

NOTICE OF OPEN MEETING

BRAZOS G REGIONAL WATER PLANNING GROUP

10:00 a.m.

May 22, 2019

Brazos River Authority Central Office
4600 Cobbs Drive, Waco, Texas 76710

AGENDA

- 1. CALL MEETING TO ORDER**
- 2. INVOCATION**
- 3. NOTICE OF MEETING**
- 4. ATTENDANCE AND ANNOUNCEMENTS**
- 5. PUBLIC INPUT - Public questions and comments on agenda items or water planning issues (*limited to 5 minutes each; public must fill out a 'Request to Speak' form prior to the discussion of the agenda item*)**
- 6. PROGRAM**
 - 6.1. Report and possible discussion on report from Texas Water Development Board (TWDB) staff.**
 - 6.2. Report, discussion and possible action from the Brazos G Water Policy Committee.**
 - 6.3. Report, discussion and possible action from the Brazos G Scope of Work Committee.**
 - 6.3.1. Report, discussion and possible action on Chapter 7 statement concerning drought management as a water management strategy.**
 - 6.4. Discussion and possible action on HDR planning tasks.**
 - 6.4.1. Presentation on updated water management strategy evaluations.**
 - 6.4.2. Presentation of the timeline to develop the 2021 Brazos G Regional Water Plan.**
 - 6.4.3. Discussion and possible action on other HDR planning tasks.**
 - 6.5. Report and possible discussion on Atlas 14 Rainfall Study.**
 - 6.6. Report and possible discussion on updates from other regional water planning groups (Regions B, C, F, H, K, L & O).**
 - 6.7. Report and possible discussion on Groundwater Management Area (GMA) activities.**
 - 6.8. Report and possible discussion on agency communication and information.**
 - 6.9. Report and possible discussion on Brazos G Budget.**

6.10. Discussion and possible action on report by Brazos G Administrator.

6.11. Report and possible discussion from Brazos G Chair.

7. DISCUSSION AND POSSIBLE ACTION ON NEW BUSINESS TO BE CONSIDERED AT NEXT MEETING

8. CONFIRMATION OF NEXT MEETING DATE

9. ADJOURN

Agenda items may be considered, deliberated and/or acted upon in a different order than set forth above.

Meeting agendas and materials are available online at www.brazosqwater.org

For additional information, please contact

STEVE HAMLIN @ 254-761-3172, Brazos River Authority, Administrative Agent

Region G TWDB Update May 22, 2019

1. Recent Communications from TWDB

- Uniform Standards adoption by TWDB Board. (February 28th, 2019)
- Reminder that use of state funds for travel expenses are reimbursed at the same rate for state employees and must be in compliance with Texas Government Code 660.007 (Conservation of State Funds). (March 29th, 2019)
- DB22 Data Entry Upcoming Deliverable Reminders & Data Entry Information
 - **May 31, 2019** - DB22 Water User Group (WUG) water supply needs data will be used for the socioeconomic impact analysis report.
 - **March 3, 2020** – Initially Prepared Plans and Water Right Data Collection spreadsheets were due.
- An updated outline Drought Template is now available on our 5th cycle working documents page under Task 7. This is from Section 7 of Exhibit C (April 10th, 2019)
- New RWP Education Material
 - RWPG Do's and Don'ts
 - SWIFT Prioritization

Region G TWDB Update May 22, 2019

1. Recent Communications from TWDB, continued

- RWPG Do's and Don'ts
 - The Do's covers the background of the RWPG, including:
 - Completing the Regional Water Plan
 - Featuring representation from diverse group of stakeholders
 - Conducting open and participatory meetings
 - Adhering to guidelines in statute, code and contract
 - The Don'ts cover tasks outside of the RWPG authority
 - Lack of authority to implement strategies or projects
 - Lack of authority to perform regulatory action
 - Do not plan with the environment as a water user group
 - Lack of authority to issue or modify groundwater permits
 - Lack of authority to issue or modify surface water permits

Region G TWDB Update May 22, 2019

1. Recent Communications from TWDB, continued

- SWIFT Prioritization is the process which determines which projects receive invitations to submit full financial assistance applications.
 - Only applied to state water plan recommended projects for which an abridged application for SWIFT funding has been submitted
 - TWDB will solicit SWIFT abridged applications up to twice a year
 - If two or more projects receive the same state-level priority ranking, priority will be given to the project with the highest water conservation score. If a tie still remains, priority will be given to the project with the highest emergency need score.
 - Based on set of ten criteria, outlined in 31 TAC §363.1304

Region G TWDB Update May 22, 2019

2. Socioeconomic analysis “as of date” and planning group action

- Socioeconomic impact assessments of not meeting identified water needs are required by rule (31 TAC 357.33(c) and 357.40(a)).
- This cycle, TWDB will conduct the socioeconomic impact analysis of not meeting identified water needs for inclusion in the 2021 Initially Prepared Regional Water Plans. It is optional to utilize the TWDB analysis, however an analysis must be performed and included in the regional water plans.
- An “as of” date (**May 31, 2019**) for needs in the state water planning database (DB22) to be utilized for the analysis is necessary for TWDB staff to complete the analysis and reports by the end of 2019.
- **Region G requested TWDB to perform the socioeconomic Impact Analysis on May 9th, 2019.**

Region G TWDB Update May 22, 2019

3. 2018 Rain Catcher Awards

- The Texas Water Development Board's Texas Rain Catcher Award is a rainwater harvesting competition and recognition program established October 1, 2007, to promote technology, educate the public, and to recognize excellence in the application of rainwater harvesting systems in Texas.
- This year's recipients include:
 - **FirstBank Southwest Amarillo:** The newly built bank collects rainwater through permeable pavers and stores the harvested water underground.
 - **Do/Peters-Do Residence:** The Do/Peters-Do family installed a rainwater harvesting system as the primary potable water supply for their home.
 - **Grand Prairie Armed Forces Reserve Complex:** A rainwater harvesting system installed to replace drinking water for vehicle washing in a nationwide pilot.
 - **Upper Guadalupe River Authority's (UGRA) EduScape:** An educational landscape featuring water-conserving plants and the collection of rainwater, air-conditioner condensate, and stormwater.

Region G TWDB Update May 22, 2019

4. Drought Preparedness Council

- The Drought Preparedness Council met on the 16th of March, 2019 and approved submitting recommendations to the RWPGs.
- The recommendations are being finalized by the counsel and are expected to be provided to planning groups in the near future.
- The council will provide the recommendations in the form of a letter to each RWPG.

Region G TWDB Update May 22, 2019

5. Legislative Update from Texas' 86th Session

Planning-related Bills

- **HB 723** (Larson)/**SB 724** (Perry) Relating to a requirement that the Texas Commission on Environmental Quality obtain or develop updated water availability models for certain river basins
- **HB 807** (Larson) Relating to the state and regional water planning process
- **SB 1583** (Hughes)/**HB 4458** (Rodriguez) Relating to the sources of supply of water for certain municipally owned water utilities
- **SB 2067** (Menendez) Relating to the matters to be considered in developing the state water plan

Region G TWDB Update May 22, 2019

5. Legislative Update from Texas' 86th Session

Flood Planning and Funding Bills

- **SB 7** (Creighton) Relating to flood control planning and the funding of flood planning, mitigation, and infrastructure projects
- **SB 8** (Perry) Relating to state and regional flood planning
- **HB 13** (Phelan) Relating to flood planning, mitigation, and infrastructure projects; making an appropriation
- **HJR 4** (Phelan) Proposing a constitutional amendment providing for the creation of the flood infrastructure fund to assist in the financing of drainage, flood mitigation, and flood control projects

Regional Water Planning Groups in Texas: What They Do and Don't Do

Texas has 16 regional water planning groups (RWPG), one for each designated regional water planning area (A–P). The RWPGs have many responsibilities; however, they have a limited scope and authority. The bottom-up approach to the planning process was designed to focus RWPGs on the identification of water needs (potential shortages) and feasible water management strategies to ensure there are adequate water supplies in times of drought.

It is important to recognize that regional water plans (RWP) are high-level, long-term (50-year) water supply plans and that individual water management strategies and projects often require additional detailed evaluations by the project sponsor¹ prior to permitting and implementation. This document is intended to help the public understand the RWPGs' role.

What RWPGs Do

RWPGs are tasked to develop a 50-year RWP that serves the entire region and takes into consideration the water needs of all water use categories² within the region. RWPs must reflect and respond to changes in population, water supplies, technological improvements, economic shifts, project viability, and state policy.

On average, each RWPG consists of roughly 20 voluntary voting members representing a variety of 12 interest categories required by statute. Members must represent their interest category in the planning process. Local water plans developed by local entities must also be considered during plan development.

The RWPGs conduct their work during public meetings in an open and participatory manner and hold public hearings during the development of their RWPs. Planning group members approve draft plans and adopt final plans by voting at open meetings in accordance with each group's bylaws. Once the RWPG adopts its final RWP, the plan is sent to the TWDB for approval.

The adopted RWPs must meet requirements outlined in the [Texas Water Code](#), [TWDB Administrative Rules](#), and the TWDB contractual planning grant [scopes of work](#) (SOW) and [guidance documents](#). These documents identify the scope of water management strategies that must be considered and provide limitations on infrastructure and components that may not be included in the RWPs. RWPGs must also manage the development of their RWP within their allocated budget. Development of the RWPs are funded primarily through legislative appropriations administered by the TWDB. The TWDB grant contracts allocate specific funding amounts to each RWPG and each SOW task.

¹ A project sponsor, such as a utility or wholesale water provider, is an entity identified in the RWP that would take further action to implement, including paying for, water management strategy projects. Project sponsors designated in RWPs do not restrict the project to only being implemented by that entity in the future.

² Categories of water use planned for in the regional water planning process include municipal, manufacturing, irrigation, steam-electric power generation, mining, and livestock.

The RWPGs must complete the following 12 tasks to develop their RWP:

1. Describe the water planning area
2. Quantify current and projected population and water demand over a 50-year planning horizon
3. Evaluate and quantify current water supplies and source availability*
4. Identify surpluses and needs (potential shortages)
5. Identify, evaluate, and recommend water management strategies to meet the needs*
6. Evaluate impacts of the RWP and describe how the plan is consistent with long-term protection of the state's water, agricultural, and natural resources
7. Develop drought response information and recommendations
8. Recommend regulatory, administrative, and legislative changes
9. Describe how sponsors of water management strategies will finance projects
10. Describe the status of project implementation in the regional planning area and impediments to implementation and provide a summary of how the RWP differs from the previous RWP
11. Prioritize the recommended projects in the RWP
12. Adopt the plan, ensuring the state required level of public participation in the process*

Examples of What RWPGs Don't Do

RWPGs do not have the authority or financial means to implement the water management strategies or projects recommended in the RWPs. RWPGs also do not have authority to provide permits for the projects recommended in the plan. Project sponsors are responsible for implementing projects.

RWPGs are not regulatory bodies. They do not have the ability to develop, modify, or enforce compliance with federal, state, county, or local statutes or ordinances.

Although they must consider environmental requirements, RWPGs do not specifically plan (identify water supplies, demands, or resulting needs) for the environment as a water user group (WUG). The categories of water use for WUGs are defined by TWDB rules (see footnote 2). It is these categories of use for which water needs are identified and water management strategies recommended. However, environmental factors such as instream flows and bay and estuary inflows must be considered when evaluating water management strategies during development of the RWPs. Such consideration must be consistent with the Texas Commission on Environmental Quality (TCEQ) environmental flow standards where adopted.

RWPGs do not have the authority to issue or modify groundwater production permits. RWPGs must utilize groundwater availability resulting from the groundwater management area (GMA) joint planning process, [i.e., modeled available groundwater (MAG) based on desired future conditions (DFC)], when developing their RWP. RWPGs may not modify the DFC or MAG.³ Only groundwater districts in GMAs can modify DFCs.

RWPGs do not have the authority to issue or modify surface water rights, including those regarding reuse. TCEQ is the agency responsible for surface water rights in Texas.

For additional information on the regional water planning process and current activities, please call 512-475-2057 or visit our website at www.twdb.texas.gov/waterplanning/rwp/index.asp.

* These tasks are typically associated with the largest budgets.

³ Except for in a regional water planning area with no groundwater conservation districts or under an approved MAG peak factor or MAG reallocation in accordance with TWDB rules and contract guidance processes.

State Water Implementation Fund for Texas (SWIFT) Project Prioritization

SWIFT Program Overview

The State Water Implementation Fund for Texas (SWIFT) was created by the Texas Legislature to provide affordable and ongoing state financial assistance for projects in the state water plan. The program helps communities develop cost-effective water supplies by providing low-interest loans, extended repayment terms, deferral of loan repayments, and incremental repurchase terms.

Eligible projects are recommended water management strategy projects (WMSP) with an associated non-zero capital cost in the most recently adopted state water plan at the time abridged applications are due to the Texas Water Development Board (TWDB) for consideration. The SWIFT abridged application collects the information necessary for TWDB staff to review and rank projects based on the prioritization system described in [31 Texas Administrative Code \(TAC\) § 363.1303](#) and criteria listed in [31 TAC § 363.1304](#).

Following review and prioritization of the abridged applications, the Board considers the prioritization and then establishes the funds available by category, the structure of financing, and the terms of any subsidy. Invitations to submit full financial assistance applications are extended to those projects within the limits of available funding.

What is the SWIFT project prioritization process?

SWIFT project prioritization occurs at two levels: regional and state (Figure 1).

At the regional level, the 16 regional water planning groups (RWPG) prioritize all recommended WMSPs in their regional water plans every five-year cycle using [uniform standards](#) developed by a stakeholder committee. [Texas Water Code \(TWC\) Section 15.436](#) summarizes the minimum criteria that must be considered by the RWPGs in prioritization, which include the following:

1. The decade of need
2. The feasibility of the project
3. The viability of the project
4. The sustainability of the project
5. The cost-effectiveness of the project

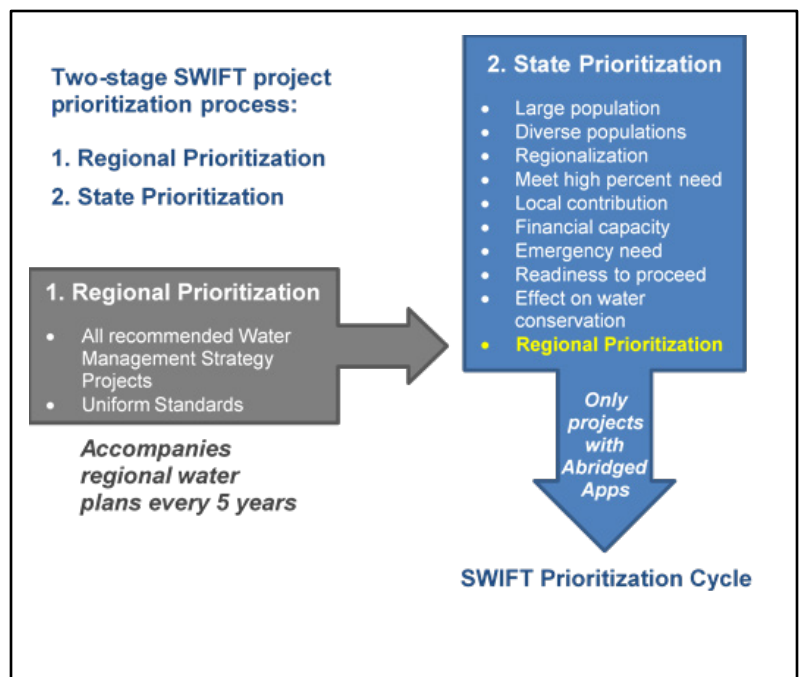


Figure 1: SWIFT project prioritization process summary

The regional prioritization criteria and scoring are further defined in the [uniform standards](#). The final product is a prioritized list of recommended WMSPs for each RWPG that is submitted to the TWDB along with the final adopted regional water plan. The regional prioritization of each project is incorporated into the state prioritization based on its relative percentile within the overall rankings of all other projects *within that region*.

The state prioritization is only applied to state water plan recommended projects for which an abridged application for SWIFT funding has been submitted. The TWDB will solicit SWIFT abridged applications up to twice a year. The state prioritization system is based on [TWC Section 15.437](#) and TWDB administrative rules. The TWDB's SWIFT rules were developed with significant stakeholder input and adopted in November 2014.

State-level prioritization criteria outlined in [31 TAC § 363.1304](#) include the following:

1. The population served by the project when fully operational
2. Whether the project serves a diverse urban and rural population
3. Whether the project provides regionalization
4. The percentage of water supply needs met by the project within the first decade
5. Local contributions to the project
6. Financial capacity of the applicant to repay
7. Whether the project addresses an emergency need
8. Whether the project is ready to proceed with implementation or construction
9. Demonstration or projected effect of the project on water conservation
10. The priority ranking assigned to the project by the applicable RWPG

If two or more projects receive the same state-level priority ranking, priority will be given to the project with the highest water conservation score. If a tie still remains, priority will be given to the project with the highest emergency need score.

Additional Resources

Uniform standards for regional-level project prioritization:

www.twdb.texas.gov/financial/programs/swift/doc/HB_4_SHC_Uniform_Standards.pdf

Final prioritizations of recommended WMSPs in the 2016 regional water plans, as submitted by the RWPGs:

www.twdb.texas.gov/waterplanning/rwp/plans/2016/2016_Project_PrioritizationList.pdf


SWIFT program information sheet:

www.twdb.texas.gov/publications/shells/swift_info_sheet.pdf

SWIFT state-level prioritization point system:



www.twdb.texas.gov/financial/programs/swift/doc/Prioritization_Summary.pdf

For specific questions on the SWIFT program, please contact Financial_Assistance@twdb.texas.gov or visit www.twdb.texas.gov/financial/programs/SWIFT.



Report from Water Policy Committee
Agenda Item 6.2

May 22, 2019



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Topics for Today


- Report from May 1, 2019 Water Policy Committee Meeting
- No action today



May 1, 2019 Water Policy Committee Meeting



- Process for identifying and developing policy recommendations
 - Assign specific topics from 2016 Plan to committee members to update
 - Public request for topics from list of Brazos G interested parties – **July 31, 2019**
 - Topics suggested by Brazos G members
- Process for identifying Stream Segments of Unique Ecological Value
 - Only consider if specific request brought to Brazos G
- Process for identifying Unique Reservoir Sites
 - Only recommend if requested by local project sponsor
 - Request specific direction from local sponsor after a reservoir strategy is recommended
- Potential policy topics for next meeting
 - TWDB scoping vs Texas Administrative Code requirements
 - 2016 topics revisited after revision by committee members





**Report from SOW
Committee**
Agenda Item 6.3

May 22, 2019



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Topics for Today

- Report from April 24, 2019 Scope of Work Committee Meeting
- Suggested Action: adopt language regarding Drought Management as a Water Management Strategy



April 24, 2019 Scope of Work Committee Meeting

- Reviewed Chapter 7 requirements (presented at March 20, 2019 Brazos G meeting)
- Provided direction to HDR for specific Chapter 7 sections
 - Memo outlining approach is included in packet
- Actions taken:
 - Section 7.5. Region-Specific Drought Response Recommendations
 - [Region-Specific Drought Response Recommendations](#)
 - *Draw on information from Section 7.2 (review of drought contingency plans) to select recommended triggers and actions for surface water sources and groundwater sources.*
 - [Region-Specific Drought Contingency Plans](#)
 - *Pending consent by the cities, present the drought contingency plans of the Cities of Waco and Abilene as water user groups supplied by a single source (Waco) and multiple sources (Abilene).*
 - Section 7.6. Drought Management Water Management Strategies
 - *Proposed language for Brazos G RWPG adoption at May 22, 2019 meeting.*



Suggested Action

“The Brazos G Regional Water Planning Group adopts the following position regarding drought management as a water management strategy for inclusion in section 7.6 of the 2021 Brazos G Regional Water Plan.

‘The regional water plan is developed to meet projected water demands during a drought of severity equivalent to the drought of record. Brazos G sees the purpose of the planning as ensuring that sufficient supplies are available to meet future water demands. For this reason, drought management recommendations have not been made by Brazos G as a water management strategy for specific WUG needs. Reducing water demands during a drought as a defined water management strategy does not ensure that sufficient supplies will be available to meet the projected water demands; but simply eliminates the demands. While Brazos G encourages entities in the region to promote demand management during a drought, it should not be identified as a “new source” of supply. Recommending demand reductions as a water management strategy is antithetical to the concept of planning to meet projected water demands. It does not make more efficient use of existing supplies as does conservation, but instead effectively turns the tap off when the water is needed most. It is planning to not meet future water demands.

While Drought Management WMS are not supported by the RGWPG, DCPs are encouraged for all entities and the region supports the implementation of the drought responses outlined in these DCPs when corresponding triggers occur. While the relief provided from these DCP responses can prolong supply and reduce impacts to communities, they are not considered to be reliable for all entities under all potential droughts.’”



Memorandum

Date: April 16, 2019, updated May 8, 2019

Project: 2021 Brazos G Regional Water Plan

To: Scope of Work Committee of the Brazos G Regional Water Planning Group

From: David D. Dunn, PE

Subject: **Requirements for Chapter 7 – Drought Response Information, Activities and Recommendations**

In accordance with TWDB guidance, Chapter 7 of the Brazos G 2021 Plan will summarize a considerable amount of information regarding droughts in the Brazos G Area and local and regional responses to drought. The TWDB has prepared a template for Chapter 7 (Attachment A), which outlines the information required. This memorandum identifies and discusses HDR's proposed approach to meeting those requirements, and identifies specific items requiring direction from the Brazos G Regional Water Planning Group (Brazos G). Some of the requirements are strictly technical in nature and do not require Brazos G direction. Others require some direction from Brazos G, as will be discussed below.

HDR will discuss this information during the April 24, 2019 Scope of Work Committee meeting and request specific guidance from the committee regarding sections 7.5, 7.6 and 7.7, and other guidance and direction the committee wishes to provide.

7.1 Drought(s) of Record in the Regional Water Planning Area

HDR will compile information for this section and present it at a future Brazos G meeting. This section will not require direction from the committee.

7.2 Current Drought Preparations and Response

HDR will compile information for this section and present it at a future Brazos G meeting. This section will not require direction from the committee.

7.3 Existing and Potential Emergency Interconnects

HDR will compile information for this section and present it at a future Brazos G meeting. This section will not require direction from the committee. After HDR has compiled this information, a confidential memorandum will be developed for submittal to the TWDB separate from the 2021 Brazos G Plan. This memorandum will contain confidential information concerning the locations of potential emergency interconnections.

Approval of the memorandum was to be done in a closed meeting, but recent guidance from the TWDB indicates that this may be in violation of the Texas Open Meetings Act and an approach other than a closed meeting may be required. HDR will coordinate with the TWDB and BRA regarding the proper venue for approval of the confidential memorandum.

Non-confidential summary information from this activity, such as numbers of connections and names of suppliers and recipients will be presented in Chapter 7.

7.4 Emergency Responses to Local Drought Conditions or Loss of Municipal Supply

HDR will compile information for this section and present it at a future Brazos G meeting. This section will not require direction from the committee.

7.5 Region-Specific Drought Response Recommendations and Model Drought Contingency Plans

Region-Specific Drought Response Recommendations

HDR's suggested process is to draw on information from Section 7.2 to select recommended triggers and actions for surface water sources and groundwater sources.

Region-Specific Model Drought Contingency Plans

Brazos G is to develop a minimum of two model drought contingency plans. In past planning cycles, Brazos G has presented the plans developed by the City of Abilene (a utility relying on multiple sources) and the City of Waco (a utility relying on a single source) as model plans for others in the Brazos G Area to consider. HDR recommends this approach with the concurrence of Abilene and Waco.

HDR requests the committee's concurrence with the approach described above for Section 7.5.

7.6 Drought Management Water Management Strategies

In past planning cycles, Brazos G has not recommended drought management as a water management strategy because it does not create an additional supply of water nor does it utilize water more efficiently like conservation. It simply removes a portion of a demand during drought. Past Brazos G plans have included the following language to explain why Brazos G does not consider drought management to be a viable water management strategy to meet future water demands.

"The regional water plan is developed to meet projected water demands during a drought of severity equivalent to the drought of record. Brazos G sees the purpose of the planning as ensuring that sufficient supplies are available to meet future water demands. For this reason, drought management recommendations have not been made by Brazos G as a water management strategy for specific WUG needs. Reducing water demands during a drought as a defined water management strategy does not ensure that sufficient supplies will be available to meet the projected water demands; but simply eliminates the demands. While Brazos G encourages entities in the region to promote demand management during a drought, it should not be identified as a "new source" of supply. Recommending demand reductions as a water management strategy is antithetical to the concept of planning to meet projected water demands. It does not make more efficient use of existing supplies

as does conservation, but instead effectively turns the tap off when the water is needed most. It is planning to not meet future water demands.

While Drought Management WMS are not supported by the RGWPG, DCPs are encouraged for all entities and the region supports the implementation of the drought responses outlined in these DCPs when corresponding triggers occur. While the relief provided from these DCP responses can prolong supply and reduce impacts to communities, they are not considered to be reliable for all entities under all potential droughts.”

HDR suggests that Brazos G continue this approach for the 2021 Brazos G Plan.

7.7 Other Drought-Related Considerations and Recommendations

HDR offers no specific recommendations regarding this section, but recognizes that this section presents an opportunity for Brazos G to make general or specific recommendations regarding drought and drought preparedness in the 2021 Brazos G Plan. These recommendations may or may not be related to water policy recommendations offered in Chapter 8 of the 2021 Brazos G Plan.

HDR requests the committee to review this section from previous plans and offer suggestions regarding topics or recommendations you would like to incorporate into the 2021 Plan.

For your information the following is the text from this section of the 2016 Brazos G Plan.

“Model Updates

It is of utmost importance that regional water planning groups have the most up to date information available to make decisions. The Brazos G WAM is used to determine both the drought of record and the firm yield of reservoirs, but has not been updated in almost 20 years. The Brazos G Regional Water Planning Group recommends that the Texas legislature approve a budget for TCEQ to pursue updated WAMs before the next regional planning cycle. This will be especially important if the duration of the recent drought continues or the severity increases.

Monitoring and Assessment

Brazos G recommends that all entities monitor the drought situation around the state and locally in order to prepare for and facilitate decisions. Several state and local agencies are monitoring and reporting on conditions with up to date information. A few informative sources are listed below.

- *Brazos River Authority Drought Information:* <http://www.brazos.org/DroughtStatus.asp>
- *Parmer Drought Severity Index:* <http://www.ncdc.noaa.gov/temp-and-precip/drought/historical-palmers/>
- *TWDB Drought Information:* <http://waterdatafortexas.org/drought/>


- TCEQ Drought Information: <https://www.tceq.texas.gov/response/drought>

In addition, Brazos G supports the efforts of the Texas Drought Preparedness Council administered by the Texas Department of Public Safety, and recommends that entities review information developed by the council. The Drought Preparedness Council was established by the legislature in 1999 and is composed of 15 representatives from several state agencies. The council is responsible for assessment and public reporting of drought monitoring and water supply conditions, advising the governor on drought conditions, and ensuring effective coordination among agencies. The council currently is promoting outreach to inform entities of the assistance they can provide and looking for input as to how they can be more useful. Brazos G suggests that entities take advantage of the resources available to them through the Drought Preparedness Council such as the Drought Annex (2014), which describes the activities that help minimize potential impacts of drought and outlines an effective mechanism for proactive monitoring and assessment. More information on the Drought Preparedness Council can be found here:

<http://www.txdps.state.tx.us/dem/CouncilsCommittees/droughtCouncil/stateDroughtPrepCouncil.htm>

Attachment A



TWDB Template Suggested for Chapter 7



Evaluations of New Reservoirs

Agenda Item 6.4.1

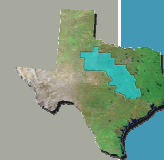
May 22, 2019



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Reservoir Site Evaluations

- Only updates from previous evaluations – 2001, 2006, 2011 and/or 2016 Plans
 - Supply update
 - Cost update
 - Check/confirm impacts to habitat and threatened/endangered species
- WUGs identified are preliminary only
- 2021 Brazos G Plan report sections will contain more detail

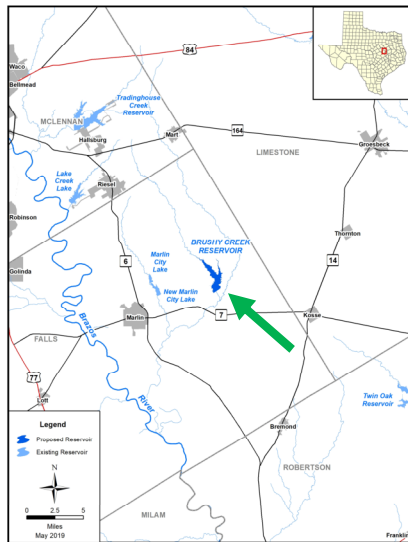


Strategy Evaluation Considerations

- Supply Availability – Brazos WAM Run 3
 - Subject to SB3 Environmental Flows
- Environmental Impacts
 - Flow Changes
 - Habitat / Species Impacts
 - Cultural Resources Impacts
- Cost - September 2018 Dollars
 - Structural
 - Non-Structural
 - Land Acquisition
 - Relocations
 - Mitigation
 - Engineering
 - Annual
 - Power Costs \$0.08/kW-hr
 - Debt Service – 3.5% for 40 years
 - Operation and Maintenance
 - Compensation for subordination agreements (if applicable)

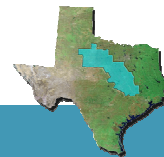


Brushy Creek Reservoir



- Authorized by Certificate of Adjudication 12-4355A
- Minimum instream flow release of 0.1 cfs
- Operates in conjunction with Marlin City Lake and New Marlin Reservoir
- Land already acquired by City of Marlin
- Proposed location: Falls County
- Potential WUGs to receive water: Marlin

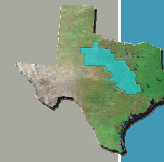
Reservoir Characteristics	
Capacity	6,560 acft
Surface Area	697 acres



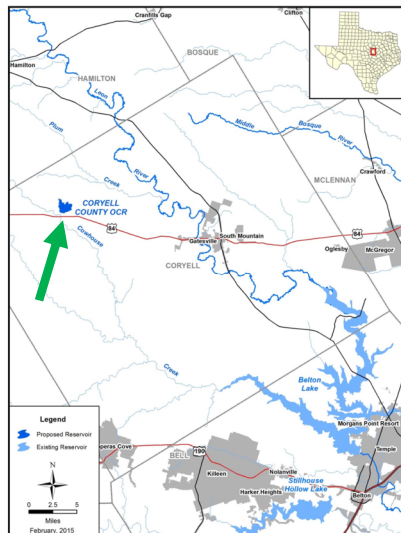
Brushy Creek Reservoir

- Project facilities other than reservoir
 - 2 MGD (3 cfs) intake and pump station
 - 12 in dia., 12 mile pipeline to Marlin WTP
 - City has sufficient WTP capacity to treat

Reservoir Cost Estimate Summary	
Total Capital Costs	\$21,340,000
Total Project Cost	\$33,229,000
Annual Cost	\$2,493,000
Available Project Yield	2,000 acft/yr
Annual Unit Cost of Water	\$1,247 /acft



Coryell County Off-Channel Reservoir



- Proposed location: western Coryell County
- Subordination agreement with BRA/Lake Belton
- Streamflows diverted from Cowhouse Creek
 - Available about 20% of the time
- All natural inflows are released downstream
- Possible entities to supply water: Coryell County
 - Potentially: Bell, Lampasas, Williamson, Hamilton

Off-Channel Reservoir Characteristics	
Capacity	15,380 acft
Surface Area	445 acres



Coryell County Off-Channel Reservoir

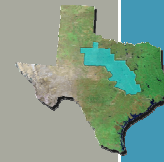
Project facilities other than reservoir include:

- Channel Dam on Cowhouse Creek
- 32 MGD (50 cfs) intake and pump station at Cowhouse Creek diversion point
- 36 in dia., 675 ft transmission pipeline from Cowhouse Creek diversion point to OCR

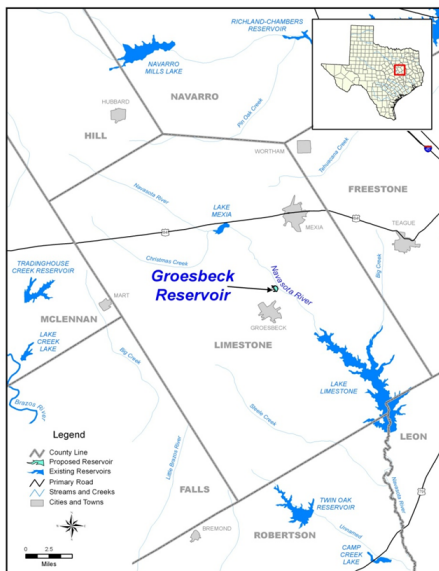
Reservoir Cost Estimate Summary

Total Capital Costs	\$55,713,000
Total Project Cost	\$82,584,000
Annual Cost	\$6,322,000
Available Project Yield ¹	3,135 acft/yr
Annual Unit Cost of Water	\$2,017 /acft

¹Available yield without subordination agreement is 600 acft/yr



Groesbeck Off-Channel Reservoir



- Proposed location: central Limestone County
- Utilizes existing water right to capture flows from Navasota River
- All natural inflows are released downstream
- Possible entities to supply water: City of Groesbeck

Reservoir Characteristics

Capacity	2,317 acft
Surface Area	146 acres



Groesbeck Off-Channel Reservoir

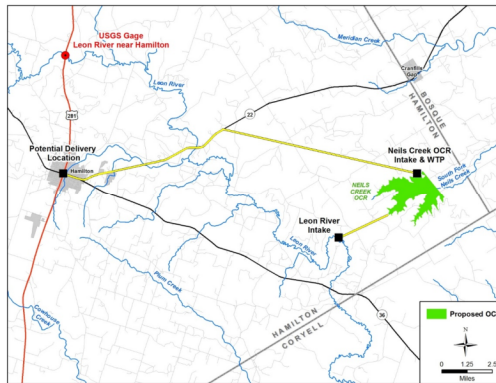
Project facilities other than reservoir include:

- 10 MGD (16 cfs) intake and pump station at Navasota River diversion point
- 24 in dia., 2 mile transmission pipeline from Navasota River diversion point to OCR
- 2.7 MGD (4.2 cfs) intake and pump station at OCR
- 12 in dia., 3,500 ft transmission pipeline from Navasota River diversion point to WTP
- City has sufficient WTP to treat

Reservoir Cost Estimate Summary	
Total Capital Costs	\$15,764,000
Total Project Cost	\$23,599,000
Annual Cost	\$1,853,000
Available Project Yield	1,755 acft/yr
Annual Unit Cost of Water	\$1,056 /acft



Hamilton County Reservoir



- Proposed location: eastern Hamilton County
- Subordination agreement with BRA/Lake Belton
- Streamflows diverted from Leon River
 - Available about 60% of the time
- All natural inflows from Neils Creek are released downstream
- Possible entities to supply water: Hamilton and Coryell County Other

Off-Channel Reservoir Characteristics	
Capacity	49,849 acft
Surface Area	1,374 acres



Hamilton County Reservoir

Project facilities other than reservoir include:

- Leon Creek Channel Dam
- 258 MGD (400 cfs) intake and pump station at Leon River diversion point
- 120 in dia., 3 mile transmission pipeline from Leon Creek diversion point to OCR
- 17.7 MGD (27 cfs) intake and pump station at OCR
- 36 in dia. 18 mile transmission pipeline to County Other
- New 17.7 MGD WTP

Reservoir Cost Estimate Summary


Total Capital Costs	\$27,913,000
Total Project Cost	\$42,246,000
Annual Cost	\$4,405,000
Available Project Yield ¹	3,365 acft/yr
Annual Unit Cost of Water	\$1,309 /acft

¹Available project yield without subordination agreement is 1,750 acft/yr.



QUESTIONS?







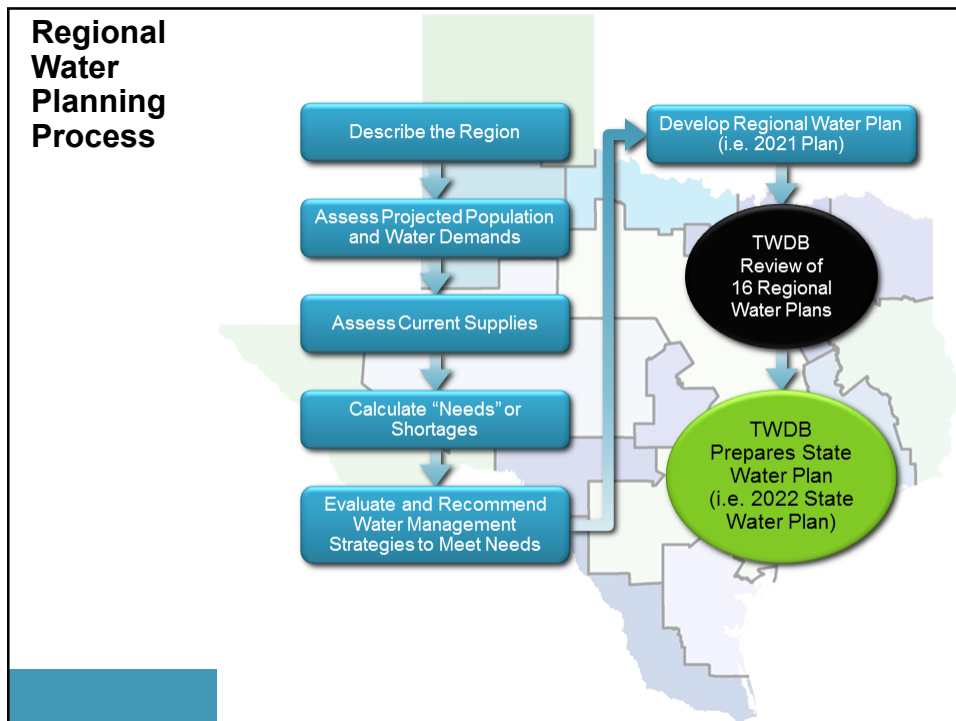
Schedule to Develop the 2021 Brazos G Plan

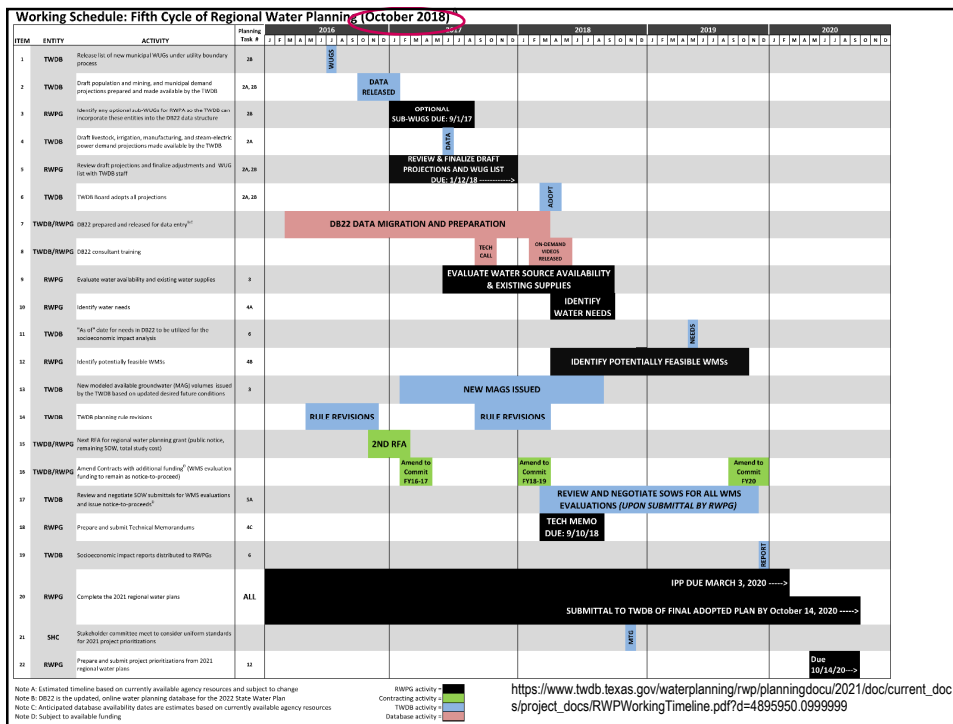
Agenda Item 6.4.2

May 22, 2019



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Working Schedule for the 2021 Planning Cycle



- January – began Task 5A Evaluation of Water Management Strategies
- January '19 – February '20 – develop 2021 Plan
 - July Brazos G mtg
 - Review draft Chapters 2 (demands), 3 (supplies) and 4 (needs)
 - Review WMS evaluations
 - Update on Chapter 7 Drought Preparations
 - Review Policy Recommendations?
 - September Brazos G mtg
 - Review WMS evaluations
 - Review draft Chapter 7 Drought Preparations
 - Review/approve Emergency Interconnections
 - Review Policy Recommendations?
 - Review initial plans for some WUGs and WWPs
 - November Brazos G mtg
 - Review WMS evaluations
 - Review initial plans for most WUGs and WWPs
 - Review Chapter 1 Description of Region
 - Finalize Chapters 2-4 and 7
 - Review policy recommendations
 - December Brazos G mtg
 - Finalize Chapter 1 Description of Region
 - Review final WMS evaluations
 - Finalize plans for most WUGs/WWPs
 - Adopt policy recommendations for Chapter 8
 - January '20 Brazos G mtg
 - Clean up for remaining tasks
 - January '20 Sub-regional meetings?
 - February '20 Brazos G mtg
 - Review/approve Initially Prepared Plan
- March 3, 2020 – Initially Prepared Plan





**Report on Atlas 14
Rainfall Study**
Agenda Item 6.5

May 22, 2019



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Topics for Today

- Atlas 14 Rainfall Study – updated rainfall depths for Texas
- No action requested



Rainfall Depth-Duration-Frequency

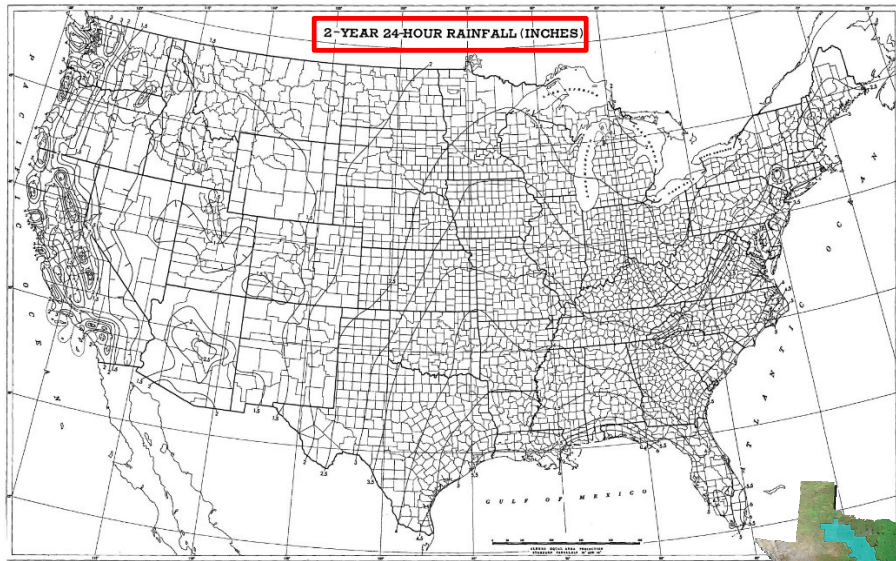
- For design of infrastructure such as bridges and culverts and designation of floodplains, we start with rainfall – **How much? How long? How often?**
 - 1961 – Technical Paper 40 (TP-40)
 - 30 min to 24 hrs durations
 - 1-year to 100-year return periods
 - 1964 – TP 49
 - 2 to 10-day durations
 - 2-year to 100-year return periods
 - 1977 – Hydro-35
 - 5 to 60 min durations
 - 2-year and 100-year return periods only

Typical Municipal Design Storm Criteria

- 10-year – minor facilities
- 25-year – significant facilities
- 100-year – major facilities and floodplains

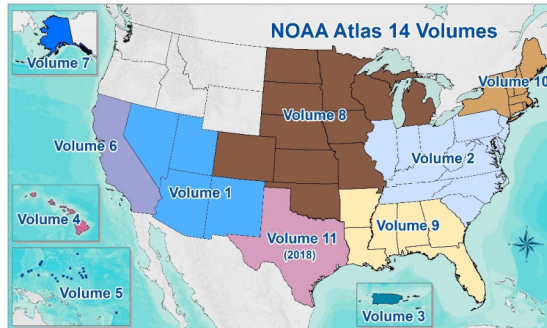


Rainfall Depth-Duration-Frequency



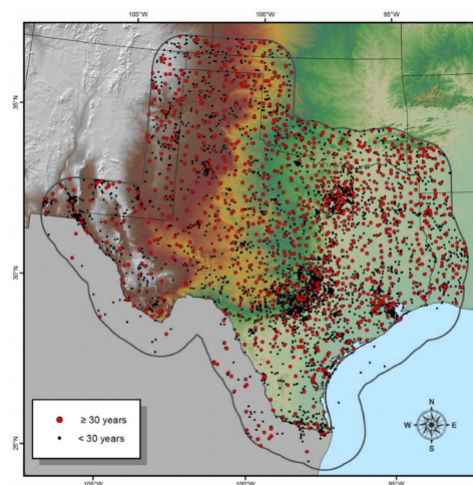
Rainfall Depth-Duration-Frequency

- For design of infrastructure such as bridges and culverts and designation of floodplains, we start with rainfall – **How much? How long? How often?**
 - 1961 – Technical Paper 40 (TP-40)
 - 30 min to 24 hrs durations
 - 1-year to 100-year return periods
 - 1964 – TP 49
 - 2 to 10-day durations
 - 2-year to 100-year return periods
 - 1977 – Hydro-35
 - 5 to 60 min durations
 - 2-year and 100-year return periods only
- **NOAA Atlas 14 (began 2006)**
 - 50+ more years data
 - Improved statistical techniques
 - Volumes 1 – 11
 - Washington, Oregon, Idaho, Montana and Wyoming not finished
 - Texas (Volume 11) published in 2018



NOAA Atlas 14

- Utilized 3,900 of 11,931 available stations
- Average record length ~ 60 years
- L-moment statistics (more robust)
- Durations 5 min to 60 days
- Recurrence intervals from 1 to 1,000 years
- Electronic access to data on 800 meter grid



4600 Cobbs Drive, Waco, Texas

PF tabular

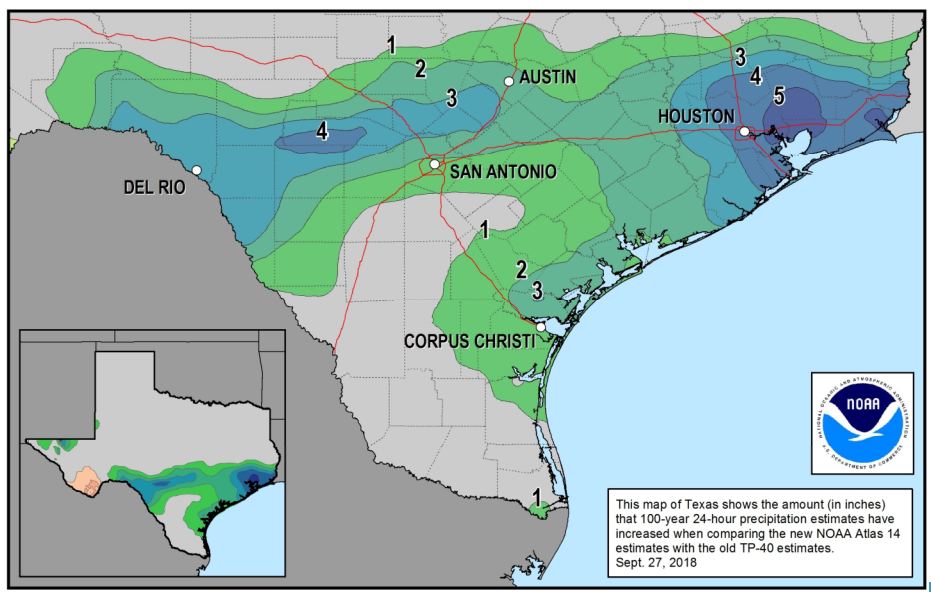
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.425 (0.322-0.562)	0.500 (0.381-0.653)	0.621 (0.473-0.816)	0.723 (0.542-0.962)	0.864 (0.628-1.18)	0.973 (0.688-1.37)	1.09 (0.748-1.57)	1.20 (0.809-1.78)	1.37 (0.887-2.09)	1.49 (0.945-2.34)
10-min	0.680 (0.514-0.897)	0.800 (0.610-1.04)	0.993 (0.756-1.31)	1.16 (0.868-1.54)	1.38 (1.01-1.90)	1.56 (1.12-2.19)	1.74 (1.20-2.5)	1.93 (1.29-2.85)	2.17 (1.41-3.32)	2.36 (1.50-3.70)
15-min	0.864 (0.654-1.14)	1.01 (0.770-1.32)	1.25 (0.948-1.64)	1.44 (1.08-1.92)	1.72 (1.25-2.36)	1.94 (1.37-2.72)	2.15 (1.49-3.11)	2.39 (1.61-3.53)	2.71 (1.76-4.14)	2.96 (1.87-4.63)
30-min	1.20 (0.910-1.59)	1.40 (1.07-1.84)	1.73 (1.32-2.28)	2.01 (1.51-2.68)	2.39 (1.74-3.27)	2.68 (1.90-3.77)	2.98 (2.06-4.30)	3.31 (2.22-4.89)	3.75 (2.44-5.74)	4.11 (2.60-6.43)
60-min	1.55 (1.17-2.04)	1.82 (1.39-2.37)	2.26 (1.72-2.96)	2.62 (1.97-3.49)	3.14 (2.20-4.29)	3.53 (2.50-4.96)	3.94 (2.72-5.68)	4.38 (2.96-6.48)	5.00 (3.25-7.85)	5.50 (3.46-8.61)
2-hr	1.88 (1.43-2.46)	2.23 (1.71-2.87)	2.79 (2.13-3.62)	3.27 (2.47-4.31)	3.95 (2.90-5.37)	4.50 (3.21-6.27)	5.09 (3.53-7.26)	5.72 (3.86-8.35)	6.60 (4.30-9.96)	7.30 (4.84-11.3)
3-hr	2.07 (1.59-2.89)	2.48 (1.90-3.15)	3.10 (2.30-4.00)	3.66 (2.78-4.80)	4.46 (3.28-6.03)	5.13 (3.67-7.11)	5.84 (4.06-8.27)	6.60 (4.47-9.57)	7.66 (5.01-11.5)	8.52 (5.42-13.1)
6-hr	2.40 (1.85-3.19)	2.90 (2.21-3.84)	3.67 (2.84-4.80)	4.35 (3.33-5.56)	5.37 (3.95-7.19)	6.22 (4.58-8.55)	7.14 (5.19-9.55)	8.14 (5.54-11.3)	9.55 (6.34-13.9)	10.7 (7.15-15.4)
24-hr	3.05 (2.40-3.86)	3.78 (2.96-4.66)	4.90 (3.86-6.14)	5.89 (4.58-7.50)	7.33 (5.50-9.57)	8.46 (6.19-11.4)	9.76 (6.92-13.4)	11.3 (7.73-15.8)	13.4 (8.88-19.4)	15.2 (9.80-22.5)
4-day	3.39 (2.68-4.24)	4.25 (3.38-5.22)	5.62 (4.48-6.98)	6.79 (5.33-8.56)	8.46 (6.38-10.9)	9.76 (7.14-12.9)	11.2 (8.37-15.1)	12.8 (9.54-16.9)	15.3 (10.2-21.8)	17.3 (11.2-25.2)
3-day	3.65 (2.91-4.55)	4.59 (3.65-5.82)	6.09 (4.89-7.53)	7.37 (5.81-9.24)	9.16 (6.92-11.7)	10.5 (7.73-13.8)	12.0 (8.58-16.2)	13.8 (9.54-18.9)	16.3 (10.9-23.1)	18.4 (11.9-26.8)
4-day	3.91 (3.13-4.85)	4.89 (3.94-5.97)	6.45 (5.19-7.95)	7.79 (6.15-9.71)	9.63 (7.31-12.3)	11.1 (8.14-14.4)	12.6 (9.02-16.9)	14.4 (9.99-19.7)	17.0 (11.3-23.9)	19.1 (12.4-27.5)
7-day	4.61 (3.71-5.67)	5.63 (4.56-6.82)	7.25 (5.87-8.86)	8.63 (6.88-10.7)	10.6 (8.09-13.4)	12.1 (8.97-15.7)	13.7 (9.87-18.2)	15.5 (10.6-21.0)	18.1 (12.2-25.3)	20.3 (13.2-28.5)
10-day	5.17 (4.18-6.33)	6.22 (5.07-7.52)	7.91 (6.44-9.62)	9.34 (7.47-11.5)	11.4 (8.73-14.3)	12.9 (9.63-16.7)	14.6 (10.6-19.2)	16.4 (11.5-22.1)	19.1 (12.9-26.4)	21.2 (13.8-29.8)
20-day	6.73 (5.49-8.16)	7.92 (6.54-9.53)	9.87 (8.11-11.9)	11.5 (9.26-14.0)	13.7 (10.6-17.1)	15.4 (11.5-19.6)	17.1 (12.4-22.3)	19.0 (13.4-25.2)	21.5 (14.5-29.4)	23.5 (15.4-32.7)
30-day	8.03 (6.58-9.66)	9.32 (7.75-11.2)	11.5 (9.50-13.8)	13.2 (10.7-16.1)	15.6 (12.1-19.3)	17.4 (13.1-22.0)	19.2 (14.0-24.7)	21.0 (15.9-31.8)	23.5 (16.6-35.0)	25.4 (18.6-35.9)
45-day	9.92 (8.18-11.9)	11.3 (9.52-13.6)	13.8 (11.5-16.5)	15.7 (12.8-18.9)	18.3 (14.2-22.4)	20.1 (15.2-25.2)	21.9 (16.0-28.1)	23.7 (16.8-31.0)	26.1 (17.7-35.1)	27.9 (18.3-38.2)
60-day	11.6 (9.63-13.9)	13.2 (11.1-15.8)	15.8 (13.3-18.9)	17.9 (14.7-21.5)	20.6 (16.1-25.2)	22.5 (17.0-28.1)	24.3 (17.8-31.0)	26.1 (18.5-34.0)	28.4 (19.3-38.0)	30.2 (19.8-41.0)

100-yr, 24-hr Storm



Where does it make a difference?





**2021 Regional Water Plan
Expense Budget**

Instrument	Date Executed	Committed Funds
TWDB Contract 1548301835	25 Aug 15	\$187,800
Amendment No. 3	19 Jun 17	\$667,002
Amendment No. 4	13 Aug 18	\$667,002
Total Committed		\$1,521,804
Future Funding		
Amendment No. 6	Pending (est. Fall 2019)	\$333,501
Total Study Cost		\$1,855,305

CATEGORY	AMOUNT	Spent as of March 2019	Remaining
Other Expenses (Administrative Agent)	\$39,539.14	\$15,966.49	\$23,572.65
Subcontract Services (HDR inc.)	\$1,780,253.16	\$634,447.21	\$1,145,805.95
Voting Planning Member Travel (Administrative Agent)	\$35,512.70	\$4,154.84	\$31,357.86
TOTAL STUDY COST	\$1,855,305.00	\$654,568.54	\$1,200,736.46

BRAZOS G

WATER PLANNING GROUP

2021 Regional Water Plan Expense Budget

Task				
Regional Water Planning Task No.	Description	Total TWDB Study Amount	Spent as of March 19	Remaining
1	Planning Area Description	\$39,657	0	39,657
2A	Non-Population Related Water Demand Projections	\$40,286	25,362.58	14,923.42
2B	Population & Population-Related Water Demand Projections (new projections)	\$59,531	56,901.66	2,629.34
3	Water Supply Analyses	\$183,356	195,092.97	(-11,736.97)
4A	Identification of Water Needs	\$35,823	41,860.84	(-6037.84)
4B	Identification of Potentially Feasible Water Management	\$34,285	35,055.38	(-770.38)
4C	Technical Memorandum	\$54,484	54,874.01	(-390.01)
5A	Evaluation and Recommendation of Water Management Strategies and Water Management Strategy Projects	\$703,546	34,556.34	668,989.66
5B	Water Conservation Recommendations	\$55,839	1,196.90	54,642.1
6	Impacts of Plan and Consistency with Protection of Resources	\$76,893	0	\$76,893
7	Drought Response, Activities & Recommendations	\$154,321	884.90	153,436.1
8	Unique Sites and Policy Recommendations	\$15,095	143.20	14,951.8
9	Infrastructure Financing Analysis	\$10,130	0	10,130
10	Public Participation and Plan Adoption	350,487	208,639.76	141,847.24
11	Implementation and Comparison to the Previous Regional Water Plans	\$29,990	0	29,990
12	Prepare and Submit Prioritization of Projects	\$11,582	0	11,582
	Total	\$1,855,305.00	\$654,568.54	\$1,200,736.46