in contrast, looks at providing updated flood risk information statewide with a focus on covering both urban and rural areas. Both agencies use the same methods to produce consistent information.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Through participation in FEMA's Cooperating Technical Partners program, we coordinate closely with FEMA on projects undertaken by both agencies. The TWDB has a Cooperating Technical Partners Agreement with FEMA to collaborate on providing up-to-date flood risk information for the state.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

The TWDB coordinates with a number of agencies on the production of updated flood risk information, including by identifying area of need across the state, including FEMA, the U.S. Army Corps of Engineers, the USGS, the National Oceanic and Atmospheric Administration/National Weather Service, and the Natural Resources Conservation Service.

Other Cooperating Technical Partners in Texas: San Antonio River Authority, North Central Texas Council of Governments, City of Dallas, City of Austin, City of Grand Prairie, Harris County Flood Control, Texas A&M, City of Arlington, City of Fort Worth, Guadalupe-Blanco River Authority. The TWDB coordinates with the various Texas Cooperating Technical Partners to determine areas of need for updated flood risk information, collaborate on creating update flood risk information, and prevent duplication of efforts.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**
- **top five contracts by dollar amount, including contractor and purpose;**
- **the methods used to ensure accountability for funding and performance; and**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

Two senior flood modeler positions have gone unfilled for nearly two years. Attracting and recruiting highly qualified and experienced flood engineers and modelers has been challenging due to an extremely competitive job market. The modeling group focuses on highly technical/engineering flood-related topics, including research and development. To perform these functions as well as support regular functions of the program, the modeling team requires hiring qualified senior technical staff, which has proven very difficult.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

N/A

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**

- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Groundwater

Groundwater is a major source of water in Texas, providing about 60 percent of the 16.1 million acre-feet of water used in the state. The Groundwater division collects, interprets, and provides accurate, objective information on the groundwater resources of Texas so the people of Texas know and understand their groundwater resources.

The Groundwater division is responsible for all aspects of groundwater studies in the state. Staff monitor groundwater levels and groundwater quality in 9 major and 22 minor aquifers, map and characterize brackish groundwater, conduct regional-scale groundwater modeling, and house and maintain water well records. Staff also review and approve groundwater management plans and participate in the establishment of DFCs of aquifers in groundwater management areas. Groundwater division geologists and hydrologists also conduct investigations of aquifer and groundwater conditions to support the needs of citizens, policy makers, and lawmakers of the state.

Water Science and Conservation: Brackish Resources Aquifer Characterization System

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Brackish Resources Aquifer Characterization System (BRACS)

Location/Division: Austin/Water Science and Conservation, Groundwater

Contact Name: Larry French, Director

Statutory Citation for Program:

- Texas Water Code § 16.012(a)(b)(d) (collect and disseminate water data)
- Texas Water Code § 16.013 (hydrologic and geologic functions)

- Texas Water Code § 16.015 (groundwater studies)
- Texas Water Code § 16.060 (desalination studies and research)
- Texas Water Code § 36.1015 (rules for permits in brackish groundwater production zones)

B. What is the objective of this program or function? Describe the major activities performed under this program.

The primary objectives of BRACS are to 1) map and characterize the major and minor aquifers in the state known to contain brackish groundwater and 2) designate production zones with the potential for long-term production capacity with minimal risk of adverse impacts. Major activities include

- conducting studies to map aquifers or portions of aquifers containing brackish groundwater;
- updating and maintaining the BRACS database and geophysical log collections;
- fulfilling data requests and disseminating information to the public, stakeholders, and legislative staff;
- updating data on the TWDB website;
- managing related contracts;
- designating brackish groundwater production zones in brackish aquifers by December 1, 2032;
- preparing a report on brackish groundwater production zones (which is included in the biennial report on seawater and groundwater desalination) for the Texas Legislature, due December 1 of each even-numbered year;
- preparing a progress report on studies of aquifers and brackish groundwater for the Texas Legislature due December 1 of each odd-numbered year; and
- determining if applications for groundwater production permits from GCDs in designated brackish groundwater production zone are compatible with the designated brackish groundwater production zone and sufficient monitoring wells are proposed to avoid significant aquifer level declines or negative effects of water quality in the production zone or adjacent aquifers. For permits proposed in the Gulf Coast Aquifer System, staff determine if pumping of brackish groundwater according to the terms of the proposed permit would cause or likely cause subsidence of the land surface.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

N/A

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

BRACS was established in 2009 in Water Science and Conservation to map and classify brackish groundwater in the state. Of the 31 designated major and minor aquifers in Texas, 27 are known to contain brackish groundwater. In 2011, the TWDB completed a pilot study on the Pecos Valley Aquifer in West Texas to establish the methods of data analysis for future brackish groundwater studies. In 2021, the TWDB has completed 14 BRACS studies and has two ongoing studies. In 2015, the 84th Legislature passed HB 30 directing the TWDB to conduct studies to identify and designate brackish groundwater production zones in four specific aquifers and present findings by December 1, 2016. The legislation further required the TWDB to complete zone designation in the remaining qualifying aquifers by December 1, 2022.

On October 20, 2016, the Board designated eight brackish groundwater production zones in the Carrizo-Wilcox, Gulf Coast, and Rustler aquifers. No zones were designated in the Blaine Aquifer. In March 2019, the Board designated an additional 23 production zones in the Blossom, Nacatoch, and Northern Trinity aquifers. No zones were designated in the Lipan Aquifer. In 2019, the 86th Legislature restored funding for the BRACS Program with the passage of Rider 24 in HB 1, General Appropriations Act, which appropriated staff positions and funding to the TWDB for contract and administrative costs to support designation of brackish groundwater production zones in aquifers of the state, excluding the Dockum Aquifer. The 86th Legislature also passed SB 1041 that extended the deadline to complete zone designations from December 1, 2022, to December 1, 2032, and HB 722 that established a permitting framework for developing water supplies from TWDB-designated brackish groundwater productions zones.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply.

BRACS makes all completed studies and corresponding data available via the TWDB website, email, or verbal request, so there are no qualifications or eligibility requirements to use the information it provides.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

BRACS is part of the Groundwater division of Water Science and Conservation and is organized with a manager (currently vacant, to be filled in 2021) and seven geologists.

The manager is responsible for leadership and management of the team, ensuring that work activities are conducted according to the scopes of work, performing administrative duties

(such as monitoring budget, timesheets, staff meetings, performance plans, merits, hiring, discipline, and general oversight), and serving as the main contact for program information.

All team members are responsible for performing geologic mapping and resource characterization of brackish aquifers, providing technical assistance to customers and cooperators, and managing external contracts as needed.

BRACS is responsible for the mapping and characterization of brackish groundwater in the major and minor aquifers of the state as well as the designation of production zones with the potential for long-term production capacity with minimal risk of adverse impacts. Program activities also include updating and maintaining the BRACS database and geophysical log collections, fulfilling data requests and disseminating information to the public, stakeholders, and legislative staff. Additional responsibilities include designating brackish groundwater production zones in brackish aquifers by December 1, 2032; preparing a report on brackish groundwater production zones (which is included in the biennial report on seawater and groundwater desalination) for the Texas Legislature, due December 1 of each even-numbered year; and preparing a progress report on studies of aquifers and brackish groundwater for the Texas Legislature, due December 1 of each odd-numbered year.

BRACS will also work to determine if applications for groundwater production permits from GCDs in designated brackish groundwater production zones are compatible with the designated brackish groundwater production zones and sufficient monitoring wells are proposed to avoid significant aquifer level declines or negative effects on water quality in the production zone or adjacent aquifers.

The TWDB Administrative Rules related to the designation of brackish water production zones can be found in Texas Administrative Code, Title 31, Part 10, Chapter 356, Subchapter G.

The BRACS program information sheet includes more details.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

This program had no expenditures in FY 2020. Unexpended funds were carried over to FY 2021, as provided by Article VI, TWDB Rider 24, Studies of Aquifers and Brackish Groundwater (HB 1, 86th Legislature, General Appropriations Act).

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

No external programs provide identical or similar services and functions.

Internally, both BRACS and Groundwater Modeling within the Groundwater division provide estimates of groundwater volumes available for potential production. Total estimated recoverable storage and modeled available groundwater refer to estimated volumes of

groundwater defined in statute and that are derived and provided by Groundwater Modeling to inform policy and management decisions by GCDs. Similarly, BRACS estimates brackish groundwater volumes in place for use by GCDs and stakeholders interested in developing the resource. Additionally, BRACS calculates 30- and 50-year volumes that are potentially available for future production in designated brackish groundwater production zones. The approach to determining the respective volumes of water has been developed by each program separately using different assumptions and methods and to serve related but different objectives.

Another aspect that overlaps between programs is the development of the aquifer dimensions (tops of and bottoms of the aquifer extent). Because the two programs were created initially for different purposes and characterize the aquifers at different scales, methods and assumptions do not align perfectly.

Externally, the RRC approves permits for wells related to oil and gas activity which may intersect brackish groundwater resources. BRACS and the RRC have similar interests in characterizing the subsurface; however, the RRC's interests relate to their duties as part of a regulatory function whereas TWDB activities serve to provide information and support of long-term water planning efforts.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Internally, BRACS was recently transferred from Conservation and Innovative Water Technologies to the Groundwater division to facilitate better coordination and to better align methodology and assumptions. BRACS and Groundwater Modeling have also initiated monthly coordination meetings to leverage resources towards common goals, facilitate cross training, and look for opportunities to better align operations and methods.

Externally, BRACS has an MOU to use RRC "linen maps" which are copyrighted base maps that the RRC plotted well locations on from approximately the 1950s to 1980s. Groundwater also has a memorandum of agreement with the Texas Board of Professional Geoscientists regarding duties of the TWDB and the Texas Board of Professional Geoscientists in the regulation of professional geoscience. Finally, in July 2017, BRACS staff began collaborating with the Groundwater Advisory Unit of the RRC to by holding monthly meetings to discuss distinct aspects of their programs and to share information related to injection wells permitted by the RRC and brackish groundwater production zone designations determined by the TWDB. The meetings have evolved and expanded to larger coordination meetings, with the addition of three more agencies, the University of Texas Bureau of Economic Geology, TCEQ, and USGS.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

With the implementation of Texas Water Code § 36.1015, the TWDB will be working with GCDs to determine if proposed groundwater production permits in designated brackish groundwater

production zones are compatible with the designated brackish groundwater production zones and sufficient monitoring wells are proposed to avoid significant aquifer level declines or negative effects of water quality in the production zone or adjacent aquifers. For permits proposed in the Gulf Coast Aquifer System, the TWDB will determine if the proposed permit would cause or likely to cause subsidence of the land surface.

As mentioned under Item L, coordination meetings between the RRC, the University of Texas Bureau of Economic Geology, the USGS, and the TWDB have been held to discuss projects, share data, and present findings. Coordination between the University of Texas Bureau of Economic Geology, RRC, USGS, TCEQ, and the TWDB also occurs through stakeholder and workgroup meetings of contracted studies. During these stakeholder or workgroup meetings, members from each agency can provide input into the study project being developed. BRACS staff have also given presentations and attended stakeholder meetings of GCD and other organizations.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**
- **the methods used to ensure accountability for funding and performance; and**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

N/A

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

See the following links for BRACS program information sheets, legislative reports, and websites for various functions:

- www.twdb.texas.gov/publications/shells/BRACS.pdf
- www.twdb.texas.gov/groundwater/bracs/doc/20191202_AnnualReport_StudyUpdate_final.pdf

- www.twdb.texas.gov/groundwater/bracs/index.asp
  www.twdb.texas.gov/groundwater/bracs/database.asp
- www.twdb.texas.gov/groundwater/bracs/GISdata.asp
- www.twdb.texas.gov/groundwater/bracs/WellLogs.asp

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Groundwater Modeling

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Groundwater Modeling

Location/Division: Austin/Water Science and Conservation, Groundwater

Contact Name: Larry French, Director; Cindy Ridgeway, Manager

Statutory Citation for Program: Texas Water Code:

- § 16.012(a)(b)(d) (collect and disseminate water data)
- § 16.012(l) (Groundwater Availability Modeling development)
- § 16.013 (hydrologic and geologic functions)
- § 16.015 (groundwater studies)
- § 36.1071(h) (groundwater information for GCD management plans)

- § 36.108(d) (factors considered for DFCs)
- § 36.1084(b) (modeled available groundwater)

B. What is the objective of this program or function? Describe the major activities performed under this program.

Groundwater Modeling develops, maintains, and runs models of the aquifers of Texas to assist GCDs, regional water planning groups, and others in their planning efforts for managing groundwater resources. In accordance with statute, Groundwater Modeling

- develops models for the major and minor aquifers of Texas (Texas Water Code § 16.012[l]);
- conducts model runs and develops reports in support of GCDs (Texas Water Code § 36.1071[h]), groundwater management areas (Texas Water Code § 36.108[d]), regional water planning groups (Texas Water Code § 16.012[l]), and the Texas Legislature;
- develops estimates of modeled available groundwater based on DFCs (Texas Water Code § 36.1084[b]); and
- develops and provides total estimated recoverable storage for each aquifer in each groundwater management area (Texas Water Code § 36.108[d]).

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

N/A

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

Groundwater Availability Modeling officially began in 2001 with funding and legislation. Initially, the models were created to assist regional water planning groups and GCDs. Additional requirements were added beginning in 2005, such as providing water budget data to GCDs, estimating managed/modeled available groundwater based on DFCs, and calculating total estimated recoverable storage.

Funding for staffing and associated funds for contracting aquifer/modeling studies has fluctuated over time. Staffing and resources in Groundwater Modeling has varied from 5 to 14 FTE positions and currently has 12 FTEs including one open position. Funding for contracts has also ranged from $3.135 million in FY 2002 and FY 2003 to $1.44 million in FY 2012 and FY 2013, with $1.68 million for the current biennium (FY 20-21). The current level of staffing and funding is the result of additional appropriations provided by the 86th Legislature.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

Groundwater Modeling makes all information and data available to any interested parties via the TWDB website, email, or verbal request, so there are no qualifications or eligibility requirements to use the information, data, and assistance that staff provides.

Completed models and studies are available for the general public via the Groundwater Availability Model website.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Groundwater Modeling is part of the Groundwater division within Water Science and Conservation and works closely with other areas within the TWDB as well as GCDs. The program is organized with a manager and eleven staff that are modelers and GIS specialists.

The manager is responsible for leadership and management of the team, ensuring that work activities are conducted according to the scopes of work, ensuring that work process documents and software updates are current, performing administrative duties (such as monitoring budget, timesheets, staff meetings, performance plans, merits, hiring, discipline, and general oversight), and serving as the main contact for program information.

All team members are responsible for performing or supporting groundwater modeling activities, coordinating activities with BRACS staff and other staff that use groundwater models, providing technical assistance to customers and cooperators, and managing external contracts as needed.

Groundwater Modeling develops, maintains, and runs models of the aquifers of Texas to assist GCDs, regional water planning groups, and others in their planning efforts for managing groundwater resources. In addition, Groundwater Modeling develops models for the major and minor aquifers of Texas, conducts model runs and develops reports in support of various groundwater organizations and the legislature, develops estimates of modeled available groundwater based on DFCs, and develops and provides total estimated recoverable storage for each aquifer in each groundwater management area. TWDB's Administrative Rules related to groundwater management can be found at Texas Administrative Code, Title 31, Part 10, Chapter 356.

View Groundwater Modeling's program information sheet for more details.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For

state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding	Amount
General Revenue	$ 1,236,116
Grand Total	$ 1,236,116

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

Externally, no other programs provide identical services and functions, although some provide similar services. Consulting firms use TWDB-developed models to provide more localized services to GCDs. The USGS develops models independently with the TWDB as a stakeholder.

Internally, both BRACS and Groundwater Modeling within the Groundwater division provide estimates of groundwater volumes available for potential production. Total estimated recoverable storage (TERS) and MAG refer to estimated volumes of groundwater defined in statute and that are derived and provided by Groundwater Modeling to informing policy and management decisions by GCDs. Similarly, BRACS estimates brackish groundwater volumes in place to provide GCDs and stakeholders interested in developing the resource some basic information. Additionally, BRACS calculates 30- and 50-year volumes that are potentially available for future production in designated brackish groundwater production zones. The approach to determining the respective volumes of water has been developed by each program separately using different assumptions and methods and to serve related but different objectives.

Another aspect that overlaps between programs is the development on the aquifer dimensions (tops of and bottoms of the aquifer extent). Because the two programs were created initially for different purposes and characterize the aquifers at different scales, methods and assumptions do not align perfectly.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Internally, BRACS was recently transferred from Conservation and Innovative Water Technologies to the Groundwater division to facilitate better coordination and to better align methodology and assumptions with Groundwater Modeling. BRACS and Groundwater Modeling have also initiated monthly coordination meetings to leverage resources towards common goals, facilitate cross training, and look for opportunities to better align operations and methods.

Externally, the Groundwater division also has an MOU with the Texas Board of Professional Geoscientists regarding duties of the TWDB and the Texas Board of Professional Geoscientists in the regulation of professional geoscience. The Groundwater division also has a memorandum of agreement with the Harris Galveston Subsidence District to develop the updated model for the northern portion of the Gulf Coast Aquifer System using Groundwater Availability Modeling Standards.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

Groundwater Modeling provides model run information to GCDs for use in groundwater management plans and also provides MAG estimates to GCDs to inform permitting decisions and to regional water planning groups to inform groundwater availability for water planning purposes.

Coordination between the TCEQ, the Texas Department of Agriculture, and the TWDB also occurs through stakeholder meetings of contracted studies. During these stakeholder meetings, members from each agency can provide input into the study project being developed.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

The general purpose of the contracts is to support Groundwater Water Availability Modeling. These contracts have ranged from developing or updating the associated numerical groundwater flow models to research and feasibility studies related to the data needed for the models.

- **the amount of those expenditures in fiscal year 2020;**

$621,858.28

- **the number of contracts accounting for those expenditures;**

3

- **the method used to procure contracts;**

The agency adheres to the Texas Comptroller of Public Accounts guidelines for contracting.

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
Daniel B Stephens & Associates	$300,171.00
GSI Environmental, Inc	$219,427.28
GSI Environmental Inc.	$102,260.00

Daniel B. Stephens and Associates is contracted to develop the conceptual model for the Cross Timbers Aquifer.

GSI Environmental is contracted to update the model for the southern portion of the Queen City, Sparta, and Carrizo-Wilcox aquifers and update the model for the northern portion of the Queen City, Sparta, and Carrizo-Wilcox aquifers.

- **the methods used to ensure accountability for funding and performance; and**

Monthly progress reports, interim draft deliverable milestones tied to retainage release, and additional progress meetings as needed. Contracts include standards that describe how to write and organize the report, data, and models.

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

Groundwater Modeling consistently encounters challenges hiring qualified staff due to the highly specialized skill sets required for positions.

Texas Water Code § 36.1071, Subsections (e) and (h), requires that the Executive Administrator of the TWDB provide Groundwater Availability Modeling information to GCDs for use in developing their mandated groundwater management plans. On a staggered five-year cycle, Groundwater Modeling provides select components of historical modeled groundwater budgets to GCDs in response to this directive. This requirement was implemented prior to legislation requiring GCDs to develop DFCs for relevant aquifers within their districts and groundwater management area.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

See the following links for Groundwater Modeling program information sheet and frequently asked questions for various functions:

- www.twdb.texas.gov/publications/shells/GAM.pdf
- www.twdb.texas.gov/groundwater/faq/faqgam.asp
- www.twdb.texas.gov/groundwater/faq/faqmag.asp

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Groundwater Monitoring

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Groundwater Monitoring

Location/Division: Austin/Water Science and Conservation, Groundwater

Contact Name: Larry French, Director; Rebecca Storms, Manager

Statutory Citation for Program: Texas Water Code

§ 16.012(a)(b)(d) (collect and disseminate water data)

§ 16.013 (hydrologic and geologic functions)

§ 16.015 (groundwater studies)

B. What is the objective of this program or function? Describe the major activities performed under this program.

Groundwater Monitoring collects, analyzes, and maintains groundwater data of the aquifers of Texas to monitor the occurrence, quantity, and quality of ambient groundwater conditions and changes and to assist with the development of models and efforts to manage groundwater resources. The major activities include the below:

- collecting annual water level measurements throughout the state and continuously (daily) in areas equipped with recorder wells to provide information that reveals current water levels and tracks trends and changes over time (Texas Water Code §§ 16.012(a)(b) and 16.015);
- collecting and analyzing water quality samples from wells and springs in all major and minor aquifers on a cyclical basis to provide information that can be used to characterize the ambient water quality and track trends and changes that may have occurred over time (Texas Water Code §§ 16.012(a)(b) and 16.015);
- analyzing, evaluating, and publishing water level and water quality information for newsletters, publications, web page updates, and special aquifer studies or investigations (as authorized by Texas Water Code § 16.013);
- providing assistance to GCDs with the implementation of their monitoring programs (Texas Water Code § 16.012(d)).

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

Key statistics include:

- Approximately 1,800 wells are measured annually by staff between October and February. Cooperating entities, including GCDs and the USGS, measure an additional 6,000 wells annually.
- Groundwater monitoring, with the cooperation of several entities throughout the state, maintains more than 200 automatic recorder wells in nearly 92 counties. Recorder wells collect water-level measurements hourly and transfer data via satellite to the TWDB website every twelve hours. Some recorders are equipped with data cards that are typically downloaded every six months.
- Over 1 million water levels have been measured since the first measurements were made in 1895.
- In FY 2020, approximately 28,800 water level measurements were recorded by all entities; some observation wells are measured multiple times throughout the year.

- Over a four-year sampling period, staff collects analyses (or obtains analyses of samples collected by cooperating entities) of approximately 1,300 or more groundwater quality samples from wells and springs in the major and minor aquifers of the state.
- In FY 2020, approximately 400 water quality samples were collected by TWDB and cooperating entities. These numbers were significantly impacted by COVID-19 travel restrictions.
- A new Springs Monitoring effort was initiated in FY 2020 as part of the water quality program. Flow measurements and water quality samples were collected from 11 springs, and plans are to expand the program in FY 2021.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

The Groundwater division data team, in charge of administering, maintaining, upgrading, and ensuring quality of the TWDB Groundwater Database and online web mapping applications, has historically been housed in Groundwater Monitoring. Recently, the data team was moved to Groundwater Technical Assistance since its functions are more aligned with the mission and activities of Groundwater Technical Assistance.

The Recorder Well team was created within Groundwater Monitoring to restructure the recorder program and provide more assistance. The recorder well program previously consisted of one main program supervisor and another staff member who primarily assisted with this program in addition to other monitoring tasks. The Recorder Well team now consists of 2.5 FTEs: a team lead and two full-time staff dedicated to the recorder program.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply.

Groundwater Monitoring makes all information and data available to any interested parties via the TWDB website, email, or verbal request, so there are no qualifications or eligibility requirements to use the information, data, and assistance provided. Many entities use the data collected by Groundwater Monitoring, including governmental entities at all levels, university researchers, other areas of the TWDB, private companies, and the general public.

Groundwater Monitoring conducts monitoring activities on public and private properties. Private properties require consent and permission from the landowner. The TWDB obtains this consent and sends a copy of water quality results to the landowner upon sample completion. The landowner may withdraw consent at any time.

Additionally, Groundwater Monitoring works with GCDs and other cooperators to maintain recorder well sites that make up the recorder well network. The TWDB typically provides maintenance and troubleshooting assistance for equipment that is initially purchased by the

cooperator. The TWDB also provides training in groundwater monitoring techniques to cooperators.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Groundwater Monitoring is part of the Groundwater division within Water Science and Conservation and includes a manager and seven staff that are geologists and resource specialists.

The manager is responsible for leadership and management of the team, coordinating the activities and schedules of field staff, performing administrative duties (such as monitoring budget, timesheets, staff meetings, performance plans, merits, hiring, discipline, and general oversight), and serving as the main contact for program information.

All team members are responsible for following established protocols for water level monitoring and groundwater quality sampling, ensuring that field safety procedures are strictly followed, coordinating data entry processes with the Data Team personnel, and developing presentation materials as needed.

Groundwater Monitoring collects, analyzes, and maintains groundwater data of the aquifers of Texas to monitor the occurrence, quantity, and quality of ambient groundwater conditions and changes and to assist with the development of models and efforts to manage groundwater resources.

Specific activities include annual measurement of water levels throughout the state and continuously (daily) in areas equipped with recorder wells to provide information that reveals current water levels and tracks trends and changes over time; collection and analysis of water quality samples from wells and springs in all major and minor aquifers on a cyclical basis to characterize the ambient water quality and track trends and changes that may have occurred over time; analyze, evaluate, and publish water level and water quality information; and assistance to GCDs with the implementation of their monitoring programs.

The TWDB Administrative Rules related to groundwater management can be found in Texas Administrative Code, Title 31, Part 10, Chapter 356.

See the following link to the Groundwater Monitoring program information sheet for more details: www.twdb.texas.gov/publications/shells/GwMon.pdf

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
Federal Funds	$	3,938
General Revenue	$	556,266
Grand Total	$	560,204

General revenue is the primary funding source for Groundwater Monitoring salaries, the general operating budget, and the water quality analysis contract. It additionally receives small federal grants as they are applied for and approved that are funded by the USGS National Groundwater Monitoring Network. These grants fund staff labor hours to work on maintaining persistent data services to keep TWDB monitoring wells and associated data connected to the network data portal. The grants can also fund special projects, such as adding a list of new wells to the network for a given aquifer, maintenance and troubleshooting on wells that are part of the network, and funding recorder program equipment upgrades. These grants often require a state match of some of the funding.

Finally, Groundwater Monitoring receives occasional funding from the TCEQ Supplemental Environmental Program, where violators under TCEQ enforcement can choose to make contributions to the TWDB Recorder Program to install new sites in counties where there are no existing sites. The funding from this program is not consistent or guaranteed.

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

No internal programs provide identical or similar services and functions.

No external programs provide identical services and functions, although some provide similar services. GCDs, the USGS, municipal water districts, cities and municipalities, and the International Boundary and Water Commission measure water levels in their areas of interest or jurisdiction. They provide these measurements to the TWDB for inclusion in the groundwater database, and TWDB does not measure these wells.

Some of these entities also sample wells for groundwater quality analysis. These data are occasionally shared with the TWDB but not as frequently as the water level data described above. Some groundwater districts may provide in-house, portable lab analysis; whereas the TWDB contracts with a National Environmental Laboratory Association Program accredited lab. Water districts and cities operating public supply wells, regulated by the TCEQ, may conduct similar sampling and analysis but they primarily analyze for constituents of interest to regulated

public water systems. The USGS performs the most comprehensive sampling and analysis for a smaller select set of wells and a broader suite of constituents such as pharmaceuticals.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Groundwater Monitoring has operated under informal agreements with GCDs and the USGS for decades. These agencies routinely send water level data to the TWDB on an annual basis. The USGS and the TCEQ also share water quality data with the TWDB upon demand. TWDB staff contact districts to encourage them to meet for informal training that ultimately is designed to promote district take-over of water level monitoring duties. The TWDB has also hosted workshops in which we emphasize agency assistance with water level monitoring. The TWDB typically measures water levels in counties without GCDs or where GCD involvement is minimal.

Groundwater Monitoring's manager and other Groundwater division staff participate in the Texas Groundwater Protection Committee and subcommittee meetings, which have ensured that that all groundwater information about previous, current, and future water quality sampling projects is shared with the interested representatives of each entity. The TWDB has served as vice-chair of this committee since its inception in 1989.

TCEQ staff routinely use TWDB data when producing their biannual report to the EPA that includes an assessment of groundwater quality in all of the state's aquifers. Most importantly, to ensure that no duplication or conflict occurs, members of the Texas Groundwater Protection Committee meet quarterly and work together throughout the year on a number of publications describing monitoring activities. These publications include: the yearly Joint Monitoring and Contamination report, the biannual report to the legislature describing monitoring activities and recommendations for future funding, and the once-every-six-year strategy document that considers the challenges that need to be addressed in the overall monitoring of all types of groundwater situations.

Additionally, the TWDB works with the TCEQ in a cooperative agreement to collect samples for pesticide analysis alongside traditional water quality samples during the water quality season. The TCEQ performs the pesticide analyses and conducts a pesticide sample collection training for TWDB staff at the start of water quality season as part of this program requirement. The TWDB works on other cooperative monitoring projects with stakeholders as funding allows to contribute resources towards special or supplementary studies or investigations. This involves funding for water quality analyses and labor for groundwater monitoring data collection. The cooperators are expected to share any data collected with TWDB that was paid for with TWDB resources.

Groundwater also has a memorandum of agreement with the Texas Board of Professional Geoscientists regarding duties of the TWDB and the Texas Board of Professional Geoscientists in the regulation of professional geoscience.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

See responses in sections H and I.

Groundwater Monitoring works directly with GCDs on monitoring activities and data assessment and analysis.

The USGS conducts a federal groundwater monitoring and data sharing program. The USGS performs the most comprehensive sampling and analysis for water quality constituents on a much more limited scale as compared to the TWDB. It also administers grants for various monitoring activities. Groundwater Monitoring applies for grants from the National Groundwater Monitoring Network, as mentioned previously; requests/shares data with the USGS; and works with the USGS on recorder well site locations and other related monitoring well network issues as needed.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

Groundwater Monitoring had one contract with the Lower Colorado River Authority in FY20 to perform water quality analyses on water samples collected by the TWDB.

- **the amount of those expenditures in fiscal year 2020;**

$186,339

- **the number of contracts accounting for those expenditures;**

1

- **the method used to procure contracts;**

Groundwater Monitoring contracted with the Lower Colorado River Authority for laboratory services for FY16 through a request for proposal with authorization to renew in FY17. Subsequent contracts, including for FY20, have been interlocal contract renewals.

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
Lower Colorado River Authority	$186,339.00

Purpose: Laboratory analyses of water quality for samples collected by the TWDB.

- **the methods used to ensure accountability for funding and performance;**

The contract requires the contractor to deliver results to the TWDB within 15 days of completing analyses and requires monthly invoicing upon completion of the analyses and delivery of the results. Invoices and payment requests are reviewed and authorized by the designated contract manager. The contract also stipulates that the contractor retain samples for 30 days after the results have been submitted to the TWDB in the event that the TWDB requests re-testing.

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

Groundwater Monitoring manages two groundwater monitoring programs, the Springs Monitoring program and the Recorder Well program, that are not explicitly named in the Texas Water Code. However, these are critical programs, alongside regular Groundwater Monitoring data collection activities, that are needed to understand water resources in the state. These programs could benefit from identification in statute as well as clearly delineated funding mechanisms that allow for cost-sharing opportunities with districts.

Part of the Recorder Well program includes cooperating with and assisting local GCDs with equipment maintenance and upgrades. Districts use different types of equipment, and funding resources vary significantly. Many district sites are due for equipment upgrades that the districts cannot afford, which may result in the TWDB either losing monitoring sites or needing to use state funding to upgrade those sites. State funding is also needed to fund upgrades to existing TWDB sites, so the agency may have to choose which sites to upgrade and maintain and which sites will cease to be part of the monitoring database.

Staff turnover in Groundwater Monitoring is prevalent and results in losing experienced staff with institutional knowledge and devoting significant amounts of time to training new staff, which can negatively impact time dedicated to data collection and analysis.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

See the following links for the Groundwater Monitoring program information sheet, frequently asked questions, and other information:

- www.twdb.texas.gov/publications/shells/GwMon.pdf
- www.twdb.texas.gov/groundwater/data/index.asp
- www.twdb.texas.gov/groundwater/data/springs.asp
- www.twdb.texas.gov/groundwater/faq/faqgwdb.asp

- www.twdb.texas.gov/groundwater/conservation_districts/index.asp

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Groundwater Technical Assistance

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Groundwater Technical Assistance

Location/Division: Austin/Water Science and Conservation, Groundwater

Contact Name: Larry French, Director; Natalie Ballew, Manager

Statutory Citation for Program: Texas Water Code

§ 16.012, § 16.013, § 16.015, § 16.053(g), § 16.053(j), § 35.004, § 35.007, § 36.1071(c), § 36.1072, § 36.1073, § 36.108, § 36.1083, § 36.1084, § 36.1132

B. What is the objective of this program or function? Describe the major activities performed under this program.

The primary objective of Groundwater Technical Assistance is to be the most reliable and comprehensive source of information for all groundwater-related data and information in Texas through the provision of technical assistance. Major program activities include

- facilitating access to basic hydrogeological data and groundwater management information with any and all stakeholders (including state agencies and other interested persons) via presentations, conversations, accessible data, and reports;
- providing technical support to assist GCDs in the development of their groundwater management plans and reviewing these plans for administrative completeness;
- facilitating development of DFCs and coordinating, tracking, and reviewing DFC submissions for Texas aquifers by GCDs in groundwater management areas, including conducting scientific and technical analysis in the event of a petition;
- maintaining a database and distributing modeled available groundwater to districts and regional water planning groups;
- maintaining a water resource data collection and dissemination network in coordination with federal, state, and local governments; institutions of higher learning; and other parties to support monitoring ambient water conditions in Texas;
- administering, maintaining, upgrading, and ensuring quality of the TWDB Groundwater Database and online web mapping applications (Water Data Interactive and Water Data for Texas) as a network to disseminate water resource-related information;
- conducting groundwater-related research in order to evaluate the occurrence, quantity, quality, and availability of groundwater in the state to provide to GCDs for consideration in issuing permits;
- coordinating with Water Supply Planning on groundwater availability in the state water plan;
- supporting the Texas Department of Licensing and Regulation, water well drillers, and pump installers with well drillers' reports;
- altering groundwater management area boundaries as required by future conditions and as justified by factual data;
- conducting studies concerning priority groundwater management areas; and
- assessing the availability of groundwater for water infrastructure projects submitted to the TWDB for financial assistance.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

TWDB
Exhibit 12: Groundwater Technical Assistance
Program Statistics and Performance Measures — Fiscal Year 2020

Program Statistics or Performance Measures	FY 2020 Actual Performance
Number of responses to inquiries by Groundwater Technical Assistance staff	1,104
Number of groundwater management area meetings attended	42*
Number of groundwater management plans reviewed (final reviews and pre-reviews)	65
Number of groundwater management plans approved or not approved (final reviews)	23
Number of existing Groundwater Database records reviewed for quality assurance	39, 526
Number of cooperator water levels, water quality samples, and well inventory uploaded to the Groundwater Database	42,482
Number of water availability reviews for loan applications	87
*45 total groundwater management area meetings. Staff did not attend four meetings due to travel limitations related to COVID-19	

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

The Groundwater division data team, in charge of administering, maintaining, upgrading, and ensuring quality of the TWDB Groundwater Database and online web mapping applications, has historically been housed in Groundwater Monitoring and recently moved to Groundwater Technical Assistance. The Data Team functions are more aligned with the mission and activities of Groundwater Technical Assistance.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply.

Groundwater Technical Assistance makes all information and data available to any interested parties via the TWDB website, email, or verbal request, so there are no qualifications or eligibility requirements to use the information, data, and assistance provided.

Entities or cooperators that share groundwater data with the TWDB, such as GCDs, provide data to the data team and are asked to submit associated metadata with the groundwater data they are submitting. This data can be viewed on the Water Data Interactive website.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Groundwater Technical Assistance is part of the Groundwater division within Water Science and Conservation and works closely with other areas within the TWDB as well as GCDs. The program is organized with a manager and six staff that are geologists and data specialists.

The manager is responsible for leadership and management of the team, ensuring that work activities are conducted according to the scopes of work, performing administrative duties (such as monitoring budget, timesheets, staff meetings, performance plans, merits, hiring, discipline, and general oversight), and serving as the main contact for program information.

Team members are responsible for different tasks, including reviewing groundwater management plans, providing assistance to stakeholders involved in groundwater joint planning, evaluating loan applications for availability of groundwater, conducting or supervising research on aquifer conditions across the state, attending stakeholder meetings to provide technical assistance, managing external contracts as needed, and overseeing the various groundwater databases maintained by the Groundwater division.

Groundwater Technical Assistance is responsible for facilitating access to basic hydrogeological data and groundwater management information via presentations, conversations, accessible data and reports, providing technical support to assist GCDs in the development of their groundwater management plans and reviewing these plans for administrative completeness, facilitating development of DFCs and coordinating, tracking, and reviewing DFCs submissions by GCDs in groundwater management areas, including conducting scientific and technical analysis in the event of a petition.

The program is also responsible for maintaining a database and distributing modeled available groundwater to districts and regional water planning groups; maintaining a water resource data collection and dissemination network in coordination with federal, state, and local governments, institutions of higher learning, and other parties to support monitoring ambient water conditions; and administering, maintaining, upgrading, and ensuring quality of the TWDB Groundwater Database and online web mapping applications to disseminate water resource-related information. Additional program functions include conducting groundwater-related research; estimating exempt groundwater use to provide to GCDs; coordinating with Water Supply Planning on groundwater availability in the state water plan; supporting the Texas Department of Licensing and Regulation, water well drillers, and pump installers with well drillers' reports; conducting studies concerning priority groundwater management areas; and assessing the availability of groundwater for water infrastructure projects submitted to the TWDB for financial assistance. The TWDB Administrative Rules related to groundwater management can be found in Texas Administrative Code, Title 31, Part 10, Chapter 356. More information on the TWDB's role in reviewing groundwater management plans and desired future condition submittals can be found on the following websites:

- Groundwater management plan reviews
- Desired future condition submittals

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
Federal Funds	$	5,232
General Revenue	$	398,141
Grand Total	$	403,373

The primary fund source for Groundwater Technical Assistance is General Revenue. A USGS federal grant for National Groundwater Monitoring Network funds staff labor hours to work on maintaining water quality data connected to the network data portal.

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

No external programs provide identical services and functions. GCDs are the primary customers of Groundwater Technical Assistance services, and the TCEQ provides regulatory oversight for GCDs. Groundwater Technical Assistance provides technical and administrative assistance to GCDs for groundwater management plans and desired future condition processing, while the TCEQ is responsible for the creation of a district and enforcement actions. The TWDB and the TCEQ also work together to identify areas of the state that are experiencing or are expected to experience critical groundwater problems in the next 50 years (priority groundwater management areas) and jointly collaborate to prepare a biennial report.

The TWDB hosts the Texas Well Report Submission and Retrieval System, which populates the TWDB Submitted Drillers Report Database. The Texas Department of Licensing and Regulation requires registered water-well drillers to submit reports to the system that the TWDB hosts.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If

applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Groundwater Technical Assistance currently has the following memorandums of agreement:

- Memorandum of Agreement with the TCEQ related to GCD management planning approval, review, and oversight.
- Memorandum of Agreement with the LCRA to establish quantitative relationships between groundwater elevations and river baseflow in the South Llano River Basin to understand how the coupled system responds to recharge events and drought.

The Groundwater division also has an MOU with the Texas Board of Professional Geoscientists regarding duties of the TWDB and the Texas Board of Professional Geoscientists in the regulation of professional geoscience.

The Groundwater Technical Assistance manager and other Groundwater division staff participate in the Texas Groundwater Protection Committee meetings and subcommittee meetings, which has ensured that that all groundwater information about previous, current, and future water quality sampling projects is shared with the interested representatives of each entity. The TWDB has served as vice-chair of this organization since the committee's inception in 1989. TCEQ staff routinely use TWDB data when producing their biannual report to the EPA that includes an assessment of groundwater quality in all of the state's aquifers.

Most importantly, to ensure that no duplication or conflict occurs, members of the Texas Groundwater Protection Committee meet quarterly and work together throughout the year on a number of publications describing monitoring activities: the yearly Joint Monitoring and Contamination report, the biannual report to the legislature describing monitoring activities and recommendations for future funding, and the once-every-six-years strategy document that considers the challenges that need to be addressed in the overall monitoring of all types of groundwater situations.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

Groundwater Technical Assistance works directly with local GCDs for groundwater management plan development, review, and approval and for desired future condition review and approval.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**

- **top five contracts by dollar amount, including contractor and purpose;**
- **the methods used to ensure accountability for funding and performance; and**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

Statute requires the TWDB to assist GCDs in the development of groundwater management plans. Under Texas Water Code § 36.1072, the Executive Administrator of the TWDB must approve management plans submitted by GCDs if they are administratively complete. Specifically, statute stipulates that districts address DFCs and include modeled available groundwater in management plans. However, there is no clear guidance on which DFCs and modeled available groundwater estimates should be included and considered in the plans in circumstances where 1) an aquifer was previously relevant for joint planning purposes but is subsequently not or 2) for when a desired future condition is deemed no longer reasonable through the petition process.

See IV, Major Issues, Desired future conditions and modeled available groundwater in groundwater management plans, for further discussion on this topic.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

See the following links for Groundwater Technical Assistance program information sheets, frequently asked questions, and other information:

- www.twdb.texas.gov/publications/shells/GTA.pdf
- www.twdb.texas.gov/publications/shells/HowtoSubmitDFC.pdf
- www.twdb.texas.gov/groundwater/faq/faqgwdb.asp
- www.twdb.texas.gov/groundwater/faq/faqgma.asp
- www.twdb.texas.gov/groundwater/faq/index.asp
- www.twdb.texas.gov/groundwater/data/drillersdb.asp

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**

- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Surface Water

Surface Water collects, analyzes, and disseminates data related to hydro-meteorological and surface water conditions across the state and provides technical expertise in support of environmental flows, flood science, and regional water planning. The division is made up of five areas: Coastal Science, Hydrographic Survey, Water Availability, River Science, and TexMesonet. As Surface Water programs have grown to support flood science and planning in addition to water supply planning, the TWDB has renamed several programs (noted below) to better describe their varied contributions to the TWDB's mission.

The division employs scientists (hydrologists, biologists, meteorologists) and engineers working on a variety of activities, including: (1) data collection related to surface water resources (rivers, lakes, and estuaries), coastal and meteorological conditions, bathymetry, and sediments; (2) data dissemination via Water Data for Texas, Texmesonet.org, monthly water condition reports, and other publications, presentations, and customer requests; (3) development and application of statistical, hydrologic, hydraulic, and hydrodynamic models; (4) conducting studies and investigations and administering contracts with universities, government agencies, and private companies; (5) providing technical reviews of applications for financial assistance as well as the state and regional water plans; and (6) stakeholder support, including that of the Texas environmental flows process.

Water Science and Conservation: Coastal Science

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Coastal Science (formerly Bays and Estuaries)

Location/Division: Austin/Water Science and Conservation, Surface Water

Contact Name: Carla Guthrie, Director; Caimee Schoenbaechler, Manager

Statutory Citation for Program: Texas Water Code § 16.058; also supports and operates within Texas Water Code §§ 16.012, 16.013, 11.02362, and 5.605, as well as Texas Natural Resources Code § 33.065

B. What is the objective of this program or function? Describe the major activities performed under this program.

Originally formed as the Bays and Estuaries program in 1975, the program conducted studies and analyses to evaluate the freshwater inflow requirements necessary to maintain productive bays and estuaries. Working in coordination with the TPWD and the TCEQ, the TWDB's responsibilities related to expertise in data collection as well as hydrology and hydrodynamic modeling.

In 2007, the SB 3 environmental flows process was created by the Texas Legislature, requiring the program to provide technical and administrative resources to support the development of environmental flow recommendations for seven basin-bay areas of the state. As the SB 3 environmental flows process has matured, Coastal Science has begun to focus on new areas of work in support of both water supply *and* flood science and planning. Rebranded as the Coastal Science program in 2019, this program now conducts the following activities:

- Data collection and study of freshwater flow needs for Texas estuaries
- Development of hydrologic rainfall-runoff models of coastal watersheds
- Development of hydrodynamic (circulation) and salinity transport models for use in water planning, flood protection, and oil spill response
- Oversight of the Texas Integrated Flooding Framework partnership and contract
- Technical and administrative support for SB 3 Basin and Bay Area Stakeholder Committees
- Technical support for water supply planning
- Technical support for flood science
- Website and information technology development
- Participation in the Galveston Bay Council, the Coastal Bend Bays and Estuaries Program, the Coastal Coordination Advisory Council, and various other stakeholder groups

This program provides the following services or products to support environmental, water supply, and flood planning as well as emergency oil spill response:

- Hydrologic, hydrodynamic, and salinity transport modeling of estuaries
- Freshwater inflow estimates for all estuaries
- Tide forecasts/hindcasts for oil spill response
- Near-real time bay circulation forecasts for oil spill response
- Continuous estuarine water quality data collection
- Estuarine hydrographic surveys of flow and water quality
- Discharge, sediment, and nutrient data collection in river reaches flowing to an estuary

- Bathymetric data collection in estuaries
- Technical reports completed by contractors

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

In FY 2020, Coastal Science hired two new staff and developed coastal flood science initiatives to improve circulation, storm surge, and rainfall-runoff modeling and to expand data collection to support model calibration and validation, including a new partnership with the TNRIS Strategic Mapping program to acquire coastal bathymetry data. The program made significant progress toward developing a three-dimensional, coastwide hydrodynamic model; provided operational modeling support for emergency oil spill response; participated in numerous stakeholder-driven coastal planning efforts; and administered contracts for freshwater inflow and estuarine water quality monitoring, improvement of the TWDB's coastal watershed boundary delineations, and SB 3 environmental flow adaptive management projects. Coastal Science activities contribute to agency performance measures for Strategy A1.1.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

The original Bays and Estuaries program began with a specific focus to maintain continuous data collection and evaluation and to conduct studies of the freshwater inflow needs which provide for a sound ecological environment in Texas estuaries. Over time, with new responsibilities assigned to the TWDB regarding environmental flows, flood science, and flood planning, the activities and services provided by Coastal Science have continued to grow. Since study reports providing freshwater inflow recommendations for the major estuarine systems of the state were completed in 2006, Coastal Science has been on a trajectory to focus less on large study reports and more on the individual components—the datasets, models, and analyses—that can be informative for a multitude of agency functions, whether for environmental flows, water supply planning, or flood science and planning functions.

When the 86th Legislature enacted SB 8 and SB 500 in 2019, which provided the TWDB with funds to collect flood-related data, advance modeling capabilities, and distribute critical flood information, the Coastal Science program expanded its range of functions and responsibilities in response to the agency's evolving needs. The program now applies coastal datasets, models, and analyses to support flood science and planning in addition to water supply planning. The program has grown to nine staff, including a manager, seven hydrologists, and a grant-funded position to support the Texas Integrated Flooding Framework.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply.

A variety of stakeholders from local, state, and federal governments, academia, non-profit organizations, river authorities, and industry rely on the program's coastal monitoring data and modeling tools for a variety of applications related to freshwater inflow management, water resources planning, coastal restoration and resiliency planning, oil spill prevention and response, and environmental impact assessments.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Coastal Science is part of the Surface Water division within Water Science and Conservation. The program is organized with a manager, seven hydrologists, and one grant coordinator. Staff are headquartered in Austin and regularly conduct business at the Hydro Lab in North Austin.

The manager is responsible for providing leadership and management of the team and technical oversight of all activities; assigning and prioritizing projects; coordinating activities with external collaborators and stakeholders; all program administrative duties, including budget, timesheets, staff meetings, performance plans, merits, hiring, discipline, and general oversight.

Hydrologists on the team specialize in tasks ranging from field data collection and data analysis to hydrologic or hydrodynamic modeling to programming the coastal database features of waterdatafortexas.org. Staff also serve as contract managers and interact with stakeholders and collaborators. The grant coordinator supports all aspects of the Texas Integrated Flooding Framework project related to developing, managing, monitoring, and reporting for grant contracts as well as serving as a liaison with stakeholders. Staff meet weekly to discuss program activities. Staff also work collaboratively with other teams in the division and with other business areas, including Groundwater, Flood Science and Community Assistance, Flood Planning, Water Supply Planning, Finance, Information Technology, TNRIS, and the Office of General Counsel as necessary.

Coastal Science maintains ongoing data collection in the estuaries to support the development and simulation of bay circulation (hydrodynamic) and salinity transport models. Data, such as salinity and water temperature, are collected hourly. Streamflow from USGS stream gages and precipitation data is used to develop estimates of freshwater inflows to estuaries. Models are developed to support studies of freshwater inflow needs, oil spill response and soon, storm surge and flood modeling. Data and models are available and updated on an ongoing basis.

The program also has provided technical and financial support to the Texas SB 3 (2007) environmental flows stakeholder process since 2008. Since 2014, it has funded project proposals each biennium to support adaptive management of environmental flows. In a new role, the program is serving as the lead agency on the Texas Integrated Flooding Framework, a

three-year, coastwide project to plan for modeling, visualizing, and assessing the risks of compound flooding (such as flooding from storm surge and river flow) funded by the GLO.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget stgy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
Flood	$	27,353
General Revenue	$	478,833
Interagency Contracts	$	37,682
Grand Total	$	543,868

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

Coastal Science provides long-term, continuous water quality monitoring, freshwater inflow estimates, and hydrodynamic and salinity modeling for a coastwide extent including all major and minor estuaries from Sabine Lake on the Louisiana border to the Rio Grande. The data products and modeling services provided by the program can be used for a variety of applications supporting coastal management and planning.

While other state agencies also support coastwide data collection, such as TPWD (Coastal Fisheries Program) and TCEQ (Surface Water Quality Monitoring Program), their efforts focus on instantaneous water quality point measurements at different locations. Federal agencies, such as the U.S. Army Corps of Engineers - Galveston District and the USGS, also support the monitoring and modeling of coastal (hydrologic and hydrodynamic) processes as well as flood outreach and flood planning initiatives for the state. Typically, the U.S. Army Corps of Engineers collects data and develops models for specific projects or geographic areas. Engineering firms also provide hydrologic and hydrodynamic modeling of estuaries but typically focus on developing and running models for specific locations and projects.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If

applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Since 2009, the TWDB and USGS have partnered, through a Joint Funding Agreement for Water Resource Investigations, to conduct freshwater inflow monitoring (discharge, nutrients, and sediments) at key sites on lower river reaches that flow to major estuaries. Recently, the agreement expanded to include water quality monitoring within major estuaries of the upper coast.

Additionally, the TWDB recently executed an interagency agreement with the GLO for the Texas Integrated Flooding Framework to develop the guidelines and processes for implementing a comprehensive framework to model, visualize, and plan for the risk of compound flooding in counties affected by Hurricane Harvey. The TWDB is leading this effort in coordination with the USGS through a Joint Funding Agreement for Water Resource Investigations, and with the U.S. Army Corps of Engineers Galveston District, through a Floodplain Management Services Letter Agreement. By leveraging the strengths of each partner agency (TWDB, GLO, USGS, and the U.S. Army Corps of Engineers), we aim to develop long-term relationships that improve coordination and minimize duplication of effort or competition for limited funding resources.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

Coastal Science regularly coordinates with local, state, and federal agencies, academic institutions, estuary programs, non-profit organizations, and river authorities for data collection, modeling, or analyses regarding coastal hydrology and freshwater inflows, estuarine circulation and water quality, and flood modeling. This coordination includes:

- **Federal**
    - U.S. Army Corps of Engineers for receipt or payment of funds for environmental, flooding, or water planning studies
    - USGS for cooperative, cost-sharing for data collection and studies
- **State**
    - TPWD for data collection and studies and jointly providing technical and administrative support for the SB 3 environmental flows process
    - GLO for technical assistance to the Oil Spill Program, planning assistance to the Coastal Management Program, and funding of the Texas Integrated Flooding Framework
    - TCEQ for jointly providing technical and administrative support for the SB 3 environmental flows process
- **Other**

- River authorities for data collection and technical support upon request; payment of funds for data collection and studies
- Port authorities for data collection and technical support upon request
- Academic institutions for payment of funds for data collection and studies

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

Contracts enable the program to support environmental flows, water planning, and flood science activities of the TWDB. Contracts focus on collecting water resources data, including through statewide monitoring networks such as estuarine water quality for water planning and flood science; understanding environmental flow needs of rivers and estuaries, including support of Senate Bill 3 Environmental Flow Basin and Bay Area Stakeholder adaptive management studies; developing advanced modeling and data collection techniques; and various studies to support program objectives.

- **the amount of those expenditures in fiscal year 2020;**

$62,632

- **the number of contracts accounting for those expenditures;**

3

- **the method used to procure contracts;**

Contracts may be procured by several methods including: Unsolicited No-Cost Agreements; Unsolicited Cost-Share Grants (federal government, such as the U.S. Geological Survey); Unsolicited Interagency contracts (exempt, Texas Government Code 771); Unsolicited Interlocal contracts (exempt, Texas Government Code 791); and Request for Qualifications, among other methods as appropriate.

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
Texas Parks and Wildlife Department	$25,468.40
Texas A&M - Corpus Christi	$20,979.58
Texas A&M AgriLife Research	$16,183.90

- TPWD: This contract provides water quality data, primarily water temperature and salinity, at strategic locations within Texas estuaries to support environmental flows and water planning.
- Texas A&M University-Corpus Christi, Harte Research Institute: This contract provides analysis of long-term benthic data for environmental flows adaptive management in three estuaries: Colorado-Lavaca, Guadalupe-San Antonio, and Nueces.
- Texas A&M AgriLife Research Center: The purpose of this contract is to collect and synthesize data in the Big Boggy wetlands surrounding East Matagorda Bay to inform the environmental flows adaptive management process.
- **the methods used to ensure accountability for funding and performance;**

Quarterly progress reports and invoices are reviewed and approved by each contract manager throughout the life of the contract. Draft reports are reviewed by staff or stakeholders and comments are provided when applicable. When relevant to the contract, stakeholder meetings may be held to provide both overviews of the work and the results obtained.

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

Considering the technical nature of the work of Coastal Science, retaining qualified technical staff in highly specialized positions is a major challenge. Additionally, using new state-of-the-art models and visualization tools requires accessing high-performance computational resources, which are not currently available internally.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

Traditional programmatic activities focused on providing freshwater inflow need studies and recommendations. These historical reports can be found on the Freshwater Inflow Needs of Texas Estuaries website.

Coastal Science continues to provide key elements of the original study program, including long-term data collection and hydrologic, hydrodynamic, and salinity modeling. However, the program has steadily worked to improve and modernize key data products and models to support to a wider array of coastal management objectives, including coastal flood risk assessment and mitigation planning. The Coastal Science publishes data on the Water Data for Texas website.

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Hydrographic Survey

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Hydrographic Survey

Location/Division: Austin/Surface Water

Contact Name: Carla Guthrie, Director; Nathan Leber, Manager

Statutory Citation for Program: *Program was created in 1991; Texas Water Code Chapter 15, Subchapter M*

Program also supports and operates within Texas Administrative Code, Title 31, Part 10, Chapter 377 and Texas Water Code §§ 16.012, 16.013, and 16.019

B. What is the objective of this program or function? Describe the major activities performed under this program.

In 1991, the Texas Legislature authorized the TWDB to develop a non-profit, self-supporting reservoir volumetric survey program. The program expanded services in 2003 to include measuring the volume of sediment in reservoirs. At present, the Hydrographic Survey program provides accurate and affordable estimates of current reservoir storage capacity and the loss in capacity over time due to sedimentation. As of July 2021, the program has performed 196 reservoir surveys.

The program is largely self-supporting, generating revenue through charges to customers for conducting surveys and data analysis. To remain an equitable cost-recovery program, the TWDB's Board reviews the program's rate schedule every two years. To support reservoir owners and to provide high-value products, the program is also working to improve efficiencies in data collection and processing and to develop the ability to create detailed underwater images showing sediment impedance to critical infrastructure such as water intake structures.

Another new service, currently in development, will provide estimates of the volumetric capacity available for capturing flood waters in reservoirs that have a flood pool function—a volume typically not known. Using funding provided by the 86th Legislature, the Hydrographic Survey program has developed a novel method combining traditional below-water survey data with methods (Lidar data) to measure the elevation of the land surface above the water line. Once complete, the TWDB will be able to provide lake owners and the National Weather Service with estimates of the flood pool storage in reservoirs for use in emergency planning and response.

This program provides the following services or products:

- Estimates of current reservoir storage capacity
- Estimates of sediment volume and loss in storage capacity due to sedimentation
- Estimates of rates of historical sedimentation deposition
- Contour maps and models of reservoir bathymetry as GIS shapefiles
- Elevation-Area-Capacity tables, which provide estimates of reservoir surface area and capacity for a given water level
- Survey reports and products can be found on the Hydrographic Survey Program website.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

Though field efforts during FY 2020 were limited due to the pandemic, the Hydrographic Survey program completed reservoir survey reports for lakes Buchanan, Eagle Mountain, Livingston, and Richland-Chambers. The program also made progress on surveys for lakes Conroe, Bridgeport, Texana, and Travis.

Receivable contract receipts funded all activities associated with Hydrographic Survey contracts.

TWDB
Exhibit 12: Hydrographic Survey
Program Statistics and Performance Measures — Fiscal Year 2020

Program Statistics or Performance Measures	Dataset Reference Number* (if applicable)	Calculation (if applicable)	FY 2020 Target	FY 2020 Actual Performance	FY 2020 % of Annual Target
Number of surface acres surveyed			30,000	40,838	136%

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

N/A

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply.

The Hydrographic Survey program aids reservoir owners, municipalities, river authorities, regional water planning groups, and state agencies in effectively managing surface water reservoirs and water supply. Updated information on storage capacity and surface area for surveyed reservoirs is used by reservoir owners and operators, the TCEQ, water planning consultants, and by TWDB Water Availability staff for water planning analysis. The information provided by the program is used to inform long-range water supply planning and may soon be used to provide for better flood protection and flood planning.

The Hydrographic Survey program has been looked upon as a model by India and several African countries, and in the past Oklahoma maintained its own state program modeled after the TWDB's program.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

The Hydrographic Survey program is part of the Surface Water division within Water Science and Conservation. The program is unique in that it is largely self-funded through the revenues generated by charges to customers for conducting lake surveys. The program is organized with a manager, who also oversees the TexMesonet program, and four hydrologists dedicated to

working on the Hydrographic Survey team. Staff are headquartered in Austin, regularly conduct business at the Hydro Lab in North Austin, and travel extensively throughout the state.

The manager, in addition to the responsibilities associated with managing the TexMesonet program, is responsible for leadership and management of the team; technical oversight of all activities and oversight of the Hydro Lab facility; recruiting, contracting, and scheduling customer surveys to maintain the financial stability of the program; assigning and prioritizing projects; administrative duties, including budget, timesheets, staff meetings, performance plans, merits, hiring, discipline, and general oversight.

Hydrologists on the team specialize in tasks ranging from managing operations at the Hydro Lab facility to maintaining equipment, transporting boats, and conducting lake surveys to data analysis and report preparation of lake survey results. Additionally, all staff are responsible for providing technical assistance for contracted surveys and other tasks assigned. Staff meet weekly to discuss program activities and work collaboratively with other teams in the division and frequently with other business areas, including Groundwater, Finance, and the Office of General Counsel as necessary.

The Hydrographic Survey program collects data to determine the volumetric capacity, sediment depositional patters, and sedimentation rates or loss in capacity of water supply reservoirs as requested by customers. The program works on five to seven lake surveys a year, producing data, maps and reports for customers that also are made available to the public on the agency website. In an important role, the program developed a method for utilizing measurements of reservoir land surface elevation above water combined with the below-water survey data to provide estimates of the capacity of reservoir flood pools. This new service was funded, along with the agency's directives related to flood protection, by the 86th Legislature.

The TWDB Administrative Rules related to the Hydrographic Survey program can be found in Texas Administrative Code Title 31, Chapter 377. The program charges customers based on a Board-approved rate schedule that is reviewed and approved every two years. The current schedule was approved in November 2020. Most customer surveys are for governmental entities and are contracted under interagency contracts.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
Appropriated Receipts	$	218,391
General Revenue	$	152,579
Grand Total	$	370,970

The Hydrographic Survey program relies on receivable contract funds and general revenue to support staff and operations. Receivable contract funds fluctuate by year depending on interest from clients and types of surveys performed. Receivable funds may also be impacted during drought years when reservoir levels are low, and lake owners request holding off on conducting surveys.

Survey rates are reviewed and approved by the TWDB's Board every two years to ensure program solvency.

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

The Hydrographic Survey program is unique among Texas agencies in the services it provides to the state; no other local, state, or federal entity currently provides such services. Private consulting firms also provide similar services within Texas, although the hydrographic surveys conducted by the TWDB are offered at a substantially reduced rate compared to the rates of private firms offering similar services.

In the TWDB's experience, hydrographic surveys of the state's reservoirs are foregone by reservoir owners without the cost saving that the TWDB provides. The information gained through the surveys performed by the state is essential to monitoring surface water availability and modeling future water supplies to support state water planning, as well as to the operation and maintenance of these reservoirs.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

N/A

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

The Hydrographic Survey program regularly coordinates with river authorities, water suppliers, the U.S. Army Corps of Engineers, and other lake owners to collect data and information regarding the bathymetry, volumetric capacity, and sedimentation of water supply reservoirs.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall; provide a narrative summary**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**
- **top five contracts by dollar amount, including contractor and purpose;**
- **the methods used to ensure accountability for funding and performance; provide a short narrative**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

The state receives valuable information that is essential to understanding the existing and long-term availability of surface water resources and for long-range water planning through the activities of the Hydrographic Survey program. Presently, it is reliant on lake owners to fund the work. There is incentive to ensure the viability of the program and continued partnerships with lake owners through diversification of the program's funding streams.

At present, the Hydrographic Survey program is only able to obtain vital data on water supply reservoirs for use by agency programs as well as water planners when lake owners are able to sponsor the surveys.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

Additional information on the Hydrographic Survey program can be found on the program website.

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: River Science

A. Provide the following information at the beginning of each program description.

Name of Program or Function: River Science (formerly Instream Flows)

Location/Division: Austin/Surface Water

Contact Name: Carla Guthrie, Director; Mark Wentzel, Manager

Statutory Citation for Program: Program was created in 2001 under Texas Water Code § 16.059.

Program also supports and operates within Texas Water Code §§ 16.012, 16.013, 16.014, 16.019, and 11.02362

B. What is the objective of this program or function? Describe the major activities performed under this program.

Originally formed as the Instream Flows program in 2001 to support the Texas Instream Flows Program (created by SB 2 in 2001), River Science conducts studies and analyses to determine the flow conditions necessary to support a sound ecological environment in the state's rivers and streams. Working in coordination with the TPWD and the TCEQ, the TWDB's responsibilities are related to expertise in hydrology and hydraulic modeling, sediment transport, and geomorphology.

In 2007, the SB 3 environmental flows process was created by the Texas Legislature, requiring the program to provide technical and administrative resources to support the development of environmental flow recommendations for seven basin-bay areas of the state. As the Texas Instream Flows Program and the SB 3 environmental flows process have matured, Coastal Science has begun to focus on new areas of work in support of both water supply and flood science and planning. Rebranded as the River Science program in 2019, this program now conducts the following activities:

- Data collection and study of instream flow needs for Texas rivers and streams
- Data collection and study of sediment transport
- Data collection and study of surface water-groundwater interactions
- Development of hydraulic river models
- Oversight of the USGS stream gaging contract for water planning and flood protection
- Oversight of contracts for the calibration of National Weather Service river flood forecast models
- Technical and administrative support for SB 3 Basin and Bay Area Stakeholder Committees
- Technical support for water supply planning

This program provides the following services or products to support environmental, water supply, and flood planning:

- Hydrologic and hydraulic river modeling
- Bathymetric data collection in rivers and streams
- Sediment data collection in rivers and streams
- Geomorphic analysis of river basin- and subbasin-wide changes that may impact environmental flows, flooding, or infrastructure such as bridges and pipelines
- Gain-loss studies of stream segments to support studies of surface water-groundwater interactions
- Texas Instream Flow Program technical reports, coauthored with the TPWD, TCEQ, and local river authorities
- Technical reports completed by contractors
- Weekly publication of the *Water Weekly*—a drought and water conditions media communication
- Monthly publication of the *Water Conditions Report for Board Members*—a drought and water conditions communication for Board members and executive staff

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

Three of four River Science staff members were temporarily assigned in FY 20 to the Flood Science and Community Assistance division to develop river models in support of the TWDB's

new Flood Modeling and Flood Mapping efforts and to provide assistance to Grant Coordination. Nonetheless, River Science activities supported the Texas Instream Flow Program and regional water planning; provided contract oversight for SB 3 environmental flow adaptive management projects, USGS stream gaging and calibration of National Weather Service river flood forecast models; and regular publication of the *Water Weekly* and *Water Conditions Report for Board Members*.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

River Science began with a specific focus to maintain continuous data collection and evaluation and to conduct studies of the instream flow conditions that provide for a sound ecological environment in Texas rivers and streams. Over time, new responsibilities have been assigned to the TWDB regarding environmental flows, flood science, and flood planning plus an increasing stakeholder interest in studying surface-water groundwater interactions.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply.

The staff services and products provided by River Science aid state agencies and water resource planners and managers across the state in effectively monitoring and managing surface water resources and associated aquatic habitats. Additionally, the information provided by ongoing stream gaging and lake level monitoring also informs local, state, and federal agencies responsible for flood protection and planning.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

River Science is part of the Surface Water division within Water Science and Conservation, organized with a manager, one hydrologist, and two engineers. Staff are headquartered in Austin and regularly conduct business at the Hydro Lab in North Austin.

The manager is responsible for providing leadership and management of the team and technical oversight of all activities; assigning and prioritizing projects; coordinating activities with external collaborators and stakeholders; all program administrative duties, including budget, timesheets, staff meetings, performance plans, merits, hiring, discipline, and general oversight.

The hydrologist on the team specializes in field data collection, data analysis, and GIS applications. The engineers on the team specialize in hydrologic analysis and hydraulic and

sediment modeling and geomorphic analysis. Staff meet weekly to discuss activities. Staff also serve as contract managers; interact with stakeholders and partners; and work collaboratively with other teams in the division and with other business areas including Groundwater, Flood Science and Community Assistance, Water Supply Planning, Finance, and Information Technology as necessary.

River Science is responsible for overseeing the Joint Funding Agreement for stream gaging with the USGS and conducts data collection within rivers and streams to support the development and simulation of river flow (hydraulic) models. Data, such as water level, flow, and channel bathymetry are collected as needed to support model development. Models are developed to support studies of instream flow needs for healthy rivers and have been developed to support flood modeling in rivers. Data and models are available and updated on an ongoing basis.

River Science has also provided ongoing technical, administrative, and financial support to the SB 2 (2001) instream flow process as well as to the SB 3 (2007) environmental flows stakeholder process, specifically funding project proposals to support the adaptive management of environmental flows. In an important role, the program aided the start-up of flood mapping for the agency following new directives from the 86th Legislature.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
Federal Funds	$	774
Flood	$	193,500
General Revenue	$	1,464,428
Grand Total	$	1,658,702

River Science is funded primarily by general revenue and the TIRF Floodplain Management Account.

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

The modeling and data services provided by River Science which focus on river hydraulics and sediment transport are unique to Texas state agencies. Hydraulic and geomorphic data collection and analysis provided by the program is similar to analyses provided by engineering consulting companies or even the Texas Department of Transportation. However, the TWDB focuses work at a larger, basin-wide scale so as to identify changes and environmental impacts, including the impacts of dams, diversions, and land-use changes, throughout a basin. Engineering consulting firms and the Texas Department of Transportation typically focus on hydraulic performance or geomorphic impacts at specific locations, such as local scour effects near individual bridge structures.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Texas Instream Flow Program

The TWDB is the lead agency for hydrologic and hydraulic evaluation; the TPWD is the lead for biological evaluation; and the TCEQ is the lead for water quality evaluation. The three agencies signed an MOU in October 2002 relating to the conduct of instream flow studies and all have agreed to work collaboratively on all study elements. The TWDB has coordinated with both the TCEQ and the TPWD when funding studies for the advancement of Texas Instream Flow Program goals, to include accepting input on the selection of contractors, project scopes of work and budgets, and comments on draft final reports. In four priority river sub-basins, the TWDB has participated with TPWD, TCEQ, river authorities, and other local stakeholders to develop study objectives and in carrying out data collection.

Stream Gaging and Lake Level Monitoring

The TWDB coordinates closely with the USGS, the National Weather Service, and a variety of stakeholders on the selection of sites for new gages, particularly for flood gages.

Sediment Data

The TWDB coordinates closely with the USGS, the U.S. Army Corps of Engineers, and a variety of stakeholders to ensure sediment data collection programs complement one another to provide information in areas of the state experiencing geomorphic change.

Surface Water and Groundwater Interactions

The TWDB coordinates with the USGS, river authorities, groundwater districts, and a variety of stakeholders to ensure TWDB activities focus on areas concern and are not duplicative of on-going efforts of other entities.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

River Science regularly coordinates with the TPWD, river authorities, the USGS, and the U.S. Army Corps of Engineers to collect data and information regarding river flows, sediment

transport, channel morphology, and aquatic habitats. River Science is developing a relationship with the Texas Department of Transportation to share data and analysis related to sediment transport and channel morphology.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall; provide a narrative summary**

Contracts enable the program to support environmental flows, water planning, and flood science activities. Contracts focus on collecting water resources data, including through statewide monitoring networks such as stream gaging for water planning and flood protection; understanding environmental flow needs of rivers and estuaries, including support of SB 3 Environmental Flow Basin and Bay Area Stakeholder adaptive management studies; developing advanced modeling and data collection techniques; and various studies to support program objectives.

- **the amount of those expenditures in fiscal year 2020;**

$1,809,359

- **the number of contracts accounting for those expenditures;**

2

- **the method used to procure contracts;**

Contracts may be procured by several methods, including: Unsolicited No-Cost Agreements; Unsolicited Cost-Share Grants (federal government, such as the U.S. Geological Survey); Unsolicited Interagency contracts (exempt, Texas Government Code 771); Unsolicited Interlocal contracts (exempt, Texas Government Code 791); and Request for Qualifications, among other methods as appropriate.

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
USGS	$1,740,984.00
U.S. Dept of Interior-USGS	$68,375.00

Joint Funding Agreement for Water Resources Investigation (USGS 1): Participation in this program provides stream, lake, and precipitation data to support environmental flows, water planning, and flood science activities of the TWDB.

Sediment sampling at environmental flow measurement points (USGS 2): This contract provides data to increase understanding of environmental flow needs of rivers and estuaries.

- **the methods used to ensure accountability for funding and performance; provide a short narrative**

Progress reports and invoices are reviewed and approved by each contract manager throughout the life of the contract. Draft reports are reviewed by staff or stakeholders and comments are provided when applicable. When relevant to the contract, stakeholder meetings may be held to provide both overviews of the work and the results obtained.

- **a short description of any current contracting problems.**

In fiscal year 2020, contracts were impacted by the global Covid-19 pandemic which hindered completion of field work. Impacts included delays in the initiation of field work for one contract (Backwater habitats - TPWD). Impacts of global Covid-19 pandemic continued and were more pronounced in fiscal year 2021, resulting in delays in the installation of two stream flow gages (Joint Funding Agreement – USGS 1).

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

River Science is making steady progress towards providing a broader range of data services and products, beyond those activities that traditionally focused narrowly on evaluating environmental flow needs. The program is developing new collaborative partnerships to expand understanding of sediment transport and geomorphic change as it relates to water supply planning and flood planning, and the program has begun to provide assistance to efforts to better understand surface water-groundwater interactions in Texas river basins. The program has adequate funding and no statutory limitations.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

Traditional programmatic activities focused on providing instream flow study reports; examples include:

- Lower San Antonio River and Cibolo Creek
- Middle and Lower Brazos River

Newer products include geomorphic analyses, such as those included in the appendices of reports submitted by the SB 3 Basin and Bay Area Stakeholder Committees for the Trinity-San Jacinto, San Antonio-Guadalupe, and Nueces basins. Additionally, a recent partnership with the TPWD for the Frio River includes geomorphic analysis; see the study report, *Frio River Biology and Fluvial Geomorphology Study to Determine Impacts of Sand and Gravel Activity*, for more information.

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: TexMesonet

A. Provide the following information at the beginning of each program description.

Name of Program or Function: TexMesonet

Location/Division: Austin/Water Science and Conservation, Surface Water

Contact Name: Carla Guthrie, Director; Nathan Leber, Manager

Statutory Citation for Program: Texas Water Code §§ 16.012 and 16.019

B. What is the objective of this program or function? Describe the major activities performed under this program.

Formed in 2016 following devastating flooding events and with funding from the Governor's Disaster Contingency Fund No. 453, the TexMesonet program began installing weather stations to augment existing networks and created an online website and map viewer for data access. The goal of TexMesonet is to aggregate the state's existing weather station networks into a central repository and build a network of automated weather stations across the state to fill gaps in existing network coverage. This resulting network-of-networks is able to provide coverage with dense-enough spacing to observe and monitor meso-scale weather events, such as individual thunderstorm supercells, in near real-time.

TexMesonet provides accurate, timely data on severe weather events, including floods, fire, and drought, with benefits to public safety, agricultural productivity, and research efforts.

TWDB-owned TexMesonet stations complement existing monitoring systems maintained by the National Weather Service, the Federal Aviation Authority, and the U.S. Forest Service, and other state and local organizations. Data from over 3,000 existing stations owned by other operators in Texas and bordering regions are displayed on www.TexMesonet.org.

The primary program activities include the following:

- Site identification and access agreement acquisition
- Site construction, maintenance, and instrumentation for 79 TWDB-owned stations (as of June 2021)
- Developing an installation and maintenance guidance document
- Collecting and disseminating data for air temperature, precipitation, humidity, pressure, wind, solar radiation, and soil moisture
- Developing website and information technology to enhance user experience, add download capabilities, track system metadata, and improve internal process management
- Providing outreach to the meteorological community and other network operators to build strong communication and data management procedures so that statewide measurements can be integrated in a network of networks
- Providing outreach to the public
- Providing the following data and services:
    - Online access to near-real time weather station and weather data
    - Online access to historical weather station data and data products
    - Aggregate weather station data from over 3,000 weather stations spanning 19 networks
    - Technical support for and enhanced collaboration among the Texas meteorological community
    - Videos of basic weather concepts via the TWDB's YouTube channel

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

Since TexMesonet's establishment in 2016, the program has focused on identifying willing landowners and executing site access agreements, installing scientific-grade weather stations across the state, establishing partnerships with existing network operators, and building a state-of-the-art data viewer in www.TexMesonet.org. Presently, the TexMesonet has 106 agreements with landowners on file for existing and future station locations. Though the pandemic slowed installation progress in FY 2020, TexMesonet staff have installed and continue to maintain and operate 79 weather stations spanning from Hidalgo County in the south to El Paso County in the west to Panola County on the Texas-Louisiana border. With development and investment in the TexMesonet and its website, stakeholders across the state now have access—in one location—to data from more than 3,000 weather stations.

TWDB
Exhibit 12: TexMesonet
Program Statistics and Performance Measures — Fiscal Year 2019 to 2020

Program Statistics	TexMesonet Site Sessions FY 2019	TexMesonet Site Sessions FY 2020)	Session Increase FY 2020
TexMesonet.org page sessions (metrics through Google Analytics)	59,000	88,000	49.2%

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

As noted under Section B, TexMesonet was created following devastating flooding events in 2015. The TWDB entered into an MOU with the Governor's Office, which allocated $6.8 million to the TWDB "…*for purposes of preparing for a disaster, including installing a network of stream gages to enhance existing flood notification systems and making funds available to state and local entities for floodplain management*…" The TWDB's initial activities were focused on five areas: (1) creating TexasFlood.org and an associated Flood Viewer; (2) funding the installation and operation of flood-hardened stream gages; (3) providing grants and outreach to communities for early warning systems and flood mitigation planning; (4) funding for model calibration of National Weather Service flood forecast models; and (5) installing and operating TexMesonet stations and TexMesonet.org. Following the initial MOU funding in 2016, the Texas Legislature has continued to provide funding to expand and support the TexMesonet program via the Floodplain Management Account.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

TexMesonet is part of the Surface Water division within Water Science and Conservation. The program is organized with a manager, who also oversees Hydrographic Survey, and five

hydrologists dedicated to working on the TexMesonet. Staff are headquartered in Austin, regularly conduct business at the Hydro Lab in North Austin, and travel extensively throughout the state.

The manager, in addition to the responsibilities associated with managing Hydrographic Survey, is responsible for leadership and management of the TexMesonet team; technical oversight of all activities and oversight of the Hydro Lab facility; recruiting cooperators to expand the network; coordinating with IT on www.texmesonet.org; and administrative duties, including budget, timesheets, staff meetings, performance plans, merits, hiring, discipline, and general oversight.

Hydrologists on the team specialize in tasks ranging from constructing, installing, and maintaining stations to equipment inventory to ensuring data transmission and quality assurance to coordinating a statewide advisory committee. Additionally, all staff are responsible for providing technical assistance to customers and cooperators and communicating with the National Weather Service. Staff meet weekly to discuss activities and work collaboratively with other teams in the division and frequently with other business areas including Groundwater, Flood Science and Community Assistance, Finance, Information Technology, and the Office of General Counsel as necessary.

Created in 2016, the TexMesonet continuously collects data on meso-scale climatic conditions to provide information on severe weather events and to support or long-term planning. Data are available on www.texmesonet.org and updated on an ongoing basis. The program continually identifies existing cooperators within the state who are willing to share their data through www.texmesonet.org as well as identifies new locations and secures site access agreements at which to install agency-funded mesonet stations across the state. These activities serve to meet the goal of aggregating existing weather station networks into a central repository and filling in the gaps with automated stations.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
Flood	$	446,726
Grand Total	$	446,726

The TexMesonet is funded via the TIRF Floodplain Management Account.

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

TexMesonet aggregates existing weather station networks from numerous sources into a central repository and maintains additional automated weather stations to fill in gaps in existing network coverage. Partnerships with other entities allow for maximum coverage across the state for both data collection and dissemination through the TexMesonet website. Current partners whose station data appear on our website include the City of Austin, the Climate Reference Network, the Edwards Aquifer Authority, the Guadalupe-Blanco River Authority, the City of Grand Prairie, the Hydrometeorological Automated Data System, the Harris County Flood Control District, the Lower Colorado River Authority, the Moored Buoys and Coastal-Marine Automated Network, Mexico's Servicio Meteorologico Nacional, the National Ocean Service Water Level Observation Network, the National Ocean Service Physical Oceanographic Real-Time System, the National Weather Service, the Federal Aviation Administration, the Interagency Remote Automatic Weather Stations Network, Jefferson County Drainage District #6, San Jacinto River Authority, and the Texas Soil Observation Network. While many of these networks make their station data available online, none aggregate statewide information from multiple networks into a single platform as the TexMesonet does.

Several smaller networks exist in Texas whose data are not ingested into the TexMesonet website for data quality reasons, such as lack of consistency in data delivery or differences in data collection standards.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

The overarching goal of TexMesonet is to become the statewide earth observation data collection network for Texas. As such, TexMesonet is being constructed to complement existing monitoring systems maintained by the National Weather Service, the Federal Aviation Authority, the U.S. Forest Service, and other state and local organizations. TexMesonet staff communicate regularly with representatives from other networks regarding data sharing via the TexMesonet platform. The goal of the resulting network-of-networks is to provide coverage at a dense enough spacing to observe and monitor mesoscale weather events in near real time and provide support for both drought and flood monitoring, groundwater management, agricultural productivity, and related research and emergency response efforts.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

TexMesonet relies on partnering with the weather station networks of local, regional, and federal entities to cover the state. These entities utilize their partnership with TexMesonet in a variety of ways. Federal agencies such as the National Weather Service utilize radar and

satellite technology, as well as on the ground stations, to develop forecasts and alerts for severe weather events. TexMesonet adds value to their efforts by providing near real-time data from additional stations that can be used to verify and improve the accuracy of those model-derived estimates. Further, the National Weather Service relies on the TexMesonet data as integral to their warning decision-making process as they use the data to forecast river heights and rainfall as well as anticipate flash flooding.

In addition to federal partners, regional and local partners contribute to and benefit from their partnerships with TexMesonet. Many GCDs, river authorities, flood districts, and cities have partnered with TexMesonet on station installations, station location access, site maintenance, and data sharing. Partner entities receive near real-time access to their station data and access to the data of surrounding stations, in addition to historical data, radar, forecasts, alerts, and streamflow data.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall; provide a narrative summary**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**
- **top five contracts by dollar amount, including contractor and purpose;**
- **the methods used to ensure accountability for funding and performance; provide a short narrative**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

TexMesonet has received adequate funding and exceptional support from a broad range of stakeholders and the public. The network addresses a significantly important data gap that provides information not only for water resources planning but also for public safety and economic purposes. TexMesonet has made excellent progress partnering with existing networks—allowing the network to display data from over 3,000 stations.

Additionally, some TWDB data collection functions, such as TexMesonet, are not explicitly named in statute but are important for understanding water resources in the state. These functions operate within the umbrella authority of Texas Water Code §16.012 for "*studies,*

investigations, and surveys." However, TexMesonet, initiated after the devastating Blanco River flood in 2015, provides data that, among other uses, assists with forecasting flood events that can threaten the life and property of Texans, a uniquely valuable purpose that could be identified, as well as more clearly defined in purpose, in the agency's statutory authority. See further discussion on this topic in Section IX, Major Issues.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

Additional information can be found on the TexMesonet website.

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

Water Science and Conservation: Water Availability

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Water Availability (formerly Water Availability Modeling)

Location/Division: Austin/Surface Water

Contact Name: Carla Guthrie, Director; Nelun Fernando, Manager

Statutory Citation for Program: Texas Water Code § 16.051

The program also supports and operates within Texas Water Code §§ 16.012, 16.019, 16.053, 16.055, 17.123

B. What is the objective of this program or function? Describe the major activities performed under this program.

Water Availability was created following the passage of SB 1 by the 75th Legislature to provide technical support to regional and state water supply planning and assistance to agency programs via water availability modeling, including compilation and analysis of water data information. Formerly known as Water Availability Modeling, it was rebranded as Water Availability in 2018 to better reflect the variety of data and services it provides.

Water Availability conducts the following activities:

- Compile, disseminate, and analyze data related to surface water conditions and drought indices, including reservoir evaporation, precipitation, soil moisture, streamflow, and reservoir stage and storage
- Apply water availability models (WAMs) to examine the influence of factors such as lake sedimentation and changing hydrologic patterns on water availability and environmental flows
- Undertake reviews of regional water planning documents, including methodologies for the assessment of surface water availability; hydrological variance requests for the use of surface water availability assumptions alternative to those listed in regional water planning guidance documentation; and initially prepared (draft) plans for the 16 regional water planning groups
- Provide technical oversight for agency-funded environmental flow studies and water resources investigations
- Provide surface water information (e.g., reservoir firm yield) for the state water planning database and state water plan; provide drought information for the state water plan
- Review loan application to ensure availability of surface water
- Review engineering/study reports for agency-funded projects
- Participates in the State Drought Preparedness Council (Texas Water Code § 16.055(b)) by providing regular drought and water conditions updates as chair of the Council's Drought Monitoring and Water Supply Sub-Committee and by producing a biennial report on drought and water conditions for inclusion in the Council's biennial report to the legislature

This program provides the following services or products:

- Database of statewide water supply reservoir details
- Projected reservoir rating curves depicting expected reservoir sedimentation in 2030, 2040, 2050, 2060, and 2070 based on reservoir hydrographic surveys

- Updated naturalized flows extended through 2019 for river basins that do not have official extensions of naturalized flows (all basins except for the Colorado, Brazos, Red, Neches, and Rio Grande)
- Publication of the monthly *Texas Water Conditions Report*
- Publication of the monthly (or quarterly) *Drought Conditions Report* for the Texas Drought Preparedness Council
- Participates in the State Drought Preparedness Council by providing regular drought and water conditions updates as the chair of the Council's Drought Monitoring and Water Supply Sub-Committee and by producing a biennial report on drought and water conditions for inclusion in the Council's biennial Drought Report to the legislature

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

Water Availability's effectiveness has grown measurably in recent years with staff implementing new approaches through external collaborations and receivable grant funds to improve datasets on surface water evaporation and to estimate factors impacting future water resources and water supply. The program also has enhanced data and information dissemination through implementation of an interactive drought dashboard for Texas; through presentations and publications on subjects relevant to the regional water planning process, reservoir evaporation monitoring, water conditions, and drought information tools, including contributions to the biennial drought report to the Texas Legislature (2018 and 2020); and through convening two workshops to address *Surface Water Evaporation Monitoring in Texas and Forecast-informed Reservoir Operations and Water Resources Management.*

Historically, Water Availability has focused on drought as it impacts water availability. However, to support the agency's mission for flood science for flood planning, the program has initiated a study on *Assessing the causes and predictability of extreme high rainfall and linkages to flooding in Texas.* These new efforts are in addition to ongoing, routine contributions related to reviewing loan applications for surface water availability submitted to the agency's Water Development Fund, SWIFT, Drinking Water and Clean Water SRF programs and providing technical and administrative contract management for studies related to surface water resources.

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

In recognition of the impact of evaporative water loss to water supply, the compilation of reservoir evaporation data for the state was first undertaken and reported by the Texas Board of Water Engineers (in 1960) and then by the TWDB (from 1967 to date). The first report on reservoir evaporation data is Bulletin 6006, which covers reservoir evaporation data from 1940

through 1957. With the passage of SB 146 by the 59th Legislature, several functions of the Texas Water Commission (formerly the Texas Board of Water Engineers), namely preparation of a comprehensive state water plan and the continuation of technical programs related to water availability, water quality protection, reclamation, and water-related services, were transferred to the TWDB.

Water Availability was formalized in 1997 after the passage of SB 1 by the 75th Legislature. The compilation and provision of reservoir evaporation data is a continuation of a dataset that the TWDB has been responsible for providing since the 1960s. The program supports regional and state water planning efforts by providing and verifying surface water availability estimates. Additionally, with grant funding from the U.S. Bureau of Reclamation's Drought Response Program, the program is engaged in incorporating technological enhancements to reservoir evaporation monitoring to improve the accuracy of a variable that has a fundamental, yet hitherto poorly quantified, impact on water supply reliability in the state.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

No specific requirements apply.

The reservoir evaporation data collected, compiled, and disseminated by Water Availability are one of the integral hydrology datasets that go into the Texas water availability models (WAMs) used by the TCEQ for water permitting and by the regional water planning groups for evaluating water availability. The data are also used by consulting firms working on permit applications for wastewater treatment ponds.

Water Availability staff provide technical assistance to the regional water planning process, both to internal and external stakeholders. The drought information products developed by the program inform local and state entities responsible for implementing drought contingency plans. These products also provide information to the forest service and to emergency managers on drought conditions that may necessitate the staging of resources for wildfire management and emergency drinking water supply.

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

Water Availability is part of the Surface Water division within Water Science and Conservation. A manager and two hydrologists are headquartered in Austin. The manager is responsible for providing leadership and management of the team and technical oversight of all activities; assigning and prioritizing projects; coordinating activities with external collaborators and stakeholders; and all program administrative duties, including budget, timesheets, staff meetings, performance plans, merits, hiring, and discipline.

The manager also currently serves as the chair of the Drought Conditions and Water Supply Monitoring subcommittee of the Texas Drought Preparedness Council and actively recruits partnerships and grant funding to support the program's activities.

The hydrologists on the team specialize in tasks ranging from contract management to data analysis and reporting to statistical modeling of water resources. Staff meet weekly to discuss activities. Staff also provide technical assistance; interact with stakeholders and partners; and work collaboratively with other teams in the division and with other business areas including Water Supply Planning, Regional Water Project Development, IT, Groundwater, Finance, and TNRIS as necessary.

Water Availability provides technical support to each of the 16 regional water planning groups and for state water planning and also reviews loan applications for state funded water projects, as needed based on schedules set by Water Supply and Infrastructure for these activities. Water Availability also collects and compiles water data, including evaporation, precipitation, soil moisture, streamflow, and reservoir stage and storage. Data are updated on an ongoing basis and are available on the agency's website, waterdatafortexas.org, and in the monthly published Texas Water Conditions Report. Drought and water supply conditions also are reported in the monthly (or quarterly) *Drought Conditions Report* for the Texas Drought Preparedness Council. The program also maintains copies of the TCEQ's WAMs for use in water planning and water resources studies.

Water Availability also has assisted in providing technical support to the Texas SB 3 (2007) environmental flows stakeholder process. In an important role, the program is using its expertise to better understand extreme rain events leading to potential flooding as part of the agency's new flood science and planning directives from the 86th Legislature.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
Federal Funds	$	4,456
General Revenue	$	147,612
Grand Total	$	152,068

Water Availability operates with general revenue and makes advances through collaborations and receipt of external grants. Currently, the program receives funding from the U.S. Bureau of Reclamation Drought Response Program and the Lower Colorado River Authority.

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

Water Availability Modeling

The TCEQ, the TPWD, and river authorities conduct WAM analyses. However, the TWDB's WAM modeling activities have clear purposes that do not overlap with those of these entities. There are significant difference between the TWDB and others:

- The TCEQ focuses on water rights permitting, basing the modeling on either historical or current hydrological and water use conditions, while the TWDB focuses on long-term water planning, which may involve revisions of the WAMs to estimate water availability under projected future conditions and to better reflect actual hydrologic conditions.

- The TPWD focuses on stream flow conditions, while the TWDB focuses on both water availability and stream flows.

- River authorities conduct WAM analyses only during their regional water planning period. Their focus is on regional interests, while the TWDB maintains a continuous and statewide focus.

The TWDB maintains close contact with the TCEQ to ensure that the agency has the latest version of the TCEQ WAM models and understand the latest WAM functions. The data collection and synthesis activities of the WAM Program use data from the USGS and National Weather Service in addition to data collected by the TWDB to develop water resources data or reports, thus TWDB is aware of and does not overlap with data collection from other programs.

Evaporation Data

The TWDB is the only entity that compiles and provides reservoir evaporation data, which comprise an integral input dataset for the state's WAMs used by the TCEQ for water rights permitting and by all 16 regional water planning groups for the assessment of surface water availability. The data are also used by engineering firms for sizing water and wastewater infrastructure (e.g., evaporation credits for ASR projects and wastewater treatment ponds).

Water Conditions

No other program provides monthly water conditions for all of Texas.

Drought Dashboard

No other program provides an interactive drought dashboard for the entire state with the option to view weekly areal extents under different categories of drought and monthly rainfall and temperature anomalies by county and by Hydrologic Unit Code (HUC-08) watersheds, high-resolution (4 kilometer by 4 kilometer) drought index data for five drought indices that capture

meteorological, hydrological, vegetation conditions, the risk of flash droughts, and daily soil moisture conditions for the state.

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

Water Availability frequently partners with other entities to advance activities. For example, the TWDB collects and compiles reservoir evaporation data for the entire state based on pan evaporation data collected from cooperator Class A pan stations and from pan stations reporting to the National Centers for Environmental Information. Both the U.S. Army Corps of Engineers Fort Worth and Tulsa districts and the Lower Colorado River Authority estimate reservoir evaporation from some of the reservoirs in their jurisdiction, but neither have a mandate to collect and provide reservoir evaporation data for the entire state as the TWDB does.

Water Availability is also collaborating with the U.S. Bureau of Reclamation to obtain data for on-water reservoir evaporation measurements that can be used to validate the equations being used to develop a gridded reservoir evaporation dataset across the western United States. To this end, the TWDB has an MOU with the U.S. Bureau of Reclamation for on-water monitoring deployments on Twin Buttes Reservoir and Choke Canyon Reservoir and with the Lower Colorado River Authority for an on-water deployment on Lake Buchanan.

In addition, the TWDB is collaborating with the U.S. Army Corps of Engineers and the Lower Colorado River Authority to fund and develop a daily and fine-resolution gridded (4 kilometer by 4 kilometer) reservoir evaporation dataset for Texas that uses state of the art datasets (e.g., remotely sensed reservoir area and dynamic extents, accounts for heat storage) and cloud computing technology. The TWDB has an interlocal agreement with the Lower Colorado River Authority for funding the daily and gridded reservoir evaporation data project and participates in quarterly meetings with the U.S. Army Corps of Engineers, Lower Colorado River Authority, and Texas A&M University to discuss progress on evaporation data. Staff also participate in monthly reservoir evaporation coordination calls with the U.S. Bureau of Reclamation, Lower Colorado River Authority, Texas A&M University, and the Desert Research Institute to share updates on on-going reservoir evaporation monitoring and research projects to exchange ideas on best practices.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

Water Availability collaborates with a number of local, federal, and academic partners on a variety of projects. Staff are working with the U.S. Bureau of Reclamation to improve the accuracy of reservoir evaporative loss estimates and better understand the effect of uncertainty in hydrologic conditions (rainfall, streamflow, etc.) on reservoir management for improved drought planning. Water Availability also collaborates with the U.S. Army Corps of Engineers–Fort Worth District to improve and expand the coverage of evaporation data in

Texas and to explore the application of forecast-informed reservoir operations to improve reservoir management for the benefit of water supply and flood control. The National Weather Service West Gulf River Forecast Center also is a partner in improving upon the accuracy of forecasts needed to support forecast-informed reservoir operations in Texas. Uniquely, the TWDB is a recognized Early Adopter of the Surface Water Ocean Topography Mission established by the National Aeronautics and Space Administration – Jet Propulsion Laboratory. This relationship gives the TWDB access to the tools for estimating reservoir evaporation from several thousand unmonitored reservoirs in Texas. The Brazos River Authority has given feedback to improve upon the agency's drought dashboard and has incorporated the TWDB's May through July rainfall forecasting tool as an experimental effort in forecasting summer reservoir storage. Similarly, the program works with the Lower Colorado River Authority to expand coverage of evaporation data and to develop an interactive drought monitor tool that can be viewed at the watershed scale. Academic partners include the University of Texas at Arlington, Texas A&M University, and the University of Texas Bureau of Economic Geology.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall; provide a narrative summary**
- **the amount of those expenditures in fiscal year 2020;**
- **the number of contracts accounting for those expenditures;**
- **the method used to procure contracts;**
- **top five contracts by dollar amount, including contractor and purpose;**
- **the methods used to ensure accountability for funding and performance; provide a short narrative**
- **a short description of any current contracting problems.**

No contracted expenditures were made in this program in FY 2020.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

N/A

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

See the TWDB's websites for more information:

Water Data for Texas, Drought webpage

Water Data for Texas, Lake Evaporation and Rainfall webpages

Texas Water Conditions and Data webpage, including the monthly Texas Water Conditions Report

Proceedings of the Forecast-informed Reservoir Operations and Water Resources Management in the States of Texas and Oklahoma

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

VII. Guide to Programs: Texas Natural Resources Information System, Strategic Mapping Program, and GIO

TNRIS, through the Strategic Mapping program, provides high quality historic and current geospatial data products as well as education and training resources for the general public and state agencies, including the TWDB. TNRIS supports the agency with custom mapping, mapping application development, and other services. The geospatial data products provided by TNRIS form the underpinning for many of the regular program activities within the TWDB's objectives of science, planning, and financial assistance for project implementation.

These data products support activities far beyond the reach of the TWDB, providing critical mapping and geospatial tools for a wide range of activities in a broad range of economic sectors, including planning and community development; transportation and infrastructure planning and development; environmental impact analysis; agricultural applications; disaster management and mitigation; natural resources management; surveying; emergency response; telecommunications; navigation; and many more.

The Strategic Mapping program, outlined below, is the primary objective of TNRIS.

A. Provide the following information at the beginning of each program description.

Name of Program or Function: Texas Strategic Mapping Program

Location/Division: Texas Natural Resources Information System

Contact Name: Richard Wade, Deputy Executive Administrator; Gayla Mullins, Strategic Mapping Manager

Statutory Citation for Program: Texas Water Code 16.021

B. What is the objective of this program or function? Describe the major activities performed under this program.

The Texas Strategic Mapping Program, "StratMap," is responsible for the acquisition and maintenance of regional and statewide geographic data. Major activities include

- coordination among state, local, and federal agencies for geographic data cost-sharing;
- creating geographic data standards;
- managing acquisition projects;
- data quality oversight.

TNRIS supports the StratMap program through the TNRIS website and the online data delivery system known as the DataHub. The DataHub is the central repository for all publicly available geographic data, including the StratMap base layers.

C. What evidence can you provide that shows the effectiveness and efficiency of this program or function? In Exhibit 12, provide a list of statistics and performance measures that best convey the effectiveness and efficiency of this program or function. Also, please provide the calculation or methodology behind each statistic or performance measure. Please refer to, but do not repeat measures listed in Exhibit 2.

N/A

D. Describe any important history regarding this program not included in the general agency history section, including how the services or functions have changed from the original intent. If the response to Section III of this report is sufficient, please leave this section blank.

The StratMap program originated in 1997 when the 75th Legislature passed SB 1, which provided funding to develop geographic base map layers for use in a geographic information system.

In 2000, the most fundamental base layer, aerial or orthoimagery, was completed with 17,772 digital images created across Texas.

In 2001, StratMap completed the following base layers: surface water (hydrography), road centerlines, contour lines (hypsography), political boundaries (cities, counties, parks), by using

approximately $40,000,000 in state and matching funds, in-kind contributions, and related data.

The 77th Legislature provided funds for maintaining orthoimagery, road centerlines, and political boundaries and for creating the National Hydrographic Dataset for Texas. That year, TNRIS made StratMap data available online via a Digital Data Distribution.

No funds were appropriated to the program by the 81st Legislature, but the StratMap team continued to work with federal, state, and local agencies for funding to help maintain the base map data and acquisition of critical geographic data.

StratMap funding was restored by the 86thand 87th legislatures, allowing the program to maintain, cost-share, and acquire geographic data across Texas. These geographic data are essential for a variety of functions such as emergency management and response, environmental conservation, and flood mitigation.

E. List any qualifications or eligibility requirements for persons or entities affected by this program, such as licensees, consumers, landowners, for example. Provide a statistical breakdown of persons or entities affected.

N/A

F. Describe how your program or function is administered, including a description of the processes involved in the program or function. Include flowcharts, timelines, or other illustrations as necessary to describe agency policies and procedures. Indicate how field/regional services are used, if applicable.

The StratMap program is comprised of six essential staff, fully supported by other staff in TNRIS. Support for the StratMap program includes data inventory, quality assurance and processing, storage, and dissemination to the public via a web application known as the TNRIS Data Hub.

StratMap geographic data acquisition projects are made possible with the assistance of the DIR Cooperative Contracts program. DIR has held the GIS contracts, also known as StratMap contracts, since 2016, making it easier to procure data not only for the StratMap program staff who commonly cost-share projects with other state agencies, but also for local and regional entities. Any state agency making a procurement of GIS data is required to use the pre-qualified provider contracts or request an exemption. This gives the StratMap Program the opportunity to 1) maintain awareness of GIS data purchases and 2) seek additional funding opportunities to expand geographic coverage and increase product types and standards.

The geographic data acquisition process steps are listed below.

Step 1: Receive initial request; draft statement of work

Step 2: Finalize statement of work; submit to DIR for approval

Step 3: Submit statement of work to pre-qualified vendors with a DIR GIS contract

Step 4: Review and evaluate responses; submit summary recommendation to all respondents

Step 5: Submit final statement of work to DIR for approval

Step 6: Release purchase order to awarded respondent and schedule kick-off meeting

Total expenditures through the DIR GIS contracts for the FY 2020/2021 biennium are listed in the next section.

The TWDB Administrative Rules related to TNRIS partnerships and state agency geographic information standards can be found in Texas Administrative Code, Title 31, Part 10, Chapter 353, Subchapter G.

G. Identify all funding sources and amounts for the program or function, including federal grants and pass-through monies. Describe any funding formulas or funding conventions. For state funding sources, please specify (e.g., general revenue, appropriations rider, budget strategy, fees/dues).

Operating expenditures for this program in FY 2020 were as follows:

FY 2020 Funding		Amount
General Revenue	$	1,256,263
Flood	$	533,351
Appropriated Receipts	$	39,743
Grand Total	$	1,829,358

The 87th Texas Legislature appropriated StratMap $3,000,000 for the 2022–23 biennium to acquire and maintain geographic data. Additional funding sources from local and federal agencies are received per data acquisition project. Funding amounts are calculated based on the area of interest in most cases. The larger the geographic area, the smaller the per unit cost is to each contributing partner. The chart below represents data acquisition projects for the 2020-21 biennium and the partner contributions that made the projects possible.

Data	Project Title	Total Cost	Contribution	Contributing Entity
Orthoimagery	Capital Area / McLennan County	$322,393.00	$183,078.00	Capital Area Emergency Communications District
			$5,280.00	City of Bee Cave
			$7,280.00	City of Pflugerville
			$2,480.00	City of Burnet
			$8,000.00	City of Round Rock
			$6,160.00	City of Marble Falls
			$34,800.00	City of Waco
			$5,715.00	City of West Lake Hills
			$34,800.00	McLennan County
			$34,800.00	McLennan County 9-1-1
Lidar & Orthoimagery	Balmorhea and Davis Mountain State Park	$138,231.63	$138,231.63	TPWD
Lidar	Collin, Grayson, Fannin	$74,417.92	$74,417.92	TCEQ Dam Safety
Lidar	North & Central TX	$853,174.93	$837,223.93	Texas Water Development Board
			$4,563.90	City of Marble Falls
			$11,387.10	TPWD

Historical Imagery	Statewide Historic Aerial Photo Scanning	$163,000.00	$163,000.00	TWDB StratMap
Orthoimagery	Texas Imagery Service 2021 urban imagery	$239,998.00	$239,998.00	Texas Water Development Board StratMap
Land Parcels	Pritchard & Abbott Land Parcels	$3,600.00	$3,600.00	Texas Water Development Board StratMap
Address Points	StarMap Houston-Galveston Area Council Address Points	$700.00	$700.00	Texas Water Development Board StratMap
Lidar	Travis/Bexar County	$888,015.58	$442,429.70	City of Austin
			$285,630.53	San Antonio River Authority
			$18,917.46	City of Bastrop
			$41,930.44	Edwards Aquifer Authority
			$32,825.49	City of New Braunfels
			$5,170.93	Texas Municipal Power Agency
			$61,11.03	City of Bryan
Lidar	McLennan County		$67,669.74	TCEQ
Orthoimagery	Capital Area Council of Government, Brazos, and Kerr County	$328,869.00	$56,175.00	City of Austin
			$3,750.00	City of Bastrop
			$6,750.00	City of Round Rock

			$3,150.00	City of Bee Cave
			$3,750.00	Horseshoe Bay
			$1,425.00	City of Smithville
			$19,7875.00	City of Kerrville
			$164,619.00	Capital Area Council of Governments
			$24,450.00	Brazos County Appraisal District
			$25,575.00	City of Bryan
			$9,825.00	City of College Station
			$4,125.00	Texas A&M University
			$5,400.00	Texas Municipal Power Agency
Lidar	Bois d'Arc Reservoir	$67,883.00	$67,883.00	TWDB StratMap
Lidar	Classification of points	$1,160,079.34		Texas Water Development Board StratMap

H. Identify any programs, internal or external to your agency, that provide identical or similar services or functions to the target population. Describe the similarities and differences.

N/A

I. Discuss how the program or function is coordinating its activities to avoid duplication or conflict with the other programs listed in Question H and with the agency's customers. If applicable, briefly discuss any memorandums of understanding (MOUs), interagency agreements, or interagency contracts.

One of the most important functions of the GIO is to build and maintain relationships with public agencies, institutes of higher education, and private sector and trade associations. The GIO encourages cooperation between stakeholders to maximize the value of GIS data and services across the start. The GIO accomplishes these charges by bringing the GIS community together to create connections, finding common needs, and building support for continued innovation to promote the use and adoption of geographic information systems.

To ensure strong coordination and collaboration among state agencies, TNRIS, through DIR, has established the GIS Solutions Group made up of high-level personnel from state agencies with a sophisticated GIS department including The Texas Department of Transportation, TCEQ, GLO, Commission on State Emergency Communications, RRC, TPWD, Texas Historical Commission. This group provides input on data projects and how funds should be spent for the good of the state.

The StratMap program works diligently to ensure that geographic data acquisition projects are centralized through the program. In 2009, StratMap worked with the Comptroller's Office to contract with a number of geographic data companies. This allowed us to create a rule that required all state agencies contact the StratMap program prior to making geographic data purchases. In 2016, the contracts were offered by DIR and the rule stands. StratMap personnel work diligently to give the Geographic Information Systems (GIS) community in Texas awareness of any data acquisition project during the planning stages in order to pool available funding resources and avoid duplication of the same data in the same geographic area. Over the years, through outreach and project collaboration many times over, the StratMap program has become a known resource for state agencies looking to fulfill their needs for acquiring new data. These efforts continue with quarterly updates from StratMap personnel at GIS community meetings and presentations at other events throughout the year to maintain awareness of the program.

J. If the program or function works with local, regional, or federal units of government, include a brief description of these entities and their relationship to the agency.

The StratMap program works with any and all public agencies interested in acquiring geographic data. On the national front, we work with the U.S. Geological Survey, the National Ocean and Atmospheric Agency, and the United States Department of Agriculture Aerial Photography Field Office. These federal agencies support our data acquisition projects by providing funding or oversight.

Additionally, the StratMap program has worked with over 70 individual local and regional government agencies in Texas to assist them with quality geographic data acquisition to meet their business needs at best value. Many of these agencies are repeat partners of the StratMap program.

K. If contracted expenditures are made through this program please provide

- **a short summary of the general purpose of those contracts overall;**

The general purpose of these contracts is to purchase data and services for the program.

- **the amount of those expenditures in fiscal year 2020;**

$111,512

- **the number of contracts accounting for those expenditures;**

2

- **the method used to procure contracts;**

Interlocal agreement with public agency/higher education

- **top five contracts by dollar amount, including contractor and purpose;**

Name	Amount
U.S. Dept of Interior - USGS	$74,999.00
Austin Community College	$36,512.81

- **the methods used to ensure accountability for funding and performance; and**

Invoices/payments are reviewed and authorized by a designated contract manager and are tracked in the Contract Administration System application. Where necessary, regular status reports are requested from the contracted entity.

- **a short description of any current contracting problems.**

None.

L. Provide information on any grants awarded by the program.

N/A

M. Are there any barriers or challenges that impede the program's performance, including any outdated or ineffective state laws? Explain.

TNRIS acts as a historical reference for data, and all data are saved within the DataHub for users to understand changes in Texas. Each year, new data is acquired replacing old data within the DataHub. The costs to maintain new data while preserving old data can be excessive, so TNRIS continues to explore new technology solutions to offset these costs.

N. Provide any additional information needed to gain a preliminary understanding of the program or function.

Cost-sharing for geographic data is the most effective way for the state to acquire data that covers as much of the state as possible. Without external funding, the $3,000,000 budgeted by

the state would not be enough to obtain the data. Geographic data is collected by aircraft, satellite, or vehicle, resulting in large amounts of information exceeding normal data file sizes. These data must be acquired with precision to ensure positional and attribute accuracy, thus the high cost. The StratMap program exists to ensure state agencies and the public have access to geographic information through cost-sharing efforts.

TNRIS is working to provide a premium data service that will greatly benefit regional and local governments with their data needs. Making this service affordable will attract governmental entities to participate that will help offset costs and help us with application and storage costs.

This is the model for the Texas Imagery Service that been in existence since 2015, saving millions of dollars for the state of Texas.

O. Regulatory programs relate to the licensing, registration, certification, or permitting of a person, business, or other entity. For each regulatory program, if applicable, describe

- **why the regulation is needed;**
- **the scope of, and procedures for, inspections or audits of regulated entities;**
- **follow-up activities conducted when non-compliance is identified;**
- **sanctions available to the agency to ensure compliance; and**
- **procedures for handling consumer/public complaints against regulated entities.**

N/A

P. For each regulatory program, if applicable, provide detailed information on complaint investigation and resolution. Please adjust the chart headings as needed to better reflect your agency's particular programs. Please briefly explain or define terms as used by your agency, such as complaint, grievance, investigation, enforcement action, jurisdictional, etc. If necessary to understand the data, please include a brief description of the methodology supporting each measure.

N/A

VIII. Statutory Authority and Recent Legislation

A. Fill in the following charts, listing citations for all state and federal statutes that grant authority to or otherwise significantly impact your agency. Do not include general state statutes that apply to all agencies, such as the Public Information Act, the Open Meetings Act, or the Administrative Procedure Act. Provide information on Attorney General opinions from FY 2015–2020, or earlier significant Attorney General opinions, that affect your agency's operations.

TWDB
Exhibit 14: Statutes

Citation / Title	Authority / Impact on Agency
Chapter 6, Texas Water Code	General enabling legislation for TWDB
Chapter 15, Texas Water Code	Authority for various financial assistance programs
Chapter 16, Texas Water Code	Authority for various financial assistance programs
Chapter 17, Texas Water Code	Authority for various financial assistance programs
33 U.S.C. 1251–1387	Federal authority for CWSRF
42 U.S.C. 3000j-12	Federal authority for DWSRF

Attachment VII.A. Financial Assistance Bonding and Financing Authorities provides additional detail on the TWDB's constitutional and statutory authorities to issue debt.

There are no recent Attorney General opinions that affect TWDB operations.

B. Provide a summary of significant legislation regarding your agency by filling in the charts below or attaching information already available in an agency-developed format. Briefly summarize the key provisions. For bills that did not pass but were significant, briefly explain the key provisions and issues that resulted in failure of the bill to pass (e.g., opposition to a new fee, or high cost of implementation). Place an asterisk next to bills that could have a major impact on the agency.

TWDB
Exhibit 15: 87th Legislative Session

Legislation Enacted

Bill Number	Author	Summary of Key Provisions
HB 692	Shine	HB 692 relates to retainage requirements for certain public works construction projects. Certain provisions of the bill relating to withheld retainage exclude projects funded by SWIFT that were formally approved for any part of a project's financing before September 1, 2019.

Bill Number	Author	Summary of Key Provisions
HB 1904	Harris	HB 1904 allows the TWDB to transfer WIF program funds to the Development Fund II, enabling the agency to close out the WIF program while properly providing for disposition of remaining WIF funds. The TWDB retired WIF in 2013 when the legislature created SWIFT.
HB 1905	Harris	HB 1905 removes certain regional water planning duties that are underfunded and/or no longer informative, including requirements for regional water planning groups to prepare infrastructure financing reports and to prioritize projects at the regional level.
HB 2225	King, Tracy	HB 2225 gives the TPWD additional responsibilities with respect to the Texas Water Trust but does not change TWDB responsibilities. The Texas Water Trust remains part of the Texas Water Bank, which will continue to be administered by the TWDB. This bill allows the TPWD to encourage and facilitate the dedication of water rights and grants the TPWD authority to manage water rights in the Texas Water Trust.
SB 13	Birdwell	SB 13 prohibits state agencies from entering into contracts with a company for goods and services unless the contract contains a written verification from the company that it does not boycott energy companies and will not boycott energy companies during the term of the contract.
SB 19	Schwertner	SB 19 prohibits state agencies from entering into a contract with a company for the purchase of goods or services unless the contract contains written verification from the company that it does not have any internal practices, policies, guidance, or directives that discriminate against a firearm entity or trade association and will not discriminate against a firearm entity or trade association during the term of the contract.
SB 601	Perry	SB 601 creates the Texas Produced Water Consortium to study the economics and technology related to the beneficial uses of fluid oil and gas waste. The TWDB must designate a representative to serve on the consortium's agency advisory council and contribute feedback on the required report, which is due September 1, 2022.
SB 669	Springer	SB 669 removes the statutory requirement for the TWDB to submit the Water Use of Texas Water Utilities Report and the Report on Repair and Maintenance Needs of Certain Dams (prepared in coordination with the Texas State Soil and Water Conservation Board and the TCEQ) to the legislature.

Bill Number	Author	Summary of Key Provisions
SB 726	Schwertner	The Property Code allows property owners to repurchase their property lost through eminent domain if the acquiring entity does not make actual progress toward developing the project for which the property was acquired. This bill amends the definition of "actual progress" to clarify that certain navigation districts, port authorities, or water districts that are building projects in the state water plan can prove actual progress by meeting one of five requirement options and adopting a development plan for the project that indicates that it will not complete one of the usual progress requirements before the 10th date of the anniversary the property was acquired.
SB 800	Nelson	This bill removes the requirement for the TWDB to submit the Report on Repair and Maintenance Needs of Certain Dams to the legislature (also included in SB 669). The bill also cleans up a duplicative requirement for state agencies to report to the TWDB on federal money used for flood projects that was added to the Government Code by SB 563 and to the Water Code by SB 7 during the 86th Legislative Session. This bill removes the requirement from the Government Code.
SB 1890	Creighton	The Texas Comptroller of Public Accounts promulgates state grant management guidance called the Uniform Grant Management Standards. TWDB grant standards are more comprehensive and are consistent with the agency's statutory and programmatic guidance; the inconsistency between Uniform Grant Management Standards and TWDB grant standards creates confusion for TWDB customers and staff. SB 1890 exempts the following TWDB programs from these standards: FIF, TIRF, and the Agricultural Water Conservation Program. Uniform Grant Management Standards do not apply to loans, and all other TWDB state-funded grant programs are already explicitly exempt.
SCR 29	Miles	SCR 29 urges the U.S. Board of Geographic Names to approve name change proposals that would change the word "Negro" from 28 geographic features within Texas. The Texas Geographic Names Committee is chaired by the state GIO, housed within the TWDB. The Texas Geographic Names Committee performs reviews and makes recommendations to the U.S. Board of Geographic Names for naming natural or cultural features.

Legislation Not Passed

Bill Number	Author	Summary of Key Provisions / Reason Bill Did Not Pass
HB 152	*Buckley*	HB 152 would direct the TWDB to study projected groundwater production and effects on the Trinity and Edwards aquifers north of the Colorado River, in Bell, Burnet, Milam, Travis, and Williamson counties. The bill was referred to committee but did not receive a hearing.
HB 1874	*Larson*	HB 1874 would clarify TWDB responsibilities with respect to the Interregional Planning Council created by the 86th Legislature to improve coordination among regional water planning groups. The bill was considered in Calendars but did not make it to the House floor.
HB 1912	*Wilson*	HB 1912 relates to air quality permits for aggregate production operations and concrete batch plants. The bill would require TCEQ to provide notice of public hearings to local GCDs or to the TWDB if no GCD has jurisdiction in the area. The bill was left pending in the House Environmental Regulation Committee.
HB 2000/HJR 2	*Huberty*	HB 2000 would create the State Utilities Reliability Fund to serve as an infrastructure bank to finance projects that enhance the reliability of water, electricity, natural gas, and broadband utilities in the state. HJR 2 would add two new sections to the Texas Constitution, creating the fund and the State Utilities Reliability Revenue Fund as special funds in the treasury outside the general revenue fund administered by the TWDB without further appropriation to provide financing for projects that enhance the reliability of water, electricity, natural gas, and broadband utilities through weatherization and providing adequate capacity in periods of high demand. Both HB 2000 and HJR 2 passed the House and were received in the Senate.
HB 2095	*Wilson*	HB 2095 would direct the University of Texas Bureau of Economic Geology to conduct water research to improve upon data gaps and upon the processing, analysis, modeling, and integration of water-related data. The Bureau would study surface water, groundwater, soil moisture, and atmospheric moisture and is directed to enhance, advance, or integrate water models, all in coordination with the TWDB. The bill was left pending in the Senate Water, Agriculture, and Rural Affairs Committee.

Bill Number	Author	Summary of Key Provisions / Reason Bill Did Not Pass
HB 2103	*Bowers*	HB 2103 would allow the Interregional Planning Council, its committees, and subcommittees; regional water planning groups, their committees, and their subcommittees; regional flood planning groups, their committees, and their subcommittees; and Groundwater Management Areas to hold open or closed meetings by telephone or videoconference call. These telephone or videoconference calls would be subject to the current Open Meetings Act requirements for those types of meetings. However, this bill would allow these groups to meet via telephone conference call in situations other than emergencies. The bill passed the House and was received in the Senate.
HB 2275	*Zweiner*	HB 2275 would create the Water Infrastructure Resiliency Fund to be administered by the TWDB and used to make grants to water and wastewater systems for weatherizing and hardening expenses such as well coverings, reserve power supply equipment, and connectivity with neighboring suppliers. The bill passed the House and was received in the Senate.
HB 2350	*Zweiner*	HB 2350 would allow projects funded by the CWSRF Program under Chapter 15, Subchapter J that are not water resource restoration projects to be combined with water resource restoration projects. It would require the Board to establish a process by which available principal forgiveness funds for “green” projects may be utilized to substantially enhance the viability of the water resource restoration project. This bill was referred to the Senate Water, Agriculture, and Rural Affairs Committee.
HB 2652	*Larson*	HB 2652 would create the Surface Water and Groundwater Interaction Advisory Board to study the extent to which surface water and groundwater interact in Texas. The Executive Administrator of the TWDB would serve as the chair. This bill was reported from the House Natural Resources Committee.
HB 2851	*Lucio III*	HB 2851 relates to the consideration of modeled sustained groundwater pumping in the adoption of DFCs in GCDs. This bill would require the GCDs, before voting to propose DFCs, to consider the modeled sustained pumping if it is calculated by the TWDB. This bill was referred to the Senate Water, Agriculture, and Rural Affairs Committee.

Bill Number	Author	Summary of Key Provisions / Reason Bill Did Not Pass
HB 2905	*Morrison*	This bill would provide for public-private partnerships in the implementation of projects awarded financial assistance from several different funds and accounts administered by the TWDB. Authority would be provided for recipients of money from SWIRFT to enter into public-private partnerships for projects described by the statutory provisions for FIF, the RWAF, the State Participation account, and the Agricultural Water Conservation Bond Program. Authority would also be provided for recipients of money from the FIF and WIF programs. The bill was left pending in the House Natural Resources Committee. The TWDB's state funded programs are currently able to support projects implemented by the model as long as the project sponsor applying for funding is a political subdivision.
HB 3084	*Larson*	HB 3084 would require the TWDB to prepare a report to the legislature proposing a framework for a new state-level planning component that would identify and evaluate multiregional water supply projects and provide a general outline for a potential work plan, timeline, and estimated cost for the implementation of the new planning component. The bill passed the House and was received in the Senate.
HB 3683	*Morales*	HB 3683 calls for the TWDB to adopt standards for water management by a conservation and reclamation district in a specific county that borders the Rio Grande, overlies the Edwards-Trinity Aquifer, and has a population greater than 40,000. For a conservation and reclamation district in this area, the bill requires the TWDB to adopt standards for groundwater management and for river and spring flow, including flow requirements for the Devils River, Pecos River, San Felipe Springs, and Lake Amistad, all of which occur in Val Verde County. The bill was referred to the House Natural Resources Committee.
HB 3750	*Lucio III*	HB 3750 would add the installation, maintenance, operation, and fueling of backup power generators for water supply and sewer service as eligible uses of the EDAP. This bill was withdrawn from the Senate Local Calendar.

Bill Number	Author	Summary of Key Provisions / Reason Bill Did Not Pass
HB 3801	*Metcalf*	HB 3801 would require that a GCD include the most recently approved DFCs and corresponding modeled available groundwater in each management plan. The bill would require a district to amend its groundwater management plan before the second anniversary of the adoption of DFCs and requires that the most recently approved DFCs and corresponding modeled available groundwater be included in the amended plan. This bill clarifies the scope of the TWDB Executive Administrator's review of groundwater management plans when considering the administrative completeness of a plan in which the reasonableness of an adopted DFC has been challenged. The bill was referred to the Senate Water, Agriculture, and Rural Affairs Committee.
HB 4420	*Krause*	HB 4420 would require the Comptroller to conduct a study on the economic impact and feasibility of public-private partnerships as an alternative delivery method for TWDB state water plan projects and Texas Department of Transportation road projects with costs of $1 billion or greater. The TWDB would be required to conduct a comprehensive review of all state water plan projects with costs of $1 billion or greater. The bill was passed in the House and received in the Senate.
HB 4636	*Morales*	HB 4636 would create the Val Verde County GCD. The boundaries of the district would be coextensive with the boundaries of Val Verde County. The TWDB would be required to adopt guidelines for the development of standards, best management practices, and management objectives for surface water and groundwater in the district, including a plan for groundwater monitoring, collection of groundwater data, and study of groundwater conditions and the relationship between groundwater and flow in the Pecos River, Devils River, and San Felipe Springs. The bill was reported favorably from the House Natural Resources Committee.
SB 152	*Perry*	SB 152 would address several topics related to GCDs, including rulemaking petitions, recovery of attorney's fees, landowner notification regarding well spacing, and GCD management plan amendments (including TWDB consideration of administrative completeness following a petition to challenge the reasonableness of a DFC). The bill was passed by both chambers; the Senate refused to concur in House amendments.

Bill Number	Author	Summary of Key Provisions / Reason Bill Did Not Pass
SB 699	*Hughes*	SB 699 would require the legislature to establish a joint interim committee to study the conversion of quarries and surface mine pits to water storage reservoirs to enhance this state's available water supply. The TCEQ, the RRC, and the TWDB would provide administrative support and resources to the committee. The bill was referred to House Administration.
*SB 995/SJR 44**	*Powell*	SB 995 would create a new revolving fund for disaster reinvestment and infrastructure planning, administered by a new 13-member board. A member of the TWDB would serve on the board, which would be administratively attached to the TWDB. The TWDB would provide office space and administrative support services for the board to administer the Disaster Reinvestment and Infrastructure Planning fund. SJR 44 would provide up to $500 million of general obligation bonding authority to the board. SB 995 and SJR 44 were referred to Senate Finance but did not receive a hearing.

IX. Major Issues

1. Governmental Immunity for Local Governments Participating in Regional Projects

A. Brief Description of Issue

The enforceability of water supply contracts between regional service providers and their local government customers is currently being litigated in Texas courts. Chapter 271, Local Government Code, provides a waiver of sovereign immunity when units of local government, including cities, execute contracts to purchase goods. Certain cities, however, have claimed the waiver of immunity does not apply to contracts they signed for the purchase of water from a regional provider financed by the TWDB because the exact price and quantity of water to be purchased is later determined under the terms of the contract. In making this claim, the cities have argued the waiver of governmental immunity under Chapter 271 occurs only when the contract document itself contains fixed terms for price and quantity.

B. Discussion

The specific problem to be solved is that Texas courts may find that entities sponsoring regional projects are barred by governmental immunity from suing their city customers to collect unpaid charges for water. The issue affects the TWDB as a lender to regional projects, the regional projects who may be barred from suing their customers, and the participants in regional projects who may be affected if some customers do not pay for water. In its role as a lender to regional projects, the TWDB seeks certainty about the right of its borrowers to collect revenues that have been pledged to loans the TWDB made. Any legislation that provides more clarity about when governmental immunity has been waived would be helpful. Legislation stating the intent of the waiver contained in Chapter 271, Local Government Code, is to provide for a

waiver of immunity whenever the normal elements for contract formation have been met would be especially helpful because it would make it very clear when the waiver of immunity applies. There has been no previous attempt to address this issue legislatively.

C. Possible Solutions and Impact

A change to the Local Government Code that clarifies what is needed for a waiver of governmental immunity for sale of goods contracts would provide certainty for regional projects and for the lenders who finance them. All that is needed is to add language to the statute stating it is the intent of the legislature that immunity is waived whenever the elements for contract formation have been satisfied and that no additional showing is necessary. The alternative position some local governments have asserted in litigation—that a person seeking to sue a local government must prove all information needed to calculate contract damages is within the four corners of the contract—unnecessarily complicates the law without offering any benefit other than possibly an unjust result that may please a few persons currently involved in litigation.

The upside for the proposed change, on the other hand, would be much more widely shared. Regional projects, as well as anyone else who sells goods to local governments, will be positively affected because the proposed change will provide an easy-to-apply rule that makes it very clear when governmental immunity is waived. Lenders to regional projects, such as the TWDB, will also benefit from the certainty such a rule would provide because they will have confidence in the ability to collect revenues pledged to the loans they make. The ultimate customers of regional water projects may benefit from a bright line rule for governmental immunity because the certainty offered by the rule can reduce financing costs and allow for water to ultimately be provided at a lower cost.

There is no real drawback to the proposed change because it only concerns the right to bring a lawsuit against a unit of local government. Once subject to suit, local governments will still be able to assert any substantive defenses to liability they may have, such as non-delivery or a failure of the goods to meet specifications. The proposed change would ensure anyone who sells goods to a local government has recourse and that everyone involved in the transaction is treated fairly.

2. Texas Open Meetings Act Allowances

A. Brief Description of Issue

During the governor's COVID-19 pandemic disaster declaration, the TWDB implemented virtual procedures for open meetings that included the opportunity for members of the public to participate in meetings via telephone, as allowed under the governor's suspension of Texas Open Meetings Act laws. Once the exception expires on September 1, 2021, the TWDB will once again be subject to the provision for public participation that specifically allows for participation by members of the public only by videoconference (see Texas Open Meetings Act § 551.127(k)).

This issue is also relevant for several groups affiliated with the TWDB, including the Interregional Planning Council, regional water planning groups, the Water Conservation Advisory Council, groundwater management areas, and regional flood planning groups, all of which have had the opportunity to expand opportunities for public participation and operate more efficiently under the exception.

B. Discussion

Members of the public have become accustomed to remote participation in TWDB open meetings by telephone or audio (without videoconferencing) but will not be able to do so after the suspension of Texas Open Meetings Act requirements expires in September 2021. The people most affected will be those who do not have the necessary broadcast equipment or sufficient broadband service to participate in virtual meetings via videoconference. These individuals could again potentially face long and costly travel to participate in meetings held at the TWDB's headquarters in Austin. The agency's role in the issue is to provide public access to its open meetings in accordance with Texas law. Numerous bills that would have expanded public access to open meetings were filed during the 87th Regular Legislative Session, but none of them became law.

The other groups affected by the expiration of the exception rely heavily on critical work conducted by volunteers. Each of these groups includes representatives from across the state and members often spend considerable time and resources traveling to attend meetings, even when the meetings are held in central locations. All meetings would still be subject to notice requirements and would be required to offer a physical location that is open to the public with the addition of two-way communication capabilities if granted a future allowance under the Texas Open Meetings Act, but the options for hybrid meetings would be limited by the loss of the flexibility that the exception provided.

The newly created regional flood planning groups and their working subcommittees, for example, have been able to offer increased opportunities for public involvement as well as increased efficiencies because of the elimination of extensive travel time and associated costs for their members. Since their first meetings began in November 2020, the 15 regional flood planning groups have held over 140 public meetings across the state involving over 2,200 cumulative attendees. Without the exception, some planning group members and members of the public that wish to attend the meetings may now be required to travel 200 to 400 miles in some planning regions to participate in regular meetings. A permanent allowance for participation via telephone for in-person and hybrid meetings could lower barriers to public participation and attendance, prevent volunteer fatigue, and save planning group member and TWDB travel costs.

C. Possible Solutions and Impact

The issue of public access to open meetings by telephone could be addressed by a change to Texas Open Meetings Act that allows telephonic participation by members of the public and members of the aforementioned volunteer groups affiliated with the TWDB. Similar types of provisions already exist for some classes of persons; for example, attorneys for a governmental body are specifically allowed to participate in meetings with the governmental body via

telephone (Texas Open Meetings Act § 551.129). The benefit to the agency and the groups previously mentioned is the expanded ability for participation in open meetings. The only potential detriment is that individual members of the public participating via telephone would not be visible, making it more difficult to confirm who they are. No fiscal impact would be anticipated because the technology already exists to allow telephonic participation in open meetings.

3. Desired Future Conditions and Modeled Available Groundwater in Groundwater Management Plans

A. Brief Description of Issue

Statute requires the TWDB to assist GCDs in the development of groundwater management plans. Under Texas Water Code § 36.1072, the TWDB Executive Administrator must approve a management plan submitted by a GCD if it is administratively complete. § 36.1071 defines what information is required in a management plan to be considered administratively complete. Specifically, statute stipulates that districts address DFCs and include MAG in management plans. DFCs and MAG are determined on five-year joint planning cycles by GCDs in groundwater management areas and are subject to change or petition each planning cycle. There is no statutory guidance on which DFCs and MAG volumes should be included and considered in a plan in the circumstances described below.

B. Discussion

There is no statutory guidance on which DFCs and MAG volumes should be included in a groundwater management plan in circumstances where (1) an aquifer was previously relevant for joint planning purposes but is subsequently not, or (2) a DFC is deemed no longer reasonable through a petition process. This issue affects GCDs who are developing plans and the TWDB when assisting districts and reviewing plans for administrative completeness. Lack of guidance results in confusion for districts and the TWDB on which DFCs and MAG volumes considered in a plan meet the standards for administrative completeness. The TWDB has recently encountered both circumstances while assisting districts in developing plans.

C. Possible Solutions and Impact

To better assist GCDs during groundwater management plan development, clarify in statute which DFCs and MAG volumes need to be included and considered in a plan in the event of an aquifer being declared non-relevant during joint groundwater planning or in the event that a DFC is deemed no longer reasonable. A statutory clarification would make the management plan development process more efficient for both GCDs and for the TWDB.

4. Texas Natural Resources Information System Modernization

A. Brief Description of Issue

The current longstanding name “Texas Natural Resources Information System” is well recognized among the community it serves. However, this name no longer describes the core mission and concept of the office. Rebranding TNRIS to a more suitable name such as “Geographic Information Office of Texas” or “Geographic Resources Office of Texas” would be more appropriate.

Additionally, as the state GIO, we have been asked to help designate an authoritative data resource for county boundary lines. Absence of an authoritative, official county boundary geographic dataset for Texas creates spatial alignment issues for planning and executing Next Generation 9-1-1 (emergency service districts), elections (voting districts), and civic services (jurisdictional boundaries, school districts, etc.).

B. Discussion

The mission of TNRIS is to provide a "centralized information system incorporating all Texas natural resource data, socioeconomic data related to natural resources, and indexes related to that data that are collected by state agencies or other entities" (Texas Water Code § 16.021).

After nearly 50 years, the information hosted by TNRIS has morphed to include more statewide and regional geographic data ranging from elevation information and high-resolution imagery to address points and parcel data. These crucial datasets have become the priority while natural resource and socioeconomic information are less often collected or requested.

The progressive role of TNRIS now includes high-priority data acquisition and promoting the use of emerging technologies such as machine learning and cloud infrastructure. These activities promote statewide agency coordination and collaboration, eliminating redundancy and thereby reducing individual costs for acquiring and accessing critical geographic data. The resulting data and information are available to all for use by state agencies and the citizens of Texas.

Via the GIS Solution Group, the coordinating body for GIS activities for the state, TNRIS has been asked to prioritize specific datasets deemed important for emergency management and mitigation. Specifically, the latest request is for an official Texas county boundary dataset, a critical geographic data product that requires authoritative statewide oversite.

Texas county boundaries have long been necessary for jurisdictional assignments related to emergency services, infrastructure oversight, taxing obligations, and voting precincts. County boundary lines support initiatives such as Next Generation 9-1-1 and decennial redistricting. Without an authoritative county boundary dataset or a designated custodian charged with maintaining and disseminating county boundary lines, the accuracy and reliability of this dataset will be greatly diminished and could even be dangerous if not maintained properly in the case of emergency 9-1-1 services. Lack of a controlling, authoritative group will yield multiple versions of this dataset with alignment issues as agencies, regions, districts, or counties attempt to create emergency service or voting boundaries.

C. Possible Solutions and Impact

TNRIS continues to expand its role as a reliable resource to develop and maintain high-priority geographic information that benefits all Texans. Additional direction from state leadership and modernization of our goals and initiatives with a more appropriate name will promote our success. A rebranding will better describe who TNRIS is and what it does, as well as help agencies and the citizens of Texas know where to turn for guidance on geographic data and related information.

Rebranding of a well-recognized organization is not without its challenges. It will take months, maybe years to achieve a full transition, recognition, and acceptance of a name change. The TWDB believes the risk is low and the benefits of being recognized as the geographic information office of Texas will allow the organization to thrive as the authority on geographic data for the state.

Further, on the issue of the county boundary lines, the foreseeable risk is that the general public may assume the dataset represents surveyed lines. It will be imperative to market the dataset as a geographic boundary layer that does not represent legal boundary lines and should not be used in a court of law.

5. Audited Financial Statements for TWDB Financial Assistance Recipients

A. Brief Description of Issue

The TWDB relies on audited annual financial reports of entities in its portfolio to assess the financial health of each organization, as well as the status of compliance with loan or grant agreements. Often, it is challenging to get audited financial reports in a timely manner. While there are statutes requiring audits for most entities, no state entity enforces compliance to ensure timely preparation of audited financial statements. This can cause delays or be a barrier to entities seeking to address essential services through financing programs with the TWDB and other funding agencies.

B. Discussion

Most entities are required to prepare audited financial statements as shown in the table below:

Annual Financial Reports - Due Dates		
Authority Type	**Days Allowed After Fiscal Year End**	**Statutory Citation**
Cities	180	Local Government Code Section 103
Special Water Authority	160	Texas Water Code Section 49.194 (a)
Districts and Authorities	135	Texas Water Code Section 49.194 (h)
All other	120	various or none; contract driven (see **Note 1**)
Single Audits	"...must be submitted within the earlier of 30 calendar days after receipt of the auditor's report(s), or nine months after the end of the audit period."	Office of Management and Budget (OMB) Omni Circular, § 200.512 Report submission.

Note 1: Older loan agreements with the TWDB may cite a 90-day requirement to provide an audit; however, 120 days is provided for all unless a longer period is provided by statute. Your organization may have other timeliness requirements based on other lenders.

As of summer 2021, a significant number of entities in the TWDB's portfolio have not submitted their annual financial reports in a timely fashion, which decreases the timeliness of the agency's insight into the entities' operations and increases the risk that borrower non-compliance issues will not be detected.

C. Possible Solutions and Impact

One solution may be to establish a vendor hold within the Uniform Statewide Accounting System that would stop the flow of state resources to local entities until their audited financial statements are prepared and submitted. Another solution might include requiring another state agency to monitor compliance with statutory audit requirements and assess a fee or financial penalty for late submission.

These possible solutions could result in improved compliance with statutory requirements and provide incentives for entities to produce timely audited financial statements, which could reduce the state's risk by providing information on the borrower's financial condition. Communities will incur a financial cost to produce audited financial statements, but they should be incurring this expense this already.

The ability to receive timely audited financial statements would reduce the amount of time TWDB Financial Compliance staff spend on collecting statements, thus, providing more time to review and analyze the financial statements to assess risks. It would also ultimately benefit the entity since they would be in compliance with existing law and in a better position to receive state financial assistance.

6. Statutory Authority for the TexMesonet

A. Brief Description of Issue

The TexMesonet earth observation network, a data collection network within TWDB Water Science and Conservation, is not explicitly named in statute but is important to understanding water resource data in the state. Initiated after the devastating 2015 Blanco River flood, the TexMesonet provides data that, among other uses, assists with forecasting flood events that can threaten the life and property of Texans, a uniquely valuable purpose. This program is operated within the umbrella authority of Texas Water Code § 16.012 for "studies, investigations, and surveys," but it would benefit from more clearly defined statutory authority and purpose.

B. Discussion

A mesonet is composed of a set of earth observation stations designed to detect and monitor "mesoscale" weather phenomena ranging in size from several miles to hundreds of miles. Such disturbances can include flooding, severe thunderstorms, high winds, droughts, and heatwaves. Data collected from accurate, on-the-ground, deliberately placed stations and shared freely

online through the TexMesonet website makes weather patterns and their effects more easily discernible on a local and regional basis.

The goal of the TexMesonet is to become a true statewide earth observation data collection network. By building partnerships with existing earth observation station owners, installing additional stations to fill gaps in data coverage, and collaborating with local, state, and federal end users of the data and products provided online, the TWDB leads this effort for the state of Texas. Additionally, TexMesonet is a data-centered program, focusing on collecting and aggregating atmospheric and soil data and making it available to the public. In turn, other entities use this data to advance a variety of efforts.

Data disruptions and complete failures of previous weather station networks in Texas and other states can be traced to a lack of network reliability. Without direct authority in statute, concerns for the TexMesonet include fractured statewide leadership amongst partner networks, staffing and budgetary issues, sub-par data quality, and loss of trust from existing data users, including the agricultural irrigators and weather forecasters who have come to rely on TexMesonet data to improve the accuracy of their models.

C. Possible Solutions and Impact

Legislation to codify the TWDB as the lead agency for spearheading the efforts outlined above would provide the necessary certainty to ensure the longevity and reliability of the TexMesonet and the success of its goal to provide high quality atmospheric and soil moisture data and data products for the entire state of Texas. This proposed change would have a positive impact on current stakeholders and interest groups and should result in growing the number of users of the data and related value-added products.

In addition to directing the TWDB to lead this statewide effort, legislation could also establish a stakeholder committee to “make recommendations for optimizing the efficiency and effectiveness of water resource data collection and dissemination as necessary to ensure that basic water resource data are maintained and available for Texas” (Texas Water Code § 16.012(b)(8)). This effort, known as the TexMesonet Advisory Committee, is already underway at the TWDB to gather input from current and potential end users so that network growth, data collection, and product creation continue to serve water users, managers, and planners across all sectors in Texas. Similar to HB 632 (87th Regular Legislative Session), which codifies the Texas Seismic Monitoring Program (TexNet) Technical Advisory Committee, legislation related to a TexMesonet Advisory Committee would formalize stakeholder involvement and firmly establish the TWDB as the supporting entity and state leader for mesonet efforts.

These proposed changes would result in no fiscal impact to the state.

X. Other Contacts

A. Fill in the following charts with updated information on people with an interest in your agency, and be sure to include the most recent email address.

See attached Exhibit 16, TWDB Contacts.

XI. Additional Information

A. Texas Government Code, Section 325.0075 requires agencies under review to submit a report about their reporting requirements to Sunset with the same due date as the SER. Include a list of each agency-specific report that the agency is required by statute to prepare and an evaluation of the need for each report based on whether factors or conditions have changed since the statutory requirement was put in place. Please do not include general reporting requirements applicable to all agencies, reports that have an expiration date, routine notifications or notices, posting requirements, federally mandated reports, or reports required by G.A.A. rider. If the list is longer than one page, please include it as an attachment.

See attached Exhibit 17, Evaluation of Agency Reporting Requirements.

B. Does the agency's statute use "person-first respectful language" as required by Texas Government Code, Section 325.0123? Please explain and include any statutory provisions that prohibit these changes.

This statute is not applicable because the TWDB is not a Health and Human Services Agency.

C. Please describe how your agency receives and investigates complaints about the agency and its operations.

The Internal Audit division, which reports functionally to the Board, has primary responsibility for investigation of all complaints of suspected fraud, waste, or abuse related to agency operations. Internal Audit consults with and coordinates investigative activities with the Office of General Counsel and Human Resources as needed.

Under the TWDB Ethics Policy, adopted by the Board in 2015, employees are responsible for reporting loss, misappropriation or misuse of agency property or allegations of unlawful or fraudulent conduct. Allegations can be reported to Internal Audit through the agency's fraud hotline, or can be submitted by mail or email to TWDB Internal Audit or to the State Auditor's Office. Information on how to report allegations of fraud, waste, or abuse relating to agency operations—either directly to the Internal Audit division or via the SAO fraud hotline—is available on the agency's Fraud, Waste, and Abuse website.

When a report is received, Internal Audit, in determining whether and how to proceed with an investigation, will consider whether: (a) the allegations, if true, constitute fraud or a serious or substantial violation, (b) the information provided is specific enough to be investigated, (c) the subject matter is within the agency's authority to investigate, and (d) the allegation contains, or points to, corroborating evidence that gives the allegation credibility.

If the above criteria are not met, Internal Audit may decline to proceed with a review. Alternative means of dealing with the allegation may be considered. The division's decision is

documented. If the criteria are met, a preliminary review into allegations of fraud or irregularity is conducted to determine if there are reasonable and probable grounds to warrant further investigation. If the division confirms that there is sufficient cause or predication to continue, the Board, Executive Administration, Office of General Counsel, Human Resources as needed, and designated personnel are informed of the status.

Once the investigation is complete, the results are documented and discussed with the Board, Executive Administration, Office of General Counsel, and Human Resources as needed. A memo, outlining the results of the investigation, is also provided to the Board, Executive Administration, Office of General Counsel, Human Resources as needed, the appropriate Deputy Executive Administrator, and designated personnel.

Any decision to prosecute or refer the examination results to the law enforcement and/or regulatory agencies for independent investigation is made in conjunction with Executive Administration, the Office of General Counsel, and Human Resources as needed. Any prosecution activities are managed by the SAO and possibly the Texas Department of Public Safety's Investigation Division, and the Office of the Attorney General.

Human Resources has primary responsibility for management and investigation of employee grievances, which are disputes related to wages, hours, or working conditions. When informal efforts by employees to resolve grievances via their management chain are unsuccessful, written submissions may be provided to Human Resources for resolution. Human Resources and the Office of General Counsel have conducted informal mediation sessions to air and resolve workplace grievances.

Complaints alleging discrimination, retaliation, harassment, or inappropriate behavior in the workplace are investigated by the Office of General Counsel in coordination with Human Resources. Upon conclusion of an investigation, the Office of General Counsel prepares a report outlining the allegations and findings and any violations of TWDB policies. Human Resources briefs the relevant supervisors and managers on the findings, facilitates any disciplinary action deemed appropriate, and provides the complainant with an investigation closure letter that includes a high-level summary of the outcome. The Office of General Counsel also investigates complaints from the public regarding the accessibility of TWDB programs and services and is in the process of developing a policy and procedure for complaints from the public for posting on the TWDB website.

The Office of General Counsel, in coordination with Human Resources, prepares position statements and other responses to complaints filed with external agencies, including the Equal Employment Opportunity Commission and the Texas Workforce Commission Civil Rights Division.

TWDB
Exhibit 18: Complaints Against the Agency — Fiscal Years 2019 and 2020

	Fiscal Year 2019	Fiscal Year 2020
Number of complaints received	4 (IA) 4 (HR)	4 (IA) 2 (HR)
Number of complaints resolved	2 (IA) 4 (HR)	2 (IA) 1 (HR)
Number of complaints dropped / found to be without merit	2 (IA)	2 (IA) 1 (HR)
Number of complaints pending from prior years	0	0
Average time period for resolution of a complaint	70 days	70 days

D. Fill in the following charts detailing your agency's Historically Underutilized Business (HUB) purchases. Sunset is required by law to review and report this information to the Legislature. Sunset is required by law to review and report this information to the Legislature.

TWDB
Exhibit 19: Purchases from HUBs

Fiscal Year 2018

Category	Total $ Spent	Total HUB $ Spent	Percent	Agency Specific Goal	Statewide Goal
Heavy Construction	None	None	N/A	11.2%	11.2%
Building Construction	None	None	N/A	21.1%	21.1%
Special Trade	None	None	N/A	32.9%	32.9%
Professional Services	$537,719	$0.00	0%	23.7%	23.7%
Other Services	$3,647,642	$319,801	14.25%	26.0%	26.0%

Category	Total $ Spent	Total HUB $ Spent	Percent	Agency Specific Goal	Statewide Goal
Commodities	$1,355,157	$420,410	31.02%	21.1%	21.1%
TOTAL	$5,540,519	$940,212	16.97%		

Fiscal Year 2019

Category	Total $ Spent	Total HUB $ Spent	Percent	Agency Specific Goal	Statewide Goal
Heavy Construction	None	None	N/A	11.2%	11.2%
Building Construction	None	None	N/A	21.1%	21.1%
Special Trade	$112	$0.00	0%	32.9%	32.9%
Professional Services	$877,281	$0.00	0%	23.7%	23.7%
Other Services	$4,026,737	$384,736	9.55%	26.0%	26.0%
Commodities	$1,636,224	$592,251	36.2%	21.1%	21.1%
TOTAL	$6,540,356	$976,988	14.94%		

Fiscal Year 2020

Category	Total $ Spent	Total HUB $ Spent	Percent	Agency Specific Goal	Statewide Goal
Heavy Construction	None	None	N/A	11.2%	11.2%
Building Construction	None	None	N/A	21.1%	21.1%
Special Trade	$4,579	$0.00	0%	32.9%	32.9%
Professional Services	$516,498	$0.00	0%	23.7%	23.7%
Other Services	$3,732,685	$226,486	6.07%	26.0%	26.0%
Commodities	$1,583,319	$758,225	47.89%	21.1%	21.1%
TOTAL	$5,837,082	$984,711	16.87%		

E. Does your agency have a HUB policy? How does your agency address performance shortfalls related to the policy? (Texas Government Code, Section 2161.003; TAC Title 34, Part 1, Rule 20.286c)

The TWDB's Historically Underutilized Business (HUB) program and policy is described in the TWDB Purchasing Policies and Procedures, Chapter 2, Section 2.5.

Shortfalls related to policy and program objectives are addressed through numerous efforts, which we outline in our semi-annual supplemental letter accompanying the TWDB HUB report.

F. For agencies with contracts valued at $100,000 or more: Does your agency follow a HUB subcontracting plan to solicit bids, proposals, offers, or other applicable expressions of interest for subcontracting opportunities available for contracts of $100,000 or more? (Texas Government Code, Section 2161.252; TAC Title 34, Part 1, Rule 20.285)

Yes, the TWDB follows the HUB Subcontracting requirements for any contract estimated to be valued at $100,000 or more.

G. For agencies with biennial appropriations exceeding $10 million, answer the following HUB questions.

1. **Do you have a HUB coordinator? If yes, provide name and contact information. (Texas Government Code, Section 2161.062; TAC Title 34, Part 1, Rule 20.296)**

The Agency HUB Coordinator is Jenny Kim, Contract Administration Manager, jenny.kim@twdb.texas.gov, (512) 463-5077.

2. **Has your agency designed a program of HUB forums in which businesses are invited to deliver presentations that demonstrate their capability to do business with your agency? (Texas Government Code, Section 2161.066; TAC Title 34, Part 1, Rule 20.297)**

The TWDB does not have a program specifically related to HUB forums, but the agency has participated in all HUB fairs sponsored by the Comptroller of Public Accounts.

3. **Has your agency developed a mentor-protégé program to foster long-term relationships between prime contractors and HUBs and to increase the ability of HUBs to contract with the state or to receive subcontracts under a state contract? (Texas Government Code, Section 2161.065; TAC Title 34, Part 1, Rule 20.298)**

Yes, the TWDB Mentor-Protégé Program is described in TWDB Purchasing Policies and Procedures, Chapter 2, Section 2.6.

H. Fill in the charts below detailing your agency's Equal Employment Opportunity (EEO) statistics. Sunset is required by law to review and report this information to the Legislature. Please use only the categories provided below. For example, some agencies use the

classification "paraprofessionals," which is not tracked by the state civilian workforce. Please reclassify all employees within the appropriate categories below.

TWDB
Exhibit 20: Equal Employment Opportunity Statistics

1. Officials / Administration

Year	Total Number of Positions	Percent African-American	Statewide Civilian Workforce Percent	Percent Hispanic	Statewide Civilian Workforce Percent	Percent Female	Statewide Civilian Workforce Percent
2018	33	3.03%	8.1%	15.15%	22.4%	48.48%	38.8%
2019	32	3.13%	8.1%	15.63%	22.4%	50%	38.8%
2020	37	2.7%	8.1%	18.92%	22.4%	51.35%	38.8%

2. Professional

Year	Total Number of Positions	Percent African-American	Statewide Civilian Workforce Percent	Percent Hispanic	Statewide Civilian Workforce Percent	Percent Female	Statewide Civilian Workforce Percent
2018	264	10.61%	10.9%	19.32%	20.3%	45.45%	54.5%
2019	276	11.23%	10.9%	20.29%	20.3%	46.74%	54.5%
2020	301	9.97%	10.9%	21.59%	20.3%	48.17%	54.5%

3. Technical – Not Applicable

4. Administrative Support

Year	Total Number of Positions	Percent African-American	Statewide Civilian Workforce Percent	Percent Hispanic	Statewide Civilian Workforce Percent	Percent Female	Statewide Civilian Workforce Percent
2018	27	7.41%	14.3%	22.22%	36.4%	100%	71.6%
2019	26	11.54%	14.3%	26.92%	36.4%	100%	71.6%
2020	29	6.9%	14.3%	24.14%	36.4%	100%	71.6%

5. Service / Maintenance - Not Applicable

6. Skilled Craft - Not Applicable

I. Does your agency have an equal employment opportunity policy? How does your agency address performance shortfalls related to the policy?

Yes, and it is the intent of the TWDB to provide equal employment opportunity for all persons regardless of sex, sexual orientation, race, color, age, gender, religion, national origin, disability, or veteran's status. Physical disability or condition is not considered a factor in employment unless the specific job so warrants. Equal employment opportunity is provided for all persons in

the areas of recruiting, hiring, transfers, promotions, training, compensation, benefits, layoffs, and terminations. Vacancies are filled in accordance with agency job descriptions, State classification system guidelines, and legislative appropriations.

It is the TWDB's policy to regularly inform employees about the complaint process available for handling complaints of discrimination or other issues related to equal employment opportunity. Any employee of the TWDB who has equal employment opportunity-related questions, issues, or complaints may communicate his/her concern to the immediate supervisor, any supervisor in the chain of command, any supervisor within the agency, the Deputy Executive Administrator for Operations and Administration, the General Counsel, the Human Resources director, or any member of the Human Resources or General Counsel staff. All complaints will be handled fairly and expediently. It is the policy of the TWDB that no employee shall suffer reprisal for seeking resolution of a problem through this procedure.

In determining statistically under-represented Equal Employment Opportunity groups, the TWDB uses the Equal Employment Opportunity Commission's Rule of 80. This rule compares the actual number of employees to the expected number of employees based on the available state Civilian Labor Force data for African American, Hispanic, and female employees.

For the purpose of the analysis conducted, a group is considered underutilized when the actual representation in the workforce is less than 80 percent of what the expected number would be based on the Civilian Labor Force. The TWDB reviewed and conducted analysis to determine where underutilization was identified. The utilization analysis of the TWDB for FY 2020 indicated potential underutilization in the categories of Officials/Administrators (A) and Administrative Support (C) in its workforce. The following tables summarize the results of the utilization analysis.

Job Category	**Utilization Analysis Results**
Officials/Administrators (A)	African American (potential underutilization)
Administrative Support (C)	African American and Hispanic (potential underutilization)
Professional (P)	No Underutilization

The job categories showing potential underutilization are Officials/Administrators and Administrative Support. To decrease the potential underutilization for African Americans and Hispanics, the agency has continued to expand its recruitment target areas for vacant positions that fall into those job categories as a part of its overall recruitment process.

XII. Agency Comments

No further comments to add.

XIII. List of Attachments

Listed below are the requested attachments, followed by supplemental attachments.

Attachments Relating to Key Functions, Powers, and Duties

1. If the agency publishes a version of its enabling statute and/or rules, please include an electronic copy.

The TWDB does not publish a version of its enabling statute; rules can be found on the agency's Administrative Rules webpage.

2. Annual reports published by the agency from FY 2018–20.

The following annual reports listed in Exhibit 17 were published by the agency in FY 2018–20:

- SWIFT HUB report
- Internal Audit Annual Report

Other recurring reports required by G.A.A. rider from FY 2018–20:

- Flood Funding Expenditures (biannual)
- Brackish Aquifer Studies Report (odd-numbered years)

3. Internal or external newsletters published by the agency in FY20.

TWDB Internal Newsletters

The monthly TWDB internal newsletter, "Headwaters," was established to keep employees connected and informed about agency and staff news, helpful articles, and upcoming events. It's typically 8 to 12 pages and provided in PDF format on the agency's intranet (iweb).

Recurring sections:

- Welcome Note
- Inquisitive Minds Want to Know
- BEET (Board Employee Engagement Team) Bulletin
- Welcome New Hires
- Traveling Staff
- Heard at the Water Cooler
- Workplace Safety

- Kudos, Kudos, and More Kudos
- Workplace Wellness
- HR Updates
- Mr. Mailbox
- Tech Talk

Feature article examples:

- Cybersecurity Awareness
- Flood Workshop Roadshow
- Office Etiquette Reminders
- State Employee Charitable Campaign
- Service Awards

TWDB External E-Newsletters

- September 2019
- October 2019
- November 2019
- December 2019
- January 2020
- February 2020
- March 2010
- April 2020
- May 2020
- June 2020
- July 2020
- August 2020

4. List of studies that the agency is required to do by legislation or riders.

Val Verde County Groundwater Study: report identifying possible groundwater use planning strategies, including and prioritizing best management practices for drought scenarios, based on a previous study conducted by the TWDB in 2018 regarding groundwater resources in Val Verde County; as specified in the 87th General Appropriations Act, Article VI, Page VI–62, Rider 25, the TWDB, the TPWD, or the board of a GCD in the county may also develop associated guidelines or standards for groundwater use.

For a list of other legislative reports required by legislation, see Exhibit 17.

5. List of legislative or interagency studies relating to the agency that are being performed during the current interim.

Val Verde County Groundwater Study: report identifying possible groundwater use planning strategies, including and prioritizing best management practices for drought scenarios, based on a previous study conducted by the TWDB in 2018 regarding groundwater resources in Val Verde County; as specified in the 87th General Appropriations Act, Article VI, Page VI–62, Rider 25, the TWDB, the TPWD, or the board of a GCD in the county may also develop associated guidelines or standards for groundwater use.

For a list of other legislative reports required by legislation, see Exhibit 17.

6. List of studies from other states, the federal government, or national groups/associations that relate to or affect the agency or agencies with similar duties or functions. Provide links if available.

A list has not been included because such research would require considerable time and effort to compile given the scope of the TWDB's programs and functions

7. If applicable, a list describing the type of personal information of license holders the agency publishes on its website. Please also explain if and how license holders can opt out of this publication.

N/A

Attachments Relating to Policymaking Structure

8. Biographical information (e.g., education, employment, affiliations, and honors) or resumes of all policymaking body members.

Brooke T. Paup

Brooke Paup has served as a Board member of the TWDB since February 22, 2018. Governor Greg Abbott designated her as Chairwoman on April 22, 2021.

Prior to her appointment to the Board, Paup served as the director of legislative affairs for the Texas Comptroller of Public Accounts for the previous three years. While there, she led a team of legislative professionals to address statutory tax reforms.

Paup is formerly the deputy division chief of intergovernmental relations and former special assistant for policy and research for the Office of the Attorney General, where she worked on legislative issues, special litigation, and public finance-notably HB 4 and SJR 1 in the 83rd Regular Legislative Session, which created the SWIFT and the SWIRFT. Paup has 15 years of state government experience.

She is a member of the State Bar of Texas and Symphony League and a board member of the Wine and Food Foundation of Texas Auction Committee. Paup earned a bachelor of arts from Texas A&M University and a juris doctor from Texas Tech School of Law.

She lives in Austin with her husband, Spivey, and their two children, Henry and Heidi.

Kathleen Jackson, P.E.

Kathleen Jackson was reappointed to the TWDB by Governor Greg Abbott on March 9, 2017. She was appointed to the Board by Governor Rick Perry on March 18, 2014.

Jackson has a diverse background representing agricultural, environmental, industrial, and wholesale-supply interests, which includes developing and implementing water management strategies for Southeast Texas. As a registered professional engineer, Jackson served as public affairs manager for one of the world's largest petroleum and petrochemical producers.

Additionally, she was involved in production agriculture with her late husband, who ran a cattle operation and farmed rice. She served as a past member of the Lower Neches Valley Authority Board of Directors, the Texas Water Conservation Association, and participated on the Sabine and Neches Rivers Bay and Estuary Environmental Flows Assessment Program Stakeholders Committee.

She is also a board member and past president of the Lamar Institute of Technology Foundation, a sustaining member of the Junior League of Beaumont, a member of the Texas Farm Bureau, past president of the American Cancer Society of North Jefferson County, and a past board member of Junior Achievement of the Golden Triangle.

Jackson received a bachelor's degree in chemical engineering from North Carolina State University.

Jackson has three children, sixth-generation Texans who all reside and work in Texas, and four grandchildren. She is a long-time resident of Beaumont.

9. Board training manuals and copies of any policies related to the board’s duties and responsibilities.

Texas Water Code § 6.062 requires that a person who is appointed to and qualifies for office as a member of the Board may not vote, deliberate, or be counted as a member in attendance at a meeting of the Board until the person completes the following training program:

(1) the legislation that created the board;

(2) the programs operated by the board;

(3) the role and functions of the board;

(4) the rules of the board, with an emphasis on the rules that relate to disciplinary and investigatory authority;

(5) the current budget for the board;

(6) the results of the most recent formal audit of the board;

(7) the requirements of:

(A) the open meetings law, Chapter 551, Government Code;

(B) the public information law, Chapter 552, Government Code;

(C) the administrative procedure law, Chapter 2001, Government Code;

(D) other laws relating to public officials, including conflict of interest laws; and

(8) any applicable ethics policies adopted by the board or the Texas Ethics Commission.

Attachment 9 includes the last new Board member training that was conducted in March 2018; it included the following topics:

- Administrative Procedure Act
- Open Meetings Act
- Public Information Act
- Ethics and Conflicts of Interest
- Public Funds Investment Act

Extensive training materials on TWDB programs and other topics from March 2018 are available upon request.

10. Employee manuals and copies of any policies related to staff's duties and responsibilities.

Attachment 10 includes a list of TWDB's employee manuals, policies, and procedures; these documents are available upon request.

11. Copies of any other significant policies adopted by the board.

Attachment 11 includes the following policies:

- A Resolution of the TWDB Separating the Responsibilities of the Board and Staff
- A Resolution of the TWDB Assigning Certain Duties of the Development Fund Manager to the Executive Administrator
- A Resolution of the TWDB Establishing Parameters Regarding the Future Management of the SWIFT Program
- A Resolution of the TWDB Authorizing the Executive Administrator to Approve and Execute Certain Board Documents

12. Agency's Legislative Appropriations Request for FY 2022–23.

Legislative Appropriations Request, Fiscal Years 2022–2023

13. Annual financial reports from FY 2018–20.

Annual Financial Report for the fiscal year ended August 31, 2020

Annual Financial Report for the fiscal year ended August 31, 2019

Annual Financial Report for the fiscal year ended August 31, 2018

14. Operating budgets from FY 2018–20.

Annual Operating Budget for Fiscal Year 2018

Annual Operating Budget for Fiscal Year 2020

15. If applicable, a list of all contracts above $1 million. Please include a brief explanation of the contract, as well as the amount and term of the contract. Do not include purchase orders in this list.

See Attachment 15; the list does not include construction contracts funded through the TWDB's financial assistance programs.

Attachments Relating to Organization

16. If applicable, a map to illustrate the regional boundaries, headquarters location, and field or regional office locations.

The following maps are attached:

- Attachment 16a: TWDB Headquarters and Regional Office Locations
- Attachment 16b: Regional Water Project Development Teams with Regional Water Planning Areas
- Attachment 16c: Regional Flood Planning Areas

Other TWDB maps are available on the TNRIS website.

17. Any flowcharts showing the operations of the agency, such as complaint resolution processes, disciplinary or enforcement procedures, etc.

See Attachment 17 for the agency's Fraud, Waste, Abuse Hotline Investigative/Complaint Process flowchart.

18. If applicable, a list and brief explanation of all active memorandums of understanding and information sharing agreements the agency has entered into. Indicate whether these are required by statute, rule, or something else.

See Attachment 18.

Attachments Relating to Agency Performance Evaluation

19. Quarterly performance reports completed by the agency in FY 2019–20.

See Attachments 19a and 19b.

20. Performance reports presented to the agency's board of directors in FY 2018–20, if different from the reports in Attachment 16.

N/A

21. Performance reports submitted to the Legislative Budget Board from FY 2018–20.

See Attachments 21a through 21i.

22. Any recent studies on the agency or any of its functions conducted by outside management consultants or academic institutions.

Freese and Nichols, Inc., is under contract to review current TWDB engineering processes in Water Supply and Infrastructure, Regional Water Project Development, to identify potential efficiencies and recommendations for improvement. The firm is also assisting the TWDB with evaluating potential management tools to track the status of financial assistance projects.

23. Agency's current internal audit plan.

TWDB Annual Audit Plan for FY 2021

24. Agency's current strategic plan.

TWDB Strategic Plan for Fiscal Years 2021–2025

25. List of internal audit reports from FY 2016–20 completed by or in progress at the agency.

All final Internal Audit Reports are posted on the TWDB's Internal Audit website.

- 2021_07 Review of Select Loan Closing Processes – In progress
- 2021_06 Review of Select Cybersecurity Processes – In progress
- 2021_05 Review of Quarterly Investment Reports
- 2020_06 Review of Contract Solicitation and Selection Processes

- 2020_05 Review of Compliance with the Public Funds Investment Act
- 2019_07 Review of Contract Management, Compliance with SB 20
- 2019_05 Review of Quarterly Investment Reports
- 2018_08 Review of State-Funded Grant Agreements and Contracts
- 2018_05 Review of Compliance with the Public Funds Investment Act
- 2017_07 Review of Quarterly Investment Reports
- 2017_05 Review of Debt Service Payments
- 2016_05 Review of Compliance with the Public Funds Investment Act

26. List of State Auditor reports from FY 2016–20 that relate to the agency or any of its functions.

All State Auditor Reports are posted on the State Auditor's Office website:

- 21-026 An Audit Report on Selected Loan Administration Processes at the Water Development Board
- 21-023 A Report on Agencies', Higher Education Institutions', and Community Colleges' Compliance with Public Funds Investment Act and Rider 5, General Appropriations Act, Reporting Requirements
- 19-706 A Classification Compliance Audit Report on Information Technology Positions at Natural Resources Agencies
- 19-027 A Report on the Implementation Status of Prior State Auditor's Office Recommendations
- 19-019 A Summary Report on Senate Bill 1289 Provisions Related to the Water Development Board's Financial Assistance of Construction Projects
- 18-030 An Audit Report on Selected Groundwater Conservation Districts
- 18-029 A Report on Agencies', Higher Education Institutions', and Community Colleges' Compliance with Public Investment Reporting Requirements
- 18-021 A Report on The Implementation Status of Prior State Auditor's Office Recommendations
- 18-314 State of Texas Federal Portion of the Statewide Single Audit Report for the Year Ended August 31, 2017

- 18-555 State of Texas Financial Portion of the Statewide Single Audit Report for the Year Ended August 31, 2017
- 16-039 An Audit Report on The State Water Implementation Revenue Fund for Texas at the Water Development Board
- 16-027 A Report on Agencies', Higher Education Institutions', and Community Colleges' Compliance with Public Investment Reporting Requirements
- 16-021 A Report on the Implementation Status of Prior State Auditor's Office Recommendations

27. Any customer service surveys conducted by or for your agency in FY 2019–20.

The FY 2019–2020 Report on Customer Service can be found in the TWDB's Strategic Plan for Fiscal Years 2021–2025.

28. Any reports created under Texas Government Code, Section 2110.007, regarding the usefulness and costs of the agency's advisory committees.

N/A

29. A description of the agency's review of existing rules as required by Texas Government Code, Section 2001.039, and for the last eight years, a brief description of the rules reviewed by date and the result the review.

The TWDB does not have an established process for reviewing rules every four years in accordance with Texas Government Code § 2001.039, but it does periodically publish amendments to its existing rules, adopt new rules as required by legislation, and repeal rules that are no longer in use. Ideas for amendments to existing rules are tracked by the Office of General Counsel and periodically presented to the Board for consideration. Rules have also been repealed from time to time when they are no longer in use. A recent example of a rule repeal occurred at the July 22, 2021, Board meeting when the Board authorized the repeal of 31 Texas Administrative Code, Chapter 370, which contains the rules for the no-longer-active Colonia Plumbing Loan Program.

Supplemental Attachments

- Exhibit 3, Key Datasets
- Attachment VI.A. TWDB Organizational Chart
- Attachment VII.A. Financial Assistance Bonding and Financing Authorities
- Attachment VII.C. Finance Metrics
- Attachment VII.B. TWDB Funding Commitments Since Inception
- Exhibit 16, TWDB Contacts
- Exhibit 17, Evaluation of Agency Reporting Requirements