



Board Meeting
&
Workshop

Clearwater Underground Water Conservation District
700 Kennedy Court
Belton, Texas

Wednesday
January 13, 2021
1:30 p.m.

Clearwater Underground Water Conservation District Board Members

Leland Gersbach, President

Pct. 1

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At-Large

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Revised Dec. 26, 2018

Agenda

**NOTICE OF THE MEETING OF THE
CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT
TO BE HELD BY TELECONFERENCE AND VIDEOCONFERENCE
January 13, 2021**

In accordance with Governor Abbott's declaration of the COVID-19 public health threat, action to temporarily suspend certain provisions of the Texas Open Meetings Act, and Executive Order, a quorum of CUWCD's Board of Directors will hold its regular Board meeting by telephonic conference call and, for redundancy, videoconference. The public may access this meeting and make public comment by phone, pc, tablet and/or notebook using the contact information and instructions on pages 2 of this notice.

Notice is hereby given that the above-named Board will hold a Workshop, Public Hearings and Board meeting on Wednesday, January 13, 2021 beginning at 1:30 p.m., in the Clearwater UWCD Board Room located at 700 Kennedy Court, Belton, Texas. The following items of business will be discussed¹.

Workshop:

1. Receive information related to Groundwater Management Area 8, related to Joint Planning and Development of the Desired Future Conditions.
2. Receive Legislative Update on 87th Legislative Session from Ty Embrey, Lloyd Gosselink Rochelle & Townsend.
3. Receive annual report from Texas AgriLife 4-H Water Ambassador Program.

Board Meeting:

1. Invocation and Pledge of Allegiance.
2. Public comment².
3. Approve minutes of the December 9, 2020 Board meeting.
4. Conduct public hearing as required to receive public comments on the Proposed GMA8 DFC's per Section 36.108(d-2) during the required 90-day public comment period ending February 3, 2021.
5. Discuss, consider and take appropriate action if necessary, to extend professional services agreement with James Beach, Advanced Groundwater Solutions, LLC.
6. Discuss, consider and take appropriate action if necessary, to renew professional services agreement with Ty Embrey.
7. Discuss, consider and take appropriate action if necessary, to accept the monthly financial report for December 2020 (FY21) as presented.
8. Discuss, consider and take appropriate action if necessary, to accept the monthly investment fund account report for December 2020 (FY21).
9. Discuss, consider and take appropriate action if necessary, to accept the Quarterly Deferred Compensation Employee Retirement Program account report as presented.
10. Discuss, consider and take appropriate action if necessary, to approve the FY21 line item budget amendments as requested.
11. Discuss, consider and take appropriate action if necessary, to elect officers of the Board for calendar year 2021, per District Bylaws, Article V (Sec. 1 & Sec. 2)
12. Discuss, consider and take appropriate action necessary, to review and adopt the District investment policy by resolution for calendar year 2021.
13. Discuss, consider and take appropriate action if necessary, to change the date of the February 10, 2021 Board meeting and Workshop to Wednesday, February 17, 2021.
14. General Manager's report concerning office management and staffing related to District Management Plan³.
15. Receive monthly staff report and possible consideration and Board action on the following³:
 - a. Drought Status reports
 - b. Education Outreach update
 - c. Monitoring Well reports
 - d. Rainfall report
 - e. Well Registration update
 - f. Aquifer Status and Non-exempt Monthly Well Production reports
16. Director comments and reports³.
17. Discuss agenda items for next meeting.
18. Set time and place for next meeting.
19. Adjourn.

Dated the 8th day of January 2021

Ieland Gersbach, Board President

By: 
Dirk Aaron, Asst. Secretary

RECEIVED
CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT
JAN 13 2021
1:30 PM

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

The Clearwater Underground Water Conservation District is committed to compliance with the Americans with Disabilities Act (ADA). Reasonable accommodations and equal opportunity for effective communications will be provided upon request. Please contact the District office at 254-933-0120 at least 24 hours in advance if accommodation is needed.

¹During the meeting, the Board reserves the right to go into executive session for any of the purposes authorized under Chapter 551 of the Texas Government Code, for any item on the above agenda or as otherwise authorized by law.

²Citizens who desire to address the Board on any matter may sign up to do so prior to this meeting. Public comments will be received during this portion of the meeting. Please limit comments to 3 minutes. No discussion or final action will be taken by the Board.

³No formal action will be taken by the Board on these agenda items. These items are on the agenda to provide the District's staff, Public Task Force Committees, and Directors with an opportunity to bring to the public's and each other's attention important activities and issues pertinent to the management of groundwater within the District, including, but not limited to, current events in the District involving groundwater, wells, or District permittees, state or regional developments related to water management, and activities of the staff, Public Advisory Committee, and Directors. Substantive deliberation and formal action on any of these issues will be conducted pursuant to a specific item on a future agenda.

GUIDELINES FOR PUBLIC PARTICIPATION IN CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT BOARD MEETING, WORKSHOP AND PUBLIC HEARINGS

Clearwater UWCD, in order to maintain governmental transparency and continued government operation while reducing face-to-face contact for government open meetings, is implementing measures according to guidelines set forth by the Office of the Texas Governor, Greg Abbott. In accordance with section 418.016 of the Texas Government Code, Governor Abbott has suspended various open-meetings provisions that require government officials and members of the public to be physically present at a specified meeting location. CUWCD's adherence to the Governor's guidance temporary suspension procedure ensures public accessibility and opportunity to participate in CUWCD's open meeting, workshop and public hearings.

Members of the public wishing to make public comment during the meeting must register by emailing schapman@cuwcd.org prior to 11:30 a.m. on January 13, 2021. This meeting will be recorded and the audio will be available online <http://www.cuwcd.org> or by requesting a copy from daaron@cuwcd.org. A copy of the agenda packet is available on the CUWCD's website prior to the meeting.

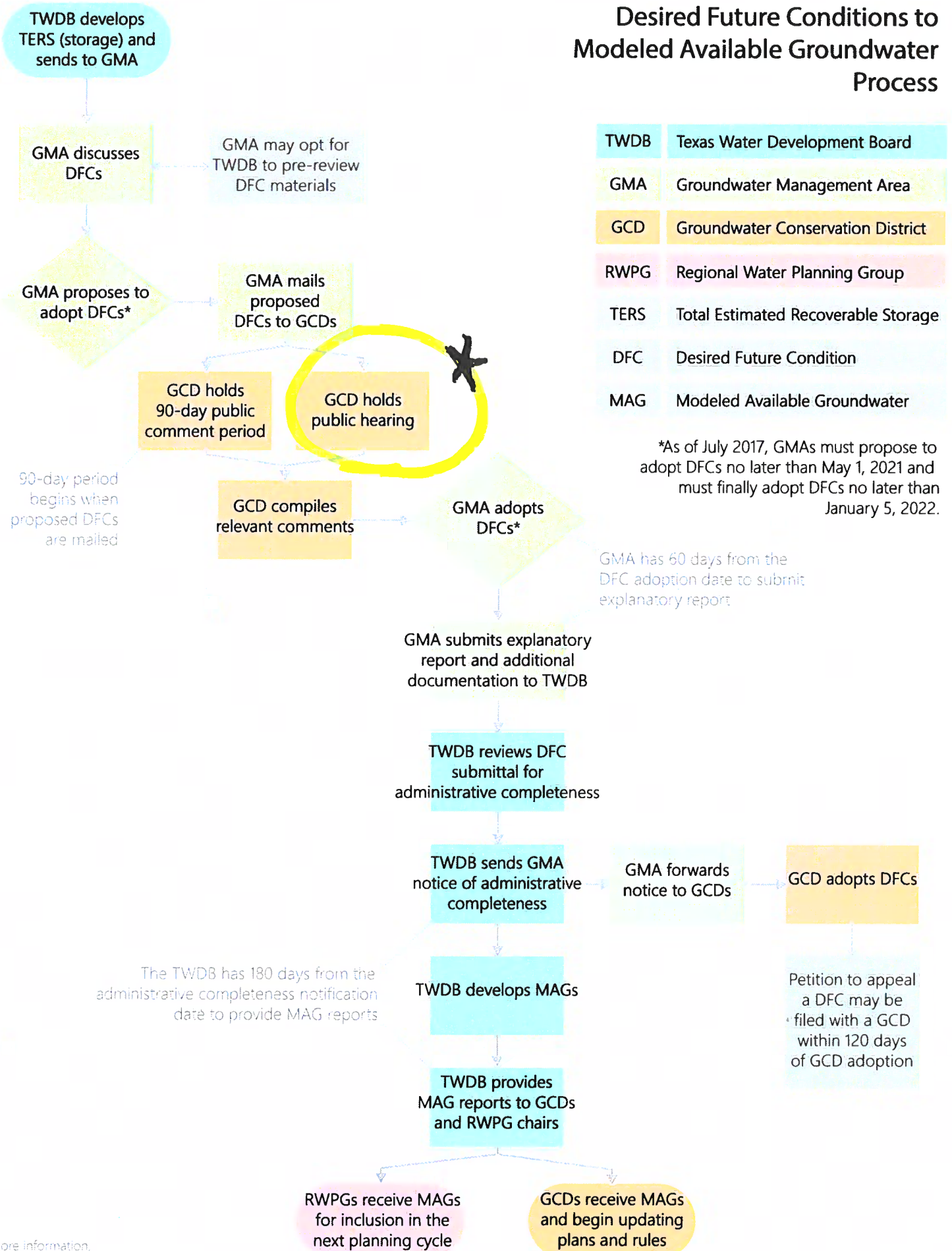
You may join CUWCD's Board Workshop, Public Meeting, Permit Hearing and Regular Board Agenda as follows:

- ✓ Clearwater UWCD Notice Board Workshop, Public Meeting on Proposed Desired Future Conditions, Permit Hearing and Regular Board Meeting on:
Wed, Jan 13, 2021 1:30 PM - 2:30 PM (CST)
- ✓ **Join the Public Meeting from your computer, tablet or smartphone.**
<https://global.gotomeeting.com/join/538202325>
- ✓ **You can also dial in using your phone.**
United States (Toll Free): [1 877 309 2073](tel:18773092073) Access Code: 538-202-325
- ✓ New to GoToMeeting? Get the app now and be ready when the meeting starts:
<https://global.gotomeeting.com/install/538202325>

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11:30 AM - 2:30 PM (CST)
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Workshop - Item #1

Desired Future Conditions to Modeled Available Groundwater Process



**CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT
NOTICE OF PUBLIC MEETING ON PROPOSED DESIRED FUTURE
CONDITIONS
January 13, 2021**

In accordance with Governor Abbott's declaration of the COVID-19 public health threat, action to temporarily suspend certain provisions of the Texas Open Meetings Act, and Executive Order, a quorum of CUWCD's Board of Directors will hold Public Hearing by telephonic conference call and, for redundancy, videoconference. The public may access this meeting and make public comment by phone, pc, tablet and/or notebook using the contact information and instructions on pages 2 of this notice.

NOTICE IS HEREBY GIVEN to all interested persons in Bell County, Texas:

That the Board of Directors of the Clearwater Underground Water Conservation District ("District") will hold a public meeting, accept public comment, and consider the proposed Desired Future Conditions for the groundwater resources within the District pursuant to Section 36.108(d-2) of the Texas Water Code.

The proposed DFCs approved by the district representatives of GMA 8 are described in terms of acceptable drawdown levels for each subdivision of the Trinity Aquifer and maintaining spring flow for Edwards BFZ Aquifer.

The acceptable levels of drawdown for each subdivision of the Trinity Aquifer are measured in terms of water level drawdowns in feet over the current planning cycle which extends from 2010 to 2070. For CUWCD, the relevant proposed DFCs for the geologic layers of the Trinity Aquifer include the following:

- From estimated year 2010 conditions, the average drawdown of the Glen Rose Layer should not exceed approximately 83 feet by the year 2080.
- From estimated year 2010 conditions, the average drawdown in the Hensell Layer should not exceed approximately 145 feet by the year 2080.
- From estimated year 2010 conditions, the average drawdown in the Hosston Layer should not exceed approximately 375 feet by the year 2080.

For the northern segment of the Edwards (Balcones Fault Zone) Aquifer within GMA 8 the proposed DFCs within CUWCD boundaries are as follows:

- Maintain at least 100 acre-feet per month of stream/spring flow in Salado Creek during a repeat of the drought of record in Bell County.

The District developed the proposed Desired Future Conditions as required by Chapter 36 of the Texas Water Code with the other groundwater conservation districts in Groundwater Management Area 8. The other districts within Groundwater Management Area 8 include: Central Texas Groundwater Conservation District; Clearwater Underground Water Conservation District; Middle Trinity Groundwater Conservation District; Northern Trinity Groundwater Conservation District; Post Oak Savannah Groundwater Conservation District; Prairielands Groundwater Conservation District; Red River Groundwater Conservation District; Saratoga Underground Water Conservation District; Southern Trinity Groundwater Conservation District; and Upper Trinity Groundwater Conservation District.


The public meeting will be held on Wednesday, January 13, 2021, at 1:30 p.m. at the Clearwater Underground Water Conservation District Office, located at 700 Kennedy Court, Belton, TX 76513. Comments on the proposed Desired Future Conditions may be presented in written or verbal form at the meeting. Written comments may also be submitted prior to the meeting by email to info@clearwaterwater.com or by hand-delivery to 700 Kennedy Court, Belton, TX 76513.

FOR INFORMATION ONLY
NO DFC 23
JAN 13 2021

Questions or requests for additional information should be directed to Dirk Aaron by phone at (254) 933-0120, by email to daaron@cuwcd.org, by mail to P.O. Box 1989, Belton, TX 76513, or in person at 700 Kennedy Court, Belton, TX 76513. The District is committed to compliance with the Americans with Disabilities Act (ADA). Any person who needs special accommodations should contact District staff at (254) 933-0120 at least 24 hours in advance if accommodation is needed.

Dated the 23rd day of December, 2020

By: _____


Dirk Aaron
General Manager/Assistant Secretary
Clearwater Underground Water Conservation District

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2020 DEC 23 A 8:14
SHELLEY COSTON
CO. CLK. BELL CO. TX

GUIDELINES FOR PUBLIC PARTICIPATION
IN CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT
BOARD MEETING, WORKSHOP AND
PUBLIC HEARINGS

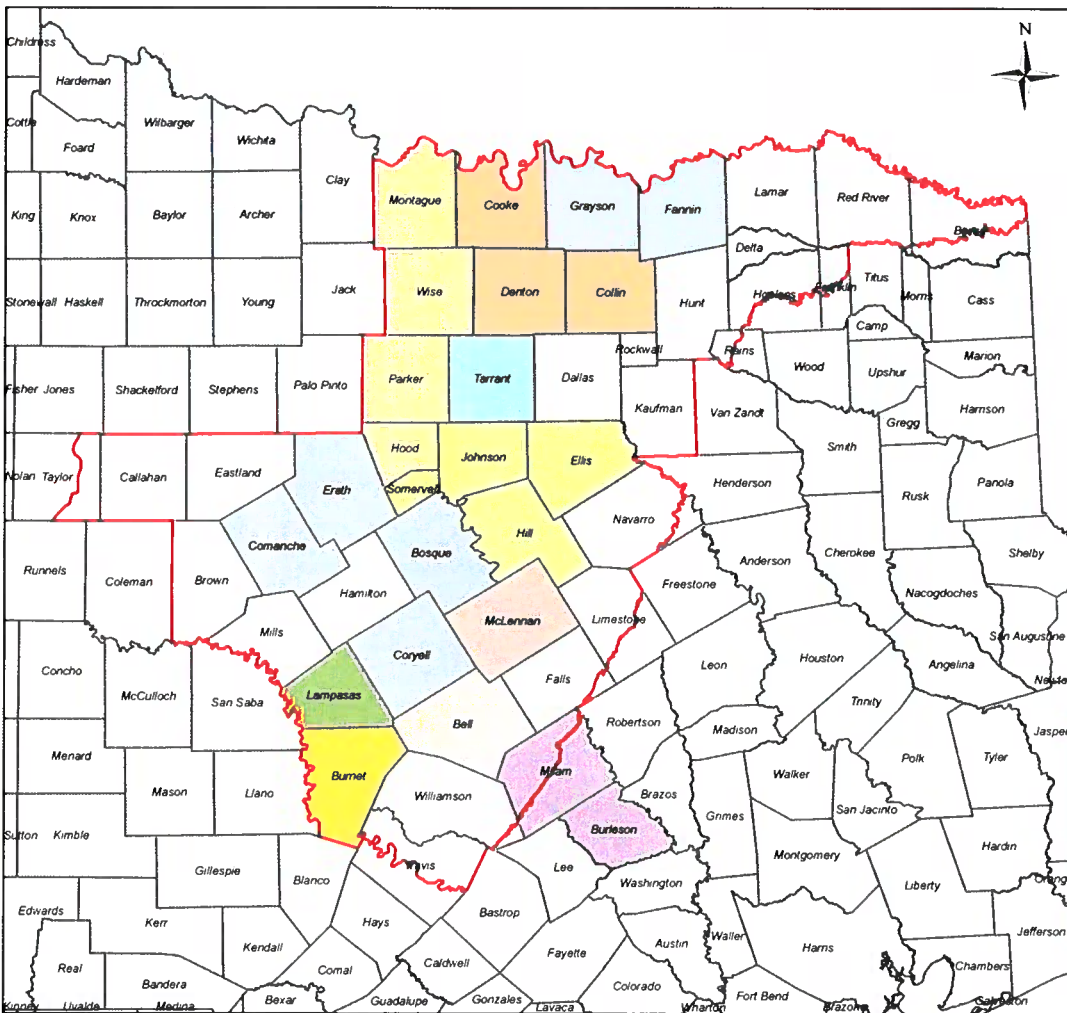
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Groundwater Management Area 8



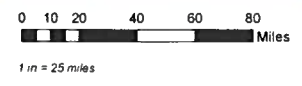
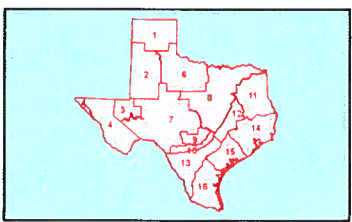
MAP LEGEND

- Groundwater Management Area 8
- Counties

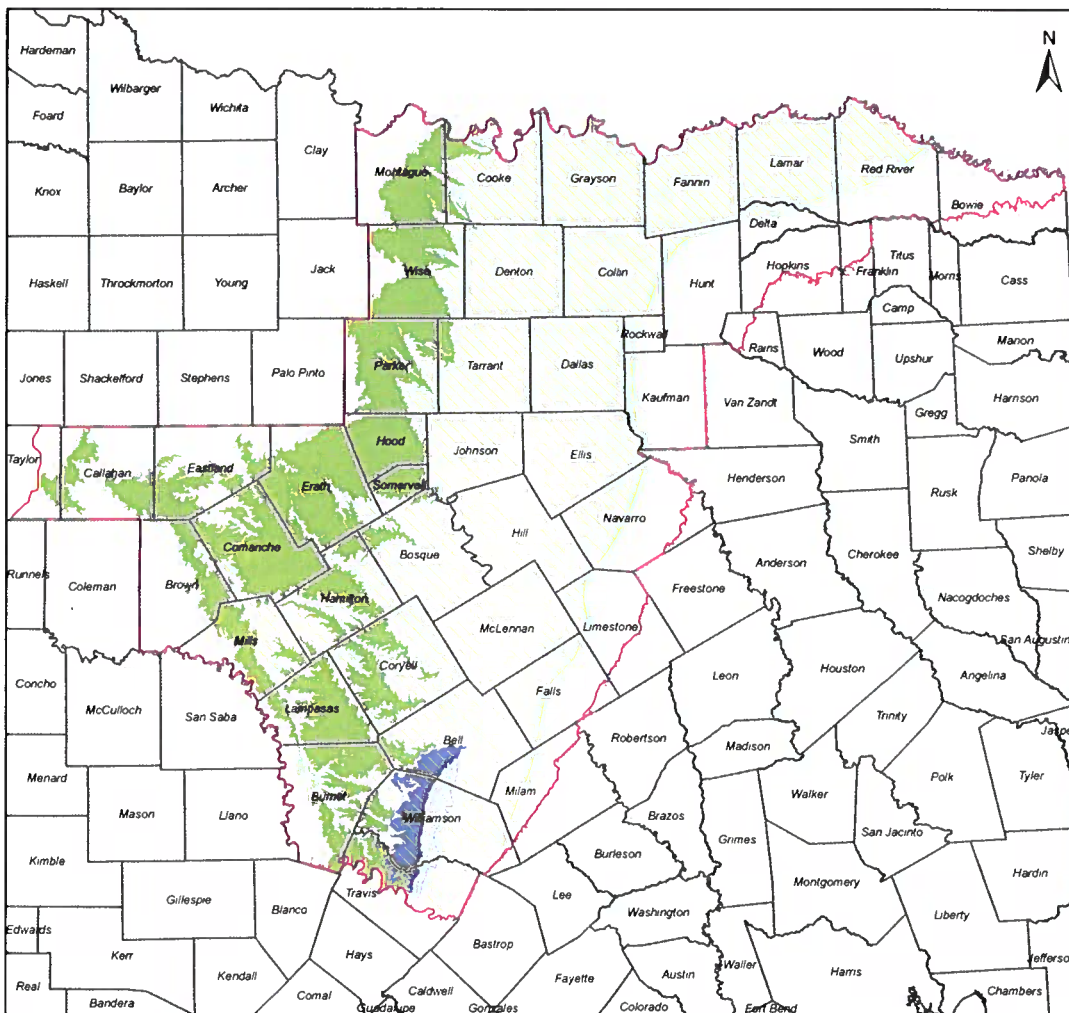
Groundwater Conservation Districts

- Central Texas GCD
- Clearwater UWCD
- Middle Trinity GCD
- North Texas GCD
- Northern Trinity GCD
- Post Oak Savannah GCD
- Prairielands GCD
- Red River GCD
- Saratoga UWCD
- Southern Trinity GCD
- Upper Trinity GCD

DISCLAIMER
This map was generated by the Texas Water Development Board. No warranty is made as to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. The scale and location of all mapped data are approximate. Boundaries for groundwater conservation districts are approximate and may not accurately depict legal descriptions.
Updated 8/26/2015



Groundwater Management Area 8



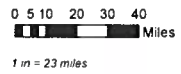
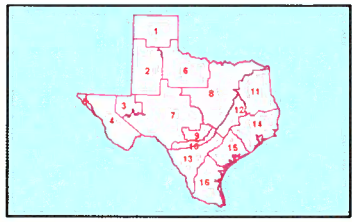
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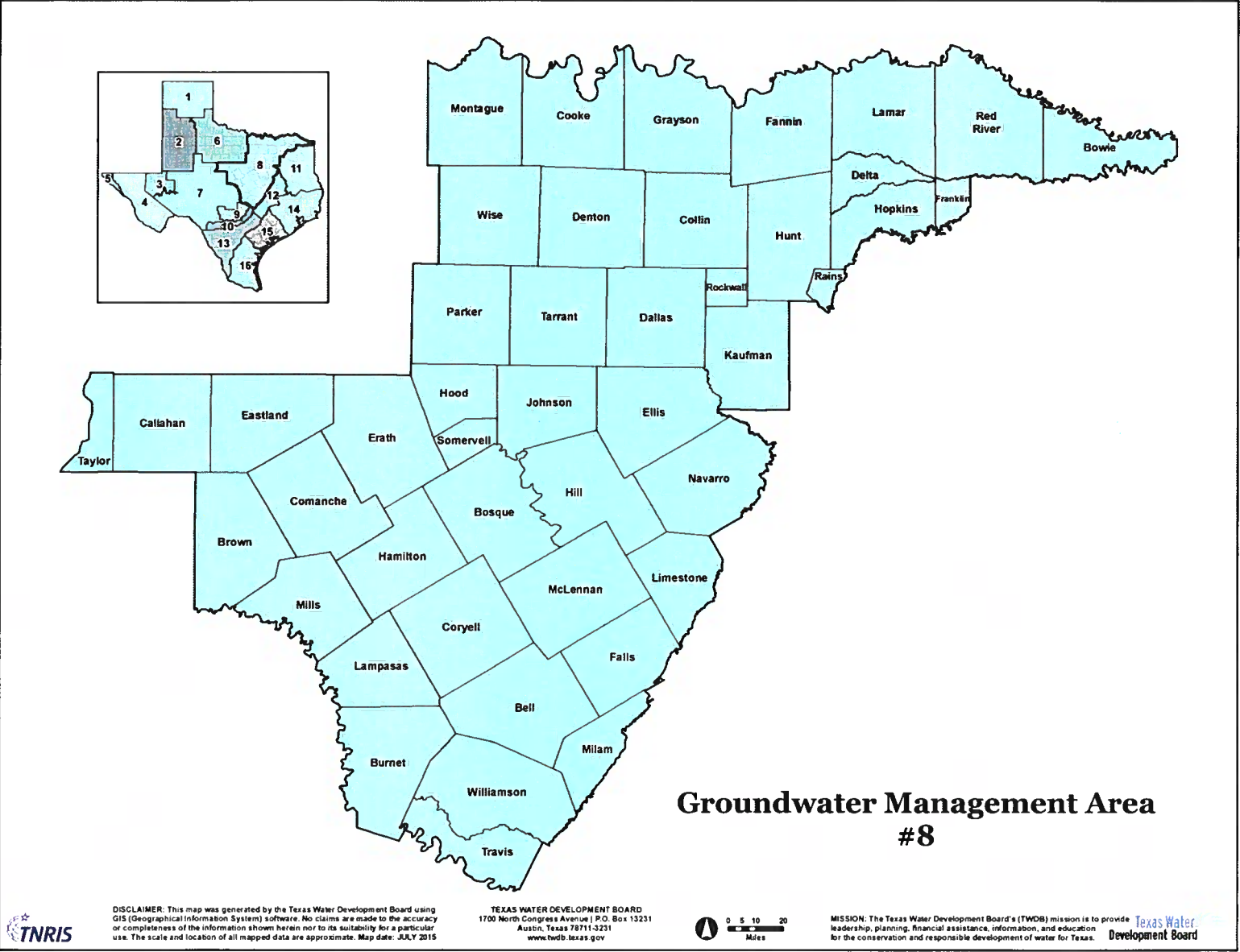
- Groundwater Management Area 8
- Counties

Major Aquifers

- Edwards - Trinity Plateau (outcrop)
- Edwards BFZ (outcrop)
- Edwards BFZ (subcrop)
- Trinity (outcrop)
- Trinity (subcrop)

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Updated 11/27/2017





Groundwater Management Area #8

DISCLAIMER: This map was generated by the Texas Water Development Board using GIS (Geographical Information System) software. No claims are made to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. The scale and location of all mapped data are approximate. Map date: JULY 2015

TEXAS WATER DEVELOPMENT BOARD
 1700 North Congress Avenue | P.O. Box 13231
 Austin, Texas 78711-3231
www.twdb.texas.gov



MISSION: The Texas Water Development Board's (TWDB) mission is to provide leadership, planning, financial assistance, information, and education for the conservation and responsible development of water for Texas. Texas Water Development Board



Going from Desired Future Conditions to Modeled Available Groundwater

Overview

- These guidelines apply when a groundwater availability model is used to estimate modeled available groundwater from desired future conditions.
- A groundwater availability model is a regional groundwater flow model based on the U.S. Geological survey MODFLOW code(s) that has been accepted by the Texas Water Development Board (TWDB) for joint groundwater planning purposes.
- Desired future conditions, such as specified drawdowns, saturated aquifer thickness, or spring flow, are criteria adopted by district representatives in a groundwater management area during joint planning.
- Modeled available groundwater is the amount of groundwater pumping that will achieve the desired future condition(s).
- Modeled available groundwater values are provided to each groundwater conservation district and regional water planning group in a groundwater management area.
- Regional water planning groups express their planning efforts in 10-year increments, extending 50 years into the future.
- The next regional water plans will be complete in 2021. The next state water plan is the 2022 State Water Plan. These have a 50-year planning horizon from 2030 to 2080.
- Groundwater pumping, simulated using the MODFLOW well package, is saved in the MODFLOW volumetric budget file. Because the well package and the cell-by-cell budget file may contain different values, the budget file is used in conjunction with the well file to estimate modeled available groundwater.
- The Groundwater Availability Modeling team at the TWDB will use the U.S. Geological Survey software [ZONEBUDGET Version 3.01](#) to process the cell-by-cell budget file.

Desired Future Conditions

Administrative Review

- Once a desired future condition submittal is received by the TWDB, staff reviews the submitted information to determine whether it is administratively complete.
- The review also includes a verification that all technical work has been sealed by a licensed Texas Professional Geoscientist or Engineer.
- The TWDB notifies the groundwater management area if the desired future condition submittal is complete or incomplete.

- After the TWDB receives all required data, TWDB staff determines whether the desired future condition is achievable. The TWDB will notify the groundwater management area if the desired future condition is NOT achievable.
- Once the desired future condition is determined to be achievable, TWDB staff estimates modeled available groundwater.

Well package assumptions

- Modeled available groundwater calculations are associated with a specific MODFLOW input file (WEL), which contains aquifer pumping data.
- It is preferred that desired future condition submittals include the MODFLOW WEL file which achieves the desired future condition.
- If no WEL file is submitted TWDB staff develops the WEL file.
- If the submitted WEL file does not achieve the desired future condition TWDB groundwater availability modeling staff revises the submitted WEL file.
- A TWDB groundwater management area liaison communicates through the groundwater management area technical coordinator to discuss assumptions for revising the WEL file.

Aquifer extent vs. model extent

- Unless stated otherwise in the desired future condition submittal, TWDB staff calculates averages based on the footprint of the official aquifer boundaries if the desired future condition is average drawdown or aquifer thickness. For example, if the desired future condition is stated as an average drawdown over a groundwater management area, TWDB staff calculates the average drawdown for all model cells within the groundwater management area only within the official aquifer boundary, even if the groundwater availability model extends beyond the official aquifer boundary.
- GIS data of official aquifer boundaries can be found here: www.twdb.texas.gov/mapping/gisdata.asp.
- For other desired future conditions such as water levels at a specific monitoring well or specified spring flow, the TWDB evaluates the conditions consistent with the desired future condition description.

Average Drawdown Calculation

Reference (baseline) year and target (ending) year

- For each model cell, drawdown is calculated as the difference between water levels at a reference year and water levels at a target year.

- The desired future condition submittal or supporting documentation needs to specify which model stress periods correspond with the reference and desired future condition target years.
- The reference year must be sometime in the past and should not be the current year or sometime in the future.
- If a reference year or the desired future condition target year is not specified in the submittal, the submittal is considered incomplete and the TWDB groundwater management area liaison will contact the groundwater management area technical coordinator for the additional information.

Model cells

- The drawdown values for all active official aquifer cells in a specified area is summed and divided by the number of active official aquifer cells in that area.
- Model cells with a simulated head below the cell bottom at the reference year and initially dry cells that rewet during a predictive run are excluded from calculations, unless otherwise specified.
- Please see the document: [Dry Cells May 2020.pdf](#) for additional details on the treatment of dry cells in the desired future condition and modeled available groundwater calculations.
- The specified area is the area stated in the desired future condition such as county, groundwater conservation district, or the entire groundwater management area. It may be for an individual aquifer unit or model layer or for all layers or even parts of an aquifer.

Model Grids

- Each groundwater availability model has a GIS grid with attributes for various geographic designations, such as county, groundwater management area, groundwater conservation district, and active or inactive cells. These grids can be found at www.twdb.texas.gov/groundwater/models.
- The grid file also includes aquifer boundary or layering information in fields with the header *AQ_Active*. There is an *AQ_Active* field for each model layer. Integer values have been assigned to model cells to identify whether the cells are active or inactive, within or outside an official aquifer boundary, or some other hydrostratigraphic designations.
- In general, an *AQ_Active* value of 0 indicates a model cell is inactive, a value of 1 indicates the model cell is active and within the official aquifer boundary and a value of 2 indicates the model cell is active but represents something other than the official aquifer.

- Other *AQ_Active* values may be assigned depending on how various hydrostratigraphic units are represented in the model.
- Each model grid includes detailed documentation of *AQ_Active* values and what they represent.
- It should be noted that for the Gulf Coast Aquifer, model areas located under bays are also excluded even though they are active model cells within the official aquifer boundaries.

ZONEBUDGET

- The U.S. Geological Survey program ZONEBUDGET extracts MODFLOW cell-by-cell flows based on a zone file. The zone file may contain different zones represented by integers at model cells. The program calculates flows within and between zones.
- TWDB staff uses the model grids to construct zone files for the program ZONEBUDGET to extract the well flow from the MODFLOW volumetric budget file for all model cells.
- For modeled available groundwater values, the TWDB delineates the zones based on county, river basin, regional water planning area, groundwater conservation district, groundwater management area splits, and any other specified areas in the desired future condition resolution. Thus, modeled available groundwater values are provided under different categories to meet different planning purposes.
- The model GIS grid files discussed above include geographic locations for each model grid cell based on the location of the model grid cell centroid.
- Unless otherwise stated in the desired future condition submittal, modeled available groundwater values (groundwater pumping values) are only extracted from the model within the official aquifer boundaries.

For questions, contact:

- Cindy Ridgeway, Groundwater Availability Modeling manager
cindy.ridgeway@twdb.texas.gov; 512-936-2386
- Shirley Wade, Groundwater Availability Modeling team
shirley.wade@twdb.texas.gov; 512-936-0883

Explanatory Report for Submittal of Desired Future Conditions to the Texas Water Development Board

Texas Water Code § 36.108 requires groundwater conservation districts to submit desired future conditions of the groundwater resources in their groundwater management area to the executive administrator of the Texas Water Development Board (TWDB). The TWDB expects to receive the following in a submission packet (31 Texas Administrative Code § 356.31(b) and § 356.32) no later than 60 days after final adoption by the groundwater management area of a desired future condition:

- A copy of the adopted desired future conditions and the explanatory report addressing the information required by Texas Water Code §36.108(d-3) and the criteria in Texas Water Code §36.108(d);
- a copy of the resolution from the groundwater conservation districts within a groundwater management area adopting the desired future conditions;
- a copy of the notice that was posted for the joint planning meeting at which the districts collectively adopted the desired future condition(s);
- the name of the designated representative of the districts in the groundwater management area;
- any and all groundwater availability model files or aquifer assessments acceptable to the executive administrator used in developing the adopted desired future conditions with documentation sufficient for TWDB staff to replicate the work;
- any other information the executive administrator may require in order to estimate the modeled available groundwater; and
- documentation supporting classifying of an aquifer as non-relevant.

The Texas Water Code and TWDB rules do not specify a format or organization for the explanatory report. Therefore, districts in groundwater management areas are free to develop explanatory reports that best suit the needs of the districts and fulfill the requirements of the statute. The TWDB recommends that an explanatory report be organized in such a way as to facilitate use by groundwater stakeholders and district constituents. The report will also be a key document if a petition is filed challenging the reasonableness of a desired future condition. The following paragraphs describe a possible approach to organizing the explanatory report.

Elements of the Explanatory Report

According to Texas Water Code § 36.108(d-3), the district representatives shall produce a desired future conditions explanatory report for the management area and submit to the TWDB and each district in the management area proof that notice was posted for the joint planning meeting, a copy of the resolution, and a copy of the explanatory report. The report must:

1. identify each desired future condition;
2. provide the policy and technical justifications for each desired future condition;
3. include documentation that the factors under Texas Water Code § 36.108(d) were considered by the districts and a discussion of how the adopted desired future conditions impact each factor;
4. list other desired future condition options considered, if any, and the reasons why those options were not adopted; and
5. discuss reasons why recommendations made by advisory committees and relevant public comments received by the districts were or were not incorporated into the desired future conditions.

Nine Factors for Explanatory Report

Factors identified in Texas Water Code § 36.108(d) that need to be discussed in the explanatory report include:

1. aquifer uses or conditions within the management area, including conditions that differ substantially from one geographic area to another,
 - a. for each aquifer, subdivision of an aquifer, or geologic strata and
 - b. for each geographic area overlying an aquifer;
2. the water supply needs and water management strategies included in the state water plan;
3. hydrological conditions, including for each aquifer in the management area the total estimated recoverable storage as provided by the executive administrator, and the average annual recharge, inflows, and discharge;
4. other environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water;
5. the impact on subsidence;
6. socioeconomic impacts reasonably expected to occur;
7. the impact on the interests and rights in private property, including ownership and the rights of management area landowners and their lessees and assigns in groundwater as recognized under Section 36.002;
8. the feasibility of achieving the desired future condition; and
9. any other information relevant to the specific desired future conditions.

The desired future conditions proposed under Texas Water Code §36.108 (d) must:

- a) be established for each aquifer, subdivision of an aquifer, or geologic strata, or
- b) be established for each geographic area overlying an aquifer in whole or in part or subdivision of an aquifer; and
- c) provide a balance between the highest practicable level of groundwater production and the conservation, preservation, protection, recharging, and prevention of waste of groundwater and control of subsidence in the management area.

Possible Outline of the Explanatory Report¹

The TWDB does not recommend, endorse, or approve a particular outline; the option presented is one possibility to consider that would address the provisions of TWC §36.108. Districts in a groundwater management area should identify a report presentation style that best suits the needs of its member districts and constituents.

Considering the above requirements and factors, one option for organizing the explanatory report would include the following outline:

1. Aquifer A (includes aquifer description and the desired future condition)
 - 1.1. Policy justification
 - 1.2. Technical justification
 - 1.3. Factor consideration
 - 1.3.1. Aquifer uses or conditions
 - 1.3.2. Water supply needs
 - 1.3.3. Water management strategies
 - 1.3.4. Hydrological conditions
 - 1.3.4.1. Total estimated recoverable storage (provided by TWDB)
 - 1.3.4.2. Average annual recharge
 - 1.3.4.3. Inflows
 - 1.3.4.4. Discharge
 - 1.3.5. Environmental impacts
 - 1.3.5.1. Springflow
 - 1.3.5.2. Groundwater/Surface Water interaction
 - 1.3.6. Subsidence impacts
 - 1.3.7. Socioeconomic impacts

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- 1.3.8. Private property impacts
 - 1.3.9. Achievement feasibility
 - 1.3.10. Other information
 - 1.4. Discussion of other desired future conditions considered
 - 1.5. Discussion of other recommendations
 - 1.5.1. Advisory committees
 - 1.5.2. Public comments
2. Aquifer B (repeat outline for Aquifer A, as appropriate and applicable)
3. Appendices (such as the total estimated recoverable storage report from the TWDB, applicable GAM runs, other supporting documentation as necessary to support the desired future conditions report)

Documentation Supporting Classification of an Aquifer as Non-Relevant

Districts in a groundwater management area may, as part of the process for adopting and submitting desired future conditions, propose classification of a portion or portions of a relevant aquifer as non-relevant (31 Texas Administrative Code § 356.31(b)). This proposed classification of an aquifer may be made if the districts determine that aquifer characteristics, groundwater demands, and current groundwater uses do not warrant adoption of a desired future condition. The districts must submit to the TWDB the following documentation for the portion of the aquifer proposed to be classified as non-relevant:

1. A description, location, and/or map of the aquifer or portion of the aquifer;
2. A summary of aquifer characteristics, groundwater demands, and current groundwater uses, including the total estimated recoverable storage as provided by the TWDB, that support the conclusion that desired future conditions in adjacent or hydraulically connected relevant aquifer(s) will not be affected; and
3. An explanation of why the aquifer or portion of the aquifer is non-relevant for joint planning purposes.

Submission Packet

The TWDB expects to receive desired future conditions for the entirety of each aquifer in the groundwater management area in the submission packet. A packet will be considered administratively complete when it contains all the required documents.

Explanatory report packets should be sent by certified mail (or other traceable method) or by private carrier to the TWDB. Contact us to discuss additional methods of packet delivery.

A completed packet needs to be sent by certified mail (or other traceable method) to the TWDB at the following address:

Executive Administrator
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711-3231

If sending by private carrier, please send to this address:

Executive Administrator
Texas Water Development Board
1700 North Congress Avenue
Austin, Texas 78701
(512) 463-7847

For questions, contact:

- Natalie Ballew, Groundwater Technical Assistance manager
natalie.ballew@twdb.texas.gov; 512-463-2779
- Larry French, Groundwater Division director
larry.french@twdb.texas.gov; 512-463-5067

Groundwater Management Area (GMA) FAQs

1. [What happens to the areas in a groundwater management area which are not covered by groundwater conservation districts? Do these areas have representation in the groundwater management area?](#)
2. [Who is an affected person?](#)
3. [What will the TWDB do if a groundwater management area is sued?](#)
4. [Who are the official representatives for a groundwater management area?](#)
5. [If a minor aquifer is present in one District and in no other, can the other Districts in the groundwater management area dictate how that aquifer should be managed?](#)
6. [What posting requirements apply to a groundwater management area to hold meetings? Do groundwater management area meetings have to be posted? What are the posting rules?](#)
7. [Does the joint planning process by groundwater conservation districts have to conform to the open records act?](#)
8. [What is the role of the TWDB when a petition is filed concerning the reasonableness of a desired future condition?](#)
9. [What happens when groundwater management areas having aquifers straddling management area boundaries disagree on future desired conditions? How do they resolve their differences or do they have to resolve the differences?](#)
10. [What is the role of TWDB in the joint planning process?](#)
11. [What TWDB resources and assistance are available to the groundwater management area?](#)
12. [Is the TWDB going to make administrative rules specifically for the joint planning process?](#)
13. [What is the legal consequence of a groundwater conservation district not participating in groundwater management area joint planning?](#)
14. [What is a "geographic area"?](#)
15. [Can one person represent two districts on a groundwater management area group, such as a common general manager's appointment by two boards? In addition, would this give the representative two votes?](#)
16. [Whom should I contact for more information about the joint planning process?](#)

Answers to Frequently Asked Questions

1. What happens to the areas in a groundwater management area which are not covered by groundwater conservation districts? Do these areas have representation in the groundwater management area?

Statute does not provide representation to areas in a groundwater management area that lie outside of groundwater conservation districts. Therefore, any area outside of a district does not have direct representation in groundwater management area matters. Districts in some groundwater management areas are including non-voting representation from areas without districts. Please note that desired future conditions statements are used to calculate modeled available groundwater for the entire area covered by the desired

future condition statement, including areas without groundwater conservation districts. Modeled available groundwater values for the groundwater management area (including non-district areas) will be used by regional water planning groups in their plans.

2. Who is an affected person?

Texas Administrative Code §356.10 defines affected person as an owner of land in the management area, a district in or adjacent to the management area, a regional water planning group with a water management strategy in the management area, a person or entity who holds or is applying for a permit from a district in the management area, a person or entity who has groundwater rights in the management area, or any other person defined as affected with respect to a management area by Texas Commission on Environmental Quality rule.

3. What will the TWDB do if a groundwater management area is sued?

The TWDB does not believe a groundwater management area is a legal entity or "person" that can be sued. It is simply an area delineated by the Board pursuant to statutory requirements. Therefore, the Board does not believe it is possible to sue a groundwater management area, since there is no governing body or legal representative to sue.

4. Who are the official representatives for a groundwater management area?

The joint planning required of the groundwater conservation districts in a groundwater management area is to be conducted by district representatives (Texas Water Code §36.108(c)). The district representative as defined in §36.108(a)) means the presiding officer or the presiding officer's designee for any district located wholly or partly in the management area.

5. If a minor aquifer is present in one District and in no other, can the other Districts in the groundwater management area dictate how that aquifer should be managed?

Texas Water Code §36.108(d) states that all districts in a groundwater management area must meet and establish desired future conditions for the relevant aquifers within the management area. It goes on to state that the districts may establish different desired future conditions for each aquifer or geographic area. The majority of the districts in the management area must agree as to how the aquifer is managed, as statute requires the desired future conditions to be approved by a two-thirds vote of all the districts within the management area. On the other hand, districts in a groundwater management area may declare the aquifer not relevant for joint planning, if it is deemed to not affect any other district as outlined in Texas Administrative Code §356.3.

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6. What posting requirements apply to a groundwater management area to hold meetings? Do groundwater management area meetings have to be posted? What are the posting rules?

Statute requires that joint planning meetings be held in accordance with Chapter 551, Government Code (Open Meetings). Notice of the joint planning meeting must be provided at least 10 days before the meeting by providing notice to the secretary of state; providing notice to the county clerk of each county located wholly or partly in a district within the management area; and posting notice at the district office of each district in the management area (Texas Water Code §36.108(e)).

7. How much notice is required for posting a meeting?

Yes, statute requires that each district comply with Chapter 552, Government Code (Open Records).

8. What is the role of the TWDB when a petition is filed concerning the reasonableness of a desired future condition?

For desired future conditions adopted after September 1, 2015, state law changed so that an affected person may file a petition with a groundwater conservation district.

A district must submit a copy of the petition to the TWDB within 10 days of receiving a petition. The TWDB will conduct an administrative review to determine whether the desired future condition meets the criteria in Texas Water Code Section 36.108(d) and will conduct a study containing scientific and technical analysis of the desired future condition. Texas Water Code Section 36.1083(e) lists the items that the TWDB must consider in the analysis. The TWDB must complete and deliver this study to the State Office of Administrative Hearings within 120 days of receiving a copy of the petition. The State Office of Administrative Hearings will consider the TWDB study and may request TWDB staff to serve as expert witnesses during the petition hearing. Texas Water Code Section 36.1083 describes the hearing process for the appeal of a desired future condition via the State Office of Administrative Hearings.

9. What happens when groundwater management areas having aquifers straddling management area boundaries disagree on future desired conditions? How do they resolve their differences or do they have to resolve the differences?

There is no requirement for groundwater conservation districts to cooperate or coordinate their desired future conditions across groundwater management areas. However, a groundwater conservation district adjacent to a groundwater management area may file a petition with TWDB that appeals the approval of a desired future condition adopted by the groundwater conservation districts in that groundwater management area. TWDB staff encourages groundwater conservation districts in groundwater management areas to consider the interests of districts in neighboring groundwater management areas while developing desired future conditions.

10. What is the role of TWDB in the joint planning process?

The TWDB plays a support role in the joint planning process. The groundwater conservation districts in a groundwater management area are required to meet every year for joint planning and are required to adopt desired future conditions every five years. The TWDB provides districts with modeled available groundwater numbers based on the desired future conditions adopted by the districts in the groundwater management area (Texas Water Code Section 36.1084(b)). If a groundwater conservation district receives a petition on the reasonableness of a desired future condition, the TWDB is responsible for providing an administrative review and a study of the desired future condition (Texas Water Code Section 36.1083(e)). The TWDB may be requested to facilitate mediation between affected parties and the district (Texas Water Code Section 36.1083(j)).

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11. What TWDB resources and assistance are available to the groundwater management area?

The TWDB is available to assist districts in determining their desired future conditions. This assistance available by having TWDB staff attend joint planning meetings and in reviewing, as needed, groundwater

availability model runs and other assessments as provided by the districts to evaluate draft desired future conditions statements.

12. Is the TWDB going to make administrative rules specifically for the joint planning process?

Districts are responsible for conducting the joint planning process as outlined in Texas Water Code §36.108. TWDB has administrative rules relating to the submission of desired future conditions (Texas Administrative Code §356.30-§356.35) and the role of the TWDB when a petition is filed with a groundwater conservation district concerning the reasonableness of a desired future condition (Texas Administrative Code §356.40-§356.42).

13. What is the legal consequence of a groundwater conservation district not participating in groundwater management area joint planning?

While nothing is explicitly stated in statute about this, it appears there are a couple of consequences. First, the district would still be required to abide by the desired future conditions that they were not a part of selecting. In addition, Texas Water Code §36.1082 allows an "affected person" to file a petition with the Texas Commission on Environmental Quality to request an inquiry. The inquiry may be for the following reasons related to joint planning: the district failed to participate in the joint planning process under Section 36.108, the district failed to adopt the applicable desired future conditions adopted by the management area, the district failed to update its management plan before the second anniversary of the adoption of desired future conditions by the management area, the district failed to update its rules to implement the applicable desired future conditions before the first anniversary of the date it updated its management plan with adopted desired future conditions, the rules adopted by a district are not designed to achieve the desired future conditions adopted by the management area, the groundwater is not adequately protected by the rules adopted by a district, or the district failed to adequately enforce its rules.

14. What is a "geographic area"?

Statute does not directly define the term "geographic area." Texas Water Code §36.108(d)(1) states that the districts shall consider "aquifer uses or conditions within the management area, including conditions that differ substantially from one geographic area to another." Texas Water Code §36.108(d-1)(2) states that different desired future conditions may be established for "each geographic area overlying an aquifer in whole or in part or subdivision of an aquifer within the boundaries of the management area."

15. Can one person represent two districts on a groundwater management area group, such as a common general manager's appointment by two boards? In addition, would this give the representative two votes?

Statute is silent on this issue. Therefore, it is up to the districts if they want to do this.

16. Whom should I contact for more information about the joint planning process?

The Groundwater Technical Assistance team will be happy to answer any questions you may have about joint planning. Contact us at 512-936-0817.

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Desired Future Condition (DFC) FAQs

1. [What is the TWDB's role in developing desired future condition statements?](#)
2. [How long will it take to get results from groundwater availability model runs?](#)
3. [Can a groundwater management area be sued over approved desired future conditions? Who will represent the groundwater management area in court?](#)
4. [What if the District already has their desired future condition set and has calculated their modeled available groundwater, do they have to change it?](#)

Answers to Frequently Asked Questions

1. What is the TWDB's role in developing desired future condition statements?

If requested, the TWDB will assist districts in identifying and accessing technical information and data necessary to develop and evaluate desired future condition statements (Texas Water Code §36.1081). The TWDB provided groundwater modeling services for development of initial desired future condition statements, but is currently unable to continue this service due to limited staff availability. If requested, the TWDB will help districts identify qualified contractors to conduct modeling runs.

2. How long will it take to get results from groundwater availability model runs?

The time required to conduct groundwater availability model runs depends on the number of aquifers, complexity of pumping scenarios, interaction with neighboring groundwater management areas, and other factors. The TWDB recommends that districts consult with qualified groundwater modeling contractors to identify the schedule and costs of performing model runs.

3. Can a groundwater management area be sued over approved desired future conditions? Who will represent the groundwater management area in court?

The Texas Water Development Board does not believe a groundwater management area is a legal entity or "person" that can be sued. It is merely an area drawn by the Board pursuant to statutory requirements. Therefore, the Board does not believe it is possible to sue a groundwater management area, since there is no governing body or legal representative to sue.

4. What if the District already has their desired future condition set and has calculated their modeled available groundwater, do they have to change it?

If a single district has set their desired future condition, they still must participate in the joint planning with the other districts in their groundwater management area. The condition selected by the single district may be changed by a vote of all the districts in the groundwater management area pursuant to law.

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Modeled Available Groundwater (MAG) FAQs

1. [Can the groundwater management area hire a consultant to determine its modeled available groundwater?](#)
2. [Will the TWDB have to approve a modeled available groundwater value determined by someone other than the TWDB? What if there is a disagreement between the two determinations?](#)
3. [If a district has already established its desired future condition and determined its modeled available groundwater, will they be required to change it if the groundwater management area develops different desired future conditions and the TWDB provides different modeled available groundwater values?](#)

Answers to Frequently Asked Questions

1. Can the groundwater management area hire a consultant to determine its modeled available groundwater?

The districts in a groundwater management area may hire a consultant to assist with determining the desired future condition and the resulting modeled available groundwater. However, the law requires the districts to submit their desired future conditions to the Executive Administrator of the TWDB. The Executive Administrator is then required to provide the values of modeled available groundwater to the districts and regional water planning groups. In order to comply with the law, if a district submits the modeled available groundwater value, along with their desired future conditions, the TWDB will still need to approve the calculations of modeled available groundwater made by the consultant. TWDB staff encourages draft submittals of groundwater availability model run or aquifer assessment files prior to the groundwater management area adopting their desired future conditions, so that TWDB can assess if the files or approach matches the expectations of the management area. Please view the following document for additional guidance: ["How to Submit a Groundwater Availability Model Run or Aquifer Assessment for the Development of Modeled Available Groundwater."](#)

2. Will the TWDB have to approve a modeled available groundwater value determined by someone other than the TWDB? What if there is a disagreement between the two determinations?

Yes, the TWDB may approve a modeled available groundwater value determined by someone else other than the TWDB. If there is disagreement, TWDB staff will work with districts in the groundwater management area to resolve the disagreement. The law, however, only allows the TWDB to provide the modeled available groundwater value. Therefore, if there is a disagreement that cannot be resolved, the TWDB's value will be used.

3. If a district has already established its desired future condition and determined its modeled available groundwater, will they be required to change it if the groundwater management area develops different desired future conditions and the TWDB provides different modeled available groundwater values?

Statute describes a specific process by which desired future conditions and modeled available groundwater are determined. Therefore, a district may not determine desired future conditions and modeled available

groundwater outside the joint planning process. Districts are required to use the desired future conditions from the joint planning process and the modeled available groundwater provided by TWDB.

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Groundwater Availability Model (GAM) FAQs

Welcome to the Groundwater Resources frequently asked questions page.

The following GAM related questions were either brought up during a March 9, 2006 meeting held to receive feedback and input from consultants and other specialized interested parties on the technical components of the regional water planning process or have been asked directly to GAM staff.

1. [Why is average recharge different in various groundwater availability model run reports?](#)
2. [I need help figuring out rules for well spacing, what can I use?](#)
3. [If the GAMs are too regional, should I refine the model to just my area of interest?](#)
4. [It would have been nice if they \[GAMs\] were done in time for the Regional Water Planning process.](#)
5. [There was a question on GAMs that extend into two or more Regional Water Planning regions and what should one region use as "boundary conditions" for pumpage in other region.](#)
6. [Water Availability Models \(WAM\) and Groundwater Availability Models \(GAM\) Interaction. This was mentioned and pulled out as a separate discussion topic, however most of the discussion focused on the WAM side. For example, whether the WAMs would take into account change in discharge to rivers in the naturalized flows and doing a "sensitivity analysis" on channel losses/gains.](#)
7. [GAM Sensitivity and Uncertainty: The one-at-a-time sensitivity analyses included in the GAMS are very helpful, but could be improved by setting the minimum and maximum value of each parameter to represent some level of the uncertainty in that parameter \(e.g., an expected minimum and maximum\) instead of a uniform +/- percentage. This would, relatively easily, result in a hybrid sensitivity/uncertainty approach that incorporates a minimum level of uncertainty information in the output. Much better would be to perform an uncertainty analysis. This may range from the fairly straightforward first-order second moment method \(e.g., as described in Glasgow, H.S., M.D. Fortney, J. Lee, A.J. Graettinger, and H.W. Reeves, 2003, "MODFLOW 2000 head uncertainty, a first-order second moment method", Ground Water, 41\(3\):342-350\) to more computationally intensive methods such as Monte Carlo Simulation \(e.g., as is available in the MODFLOW graphical user interface "Groundwater Vistas"\). Such an analysis would provide numerous benefits, including an identification of data gaps, recognition of the uncertainty in model predictions, quantification of safety factors, and improved prioritization of groundwater water management strategies. The results of uncertainty analyses are particularly valuable in situations, like the regional water planning process, where budget constraints require strict prioritization of short-term tasks and long-term strategies. \[A\] For these reasons, TPWD recommends that TWDB select and promote a standardized uncertainty analysis framework for the GAMS. \[B\] Furthermore, TPWD recommends that the sensitivity and uncertainty analyses be used to identify the most important data gaps and that TWDB attempt to collect such data. Hopefully, ongoing data collection efforts, such as the TPWD Edwards Plateau Ecoregion spring research and sampling program \(of which TWDB is a contributor\), will fill some data gaps.](#)
8. [Finalization of GAMs: Given the relative lack of data and other model constraints, Texas Parks & Wildlife Department recommends that TWDB staff be given the primary responsibility to identify future improvements and changes to the GAMs as well as judge them complete. While the GAMs should not be considered finished if the Regional Water Planning Groups \(RWPGs\) are dissatisfied with the model a technical issue and, like the population projections, should have some level of state oversight.](#)

9.

10. [Groundwater-Surface Water Interaction Determinations: The GAM reports, Water Availability Models \(WAM\) reports, and recent publications by The University of Texas Bureau of Economic Geology \(BEG; e.g., Scanlon et al., 2005, "Groundwater-Surface Water Interactions in Texas"\) describe numerous methods for quantifying existing groundwater-surface water interactions. Such data may be used to constrain the WAM and GAM predictions; however there are numerous methodologies, each with advantages and disadvantages in certain circumstances. Recognizing that a uniform approach would not be reasonable, TPWD recommends that TWDB develop a short guidance document on appropriate methods for estimating groundwater/surface water interactions. Additionally, TPWD recommends that future GAM and WAM reports briefly mention each method and present the rationale for the method\(s\) chosen.](#)
11. [In counties with overlapping GAMs, the TWDB might consider telling the Regional Water Planning Groups which GAM is considered the most accurate and, in essence, make the decision for the groups as to which GAM to use. This was a comment that many participants agreed would be useful.](#)
12. [Relating to the above question, there was a general question as to whether the differences between overlapping GAMs had been resolved, for example the central and northern Gulf Coast GAMs.](#)
13. [Many participants agreed that the use of GAMs in the Regional Water Planning process went quite well. However, one Groundwater Conservation District suggested that the GAMs for Regions A and O \(northern and southern Ogallala\) needed refinement, with "hydrograph traces that were 30 to 50 feet off in some areas."](#)
14. [Suggest looking at using "alluvial deposits" as supplies. There was a comment that this may be a surface water-groundwater interaction issue.](#)

Answers to Frequently Asked Questions

1. Why is average recharge different in various groundwater availability model run reports?

Some districts are comparing the average recharge reported in groundwater availability model runs for management plans to groundwater management area predictive model runs. The management plan runs are designed to address Texas State Water Code, Section 36.1071, Subsection (h), which states that in developing its groundwater management plan, a groundwater conservation district shall use groundwater availability modeling information provided by the Executive Administrator of the Texas Water Development Board. Both types of model runs are produced by the Texas Water Development Board staff but for different purposes. In many cases the average recharge reported is different. There are several reasons why this may occur:

- Most of the groundwater management area predictive model runs use a 30-year average recharge amount since the variability in the magnitude and frequency of droughts and wet periods on recharge is hard to predict. The years used to calculate the average recharge for these model runs are typically noted in the "Parameters and Assumptions" section of the model run report. For the groundwater conservation district management plans we extract the historical water budget information to address the various requirements of Texas State Water Code, Section 36.1071, Subsection (h). The recharge values provided for groundwater conservation district management plans is averaged from the historical calibrated transient period, which typically covers 1980 to 1999. Because we are reporting other flow conditions for this 20-year period it would be inconsistent to report a 30-year average recharge value so we report the average recharge for the same 20 years. In addition Texas State Water Code, Section 36.1071, Subsection (h) specifies that we report only the amount of recharge derived from precipitation so in some cases we have to back out other recharge factors, for example irrigation return flow, from the recharge values extracted from the model. Comparing recharge averaged for a 20-year period to a 30-year period will probably result in different values, especially if we had to "back out" other non-precipitation related recharge factors.
- The groundwater availability models are living tools and some have already been updated to improve recharge estimates. It is important to note the model version used for any particular model run. If the model version is not noted in the "Parameters and Assumptions" section of the model run report then the model used was probably based on the initial version of the official groundwater availability model. We recommend that you recognize whether you are comparing older, dated information to new and improved information.
- Each model is composed of hundreds to thousands of grid cells that do not align up to political boundaries, such as county or groundwater conservation district boundaries. Extracting information out of the model in a consistent manner has been challenging: How do we avoid double accounting? Are we using the most accurate data set? Are we reporting information based on the official aquifer boundaries, which typically contains fresher water, or are we including parts of the formation that typically contains poorer quality of water and falls outside the official aquifer boundaries? For the most part we use a geographical data extraction approach we call the "centroid method". We overlay the political boundaries on top of the model and assign each grid cell in the model to a particular political boundary based on where the center of the top of the grid cell (the centroid) falls. For example, if a cell contains two counties, the cell is assigned to the county where the centroid of the cell is located. We make every effort to avoid double accounting and we endeavor to use the most current and accurate datasets. Therefore, changes or updates to political or aquifer boundaries may have a bearing on the recharge value reported for any given model run.
- Dry cells. A model cell may go "dry" during the model run. Dry cells occur when the water level in a cell falls below the bottom of the cell. If high pumping is the primary factor for a cell going dry, the message is saying that the pumping may be too great for the aquifer in that particular area. Although some of the models use the MODFLOW rewetting package to allow cells to "rewet", many do not. It is important to

identify why a cell stays dry and address the causes. In reality, the aquifer will probably not go dry because pumping will become uneconomical before the aquifer actually is fully dewatered in any particular area. In many of the models, once a cell goes dry the cell is deactivated for the rest of the simulation. Any recharge that would have been applied to the cell that is dry is no longer considered. Therefore if two simulations are performed on the same model using average recharge, one run with low or no pumping and the other run with high pumping, the recharge extracted from the model runs might differ if ,for example, more dry cells occurred under the high pumping scenario

2. I need help figuring out rules for well spacing, what can I use?

The GAMs are regional models and use grids that are generally too large to help with analyzing individual wells on a local scale. A better tool would be an analytical model. If site specific information is not available on aquifer properties, then information from the appropriate GAM model may be used to estimate various key input parameters. We have developed a [web-based tool](#) that estimates potential drawdown of water levels in a well due to various pumping scenarios.

3. If the GAMs are too regional, should I refine the model to just my area of interest?

If additional information/data supports this and the question that you need answered requires refinement of the model grid, then it is important to review and use the regional scale GAMs to understand and adjust boundary conditions.

4. It would have been nice if they [GAMs] were done in time for the Regional Water Planning process.

The GAMs for the major aquifers were completed during the last round of regional planning. The models for the minor aquifers are in progress. Therefore, many existing GAMs were available for the major aquifers for RWP consultants to test strategy options. In order for GAM staff to develop the appropriate pumpage dataset(s), all regional supply data needs to be completed in the appropriate online database. The timing of data needed for model runs will continue to be a challenge in future planning cycles.

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5. There was a question on GAMs that extend into two or more Regional Water Planning regions and what should one region use as "boundary conditions" for pumpage in other region.

Pumpage in other regions will be based on previous state water plan supplies and strategies unless, on a case-by-case basis, we are aware of large projects along boundaries.

6. Water Availability Models (WAM) and Groundwater Availability Models (GAM) Interaction. This was mentioned and pulled out as a separate discussion topic, however most of the discussion focused on the WAM side. For example, whether the WAMs would take into account change in discharge to rivers in the naturalized flows and doing a "sensitivity analysis" on channel losses/gains.

TWDB contracted with HDR to investigate the feasibility of linking WAMs and GAMs. The study determined that linking WAMs and GAMs is not feasible.

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7. GAM Sensitivity and Uncertainty: The one-at-a-time sensitivity analyses included in the GAMS are very helpful, but could be improved by setting the minimum and maximum value of each parameter to represent some level of the uncertainty in that parameter (e.g., an expected minimum and maximum) instead of a uniform +/- percentage. This would, relatively easily, result in a hybrid sensitivity/uncertainty approach that incorporates a minimum level of uncertainty information in the output. Much better would be to perform an uncertainty analysis. This may range from the fairly straightforward first-order second moment method (e.g., as described in Glasgow, H.S., M.D. Fortney, J. Lee, A.J. Graettinger, and H.W. Reeves, 2003, "MODFLOW 2000 head uncertainty, a first-order second moment method", *Ground Water*, 41(3):342-350) to more computationally intensive methods such as Monte Carlo Simulation (e.g., as is available in the MODFLOW graphical user interface "Groundwater Vistas"). Such an analysis would provide numerous benefits, including an identification of data gaps, recognition of the uncertainty in model predictions, quantification of safety factors, and improved prioritization of groundwater water management strategies. The results of uncertainty analyses are particularly valuable in situations, like the regional water planning process, where budget constraints require strict prioritization of short-term tasks and long-term strategies. [A] For these reasons, TPWD recommends that TWDB select and promote a standardized uncertainty analysis framework for the GAMS. [B] Furthermore, TPWD recommends that the sensitivity and uncertainty analyses be used to identify the most important data gaps and that TWDB attempt to collect such data. Hopefully, ongoing data collection efforts, such as the TPWD Edwards Plateau Ecoregion spring research and sampling program (of which TWDB is a contributor), will fill some data gaps.

[A] The GAM program currently follows a standard uncertainty procedure as described in *Applied Groundwater Modeling: Simulation of Flow and Advection Transport* (1992, M. P. Anderson and W.W. Woessner, pg 246). [B] TWDB staff have discussed using PEST (Parameter ESTimation: a general-purpose, model-independent, parameter estimation and model predictive error analysis package developed by Dr. John Doherty), with the GAM technical advisory group. Budget constraints and other priorities restricted us from pursuing a research project using PEST for fiscal years 2006 and 2007. We hope to pursue this option in the future, as well as updating the GAMS every five years with additional data, as applicable and needed.

8. Finalization of GAMS: Given the relative lack of data and other model constraints, Texas Parks & Wildlife Department recommends that TWDB staff be given the primary responsibility to identify future improvements and changes to the GAMS as well as judge them complete. While the GAMS should not be considered finished if the Regional Water Planning Groups (RWPGs) are dissatisfied with the models, this is a technical issue and, like the population projections, should have some level of state oversight.

We agree.

9. Groundwater-Surface Water Interactions as Represented in the GAMS and Water Availability Models (WAMs): The GAMS and WAMs, and the data they are built on, provide boundary conditions to adjoining models. For example, recharge to the GAM is dependent on streamflows. It is unclear how future GAM predictions take into account predicted changes in streamflows from the WAMs. Similarly, the WAM naturalized flows implicitly include historical gains and losses to/from aquifers. Many aquifers are projected to experience additional drawdowns in the next 50 years. It is unclear how these projected drawdowns are recognized in the WAMs. In addition, future GAM predictions for one aquifer affect overlying and underlying aquifers, through the crossformational flow term.

This is true even for local groundwater sources that are not designated aquifers. It is unclear if projected head changes in adjoining aquifers and groundwater sources are used to project changes in cross-formational flows. TPWD recommends that updates to the GAMS and WAMs include the best predictions available of future changes in adjoining surface water bodies and groundwater sources. TPWD recognizes that this process will not always be ideal, but the best available predictions are more appropriate than historical data for defining boundary conditions to future projection models.

TWDB currently has a contract with HDR to investigate the feasibility of linking WAMs and GAMs. Possible improvements to both or either programs may result from this study.

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10. Groundwater-Surface Water Interaction Determinations: The GAM reports, Water Availability Models (WAM) reports, and recent publications by The University of Texas Bureau of Economic Geology (BEG; e.g., Scanlon et al., 2005, "Groundwater-Surface Water Interactions in Texas") describe numerous methods for quantifying existing groundwater-surface water interactions. Such data may be used to constrain the WAM and GAM predictions; however there are numerous methodologies, each with advantages and disadvantages in certain circumstances. Recognizing that a uniform approach would not be reasonable, TPWD recommends that TWDB develop a short guidance document on appropriate methods for estimating groundwater/surface water interactions. Additionally, TPWD recommends that future GAM and WAM reports briefly mention each method and present the rationale for the method(s) chosen.

GAM deliverable reports require that Section 4.5 of the report identify and quantify reaches of streams or rivers with net gains or losses and incorporate the TWDB funded research on surface water/groundwater interactions (Slade and others, 2002) into the analysis.

11. In counties with overlapping GAMs, the TWDB might consider telling the Regional Water Planning Groups which GAM is considered the most accurate and, in essence, make the decision for the groups as to which GAM to use. This was a comment that many participants agreed would be useful.

In the overlap area of GAMs the appropriate model to choose depends on how close to the edge of each of the models that major pumping occurs. We did note that in the case of the northern and central part of the Gulf Coast aquifer models, using the central part of the Gulf Coast aquifer GAM was encouraged because of concerns with pumpage used to calibrate the northern part of the Gulf Coast aquifer GAM. See [northern part of the Gulf Coast aquifer GAM](#); [central part of the Gulf Coast aquifer GAM](#); [southern part of the Gulf Coast aquifer GAM](#); [northern part of the Carrizo-Wilcox, Queen City, Sparta aquifers GAM](#); [central part of the Carrizo-Wilcox, Queen City, Sparta aquifers GAM](#); and the [southern part of the Carrizo-Wilcox, Queen City, Sparta aquifers GAM](#).

12. Relating to the above question, there was a general question as to whether the differences between overlapping GAMs had been resolved, for example the central and northern Gulf Coast GAMs.

Not yet. As soon as resources are available, GAM staff hope to re-evaluate the structure used in all of ' Coast aquifer models and reassess the calibration of all three models. See [northern part of the Gulf Co aquifer GAM](#) and [central part of the Gulf Coast aquifer GAM](#).

13. Many participants agreed that the use of GAMs in the Regional Water Planning process went quite well. However, one Groundwater Conservation District suggested that the GAMs for Regions A and O (northern and southern Ogallala) needed refinement, with "hydrograph traces that were 30 to 50 feet off in some areas."

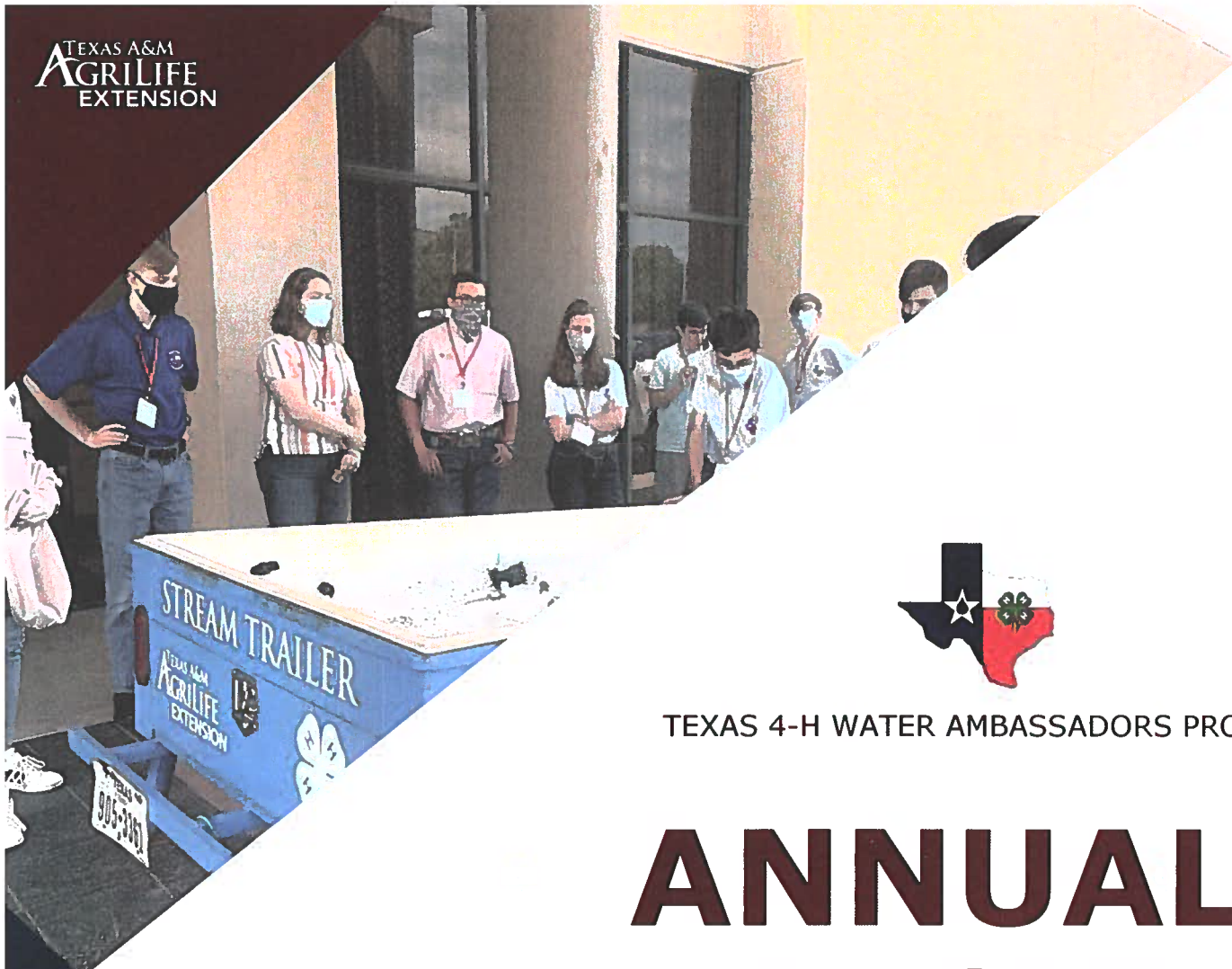
The southern part of the Ogallala aquifer is currently being revisited to add the Edwards-Trinity High Plains aquifer to the existing model. For a regional model, it is not unreasonable to have 'hydrograph traces' that are 30 to 50 feet off in some places. This is mainly due to the scale of the models. Areas with high topographic relief and/or steep groundwater gradients estimates the average values within the square mile area of the grid used in the model. See [northern part of the Ogallala aquifer GAM](#) or [southern part of the Ogallala aquifer GAM](#).

14. Suggest looking at using "alluvial deposits" as supplies. There was a comment that this may be a surface water-groundwater interaction issue.

Several regions include 'alluvial deposits' as supplies. Some of the GAMs included various surficial alluvial deposits as part of the uppermost aquifer layer. Also alluvial river deposits are roughly factored into the model through the streambed conductance factor. See [southern part of the Gulf Coast aquifer](#), [central part of the Gulf Coast aquifer](#), [Hueco Bolson aquifer](#), [West Texas Igneous and Bolsons](#), and [Presidio portion of the West Texas Bolsons](#), [Edwards-Trinity Plateau](#)(includes Cenozoic Pecos Alluvium).

[Back to List of Questions](#)

Workshop - Item #3



TEXAS 4-H WATER AMBASSADORS PROGRAM

ANNUAL REPORT 2020

A YEAR IN REVIEW

*Growing the next generation of
Texas water leaders!*



For more information contact:

David W. Smith

Texas A&M AgriLife Extension Service

Biological & Agricultural Engineering

Texas 4-H Youth Development

(979) 862-1989

davidsmith@tamu.edu

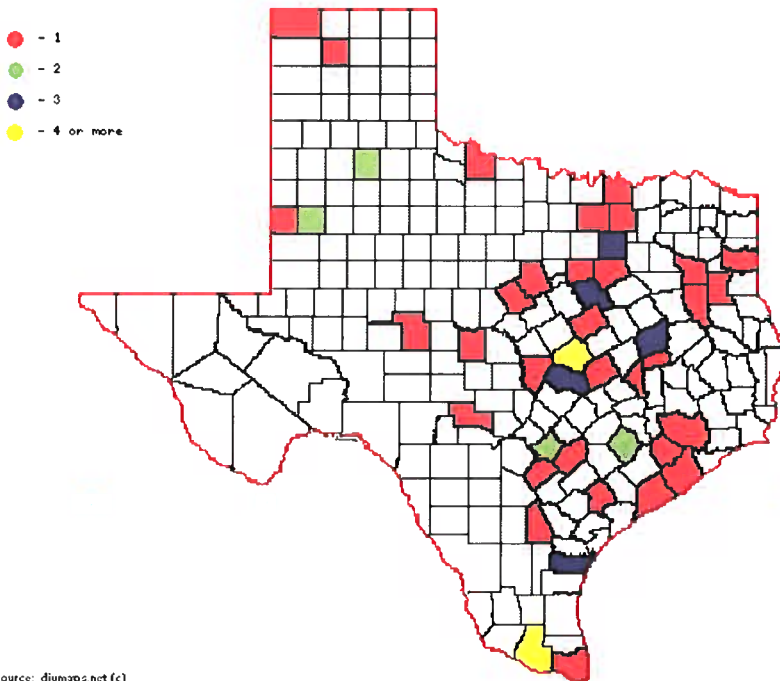
(34) NEW WATER AMBASSADORS ADDED

Since its inception in 2017, (110) youth have served as 4-H Water Ambassadors. There are currently (66) active members representing (44) Texas counties. In 2020, (34) youth were selected for service.



Tier I Ambassadors (County): Isaiah Atoe (Tarrant), Savannah Bearden (Cherokee), Sadie Berry (Comanche), Emma Canales (Bell), Krishna Chandrasekhara (Dallas), Susan (Mimi) Clot de Broissia (Dallas), Jillian Ellis (Hill), Carlie Estes (Williamson), John Gauntt (Bell), Zachary Gray (Cameron), Alexandra Guerrero (Hidalgo), Summer Halbert (Brazos), Sarah Heimeyer (Brazoria), Justin Hill (Moore), Ivy Hiner (Harris), Dustin Ho (Dallas), Allison Hogue (Terry), Jalyynn Justice (Fort Bend), Jasmina Karim (Bell), Jaraden Kearby (Tom Green), Mark (Ty) Kubecka (Matagorda), Ava Larson (Denton), Pierce Law (Guadalupe), Gabriela Ramirez (Hidalgo), Kellen Rushfeldt (McCulloch), Shelby Slavinski (Live Oak), Sierra Snowden (Floyd), Schafer Sprinkle (Grayson), Claudia Taylor (Dallam), Travis Thibodeaux (Gonzales), Grayson Thomas (Johnson), Kase Weishuhn (Colorado), Copeland Welch (Hill), and Kyle Workman (Leon).

2020/2021 4-H Water Ambassadors



(34) Tier I water ambassadors
 (20) Tier II water ambassadors
 (12) Tier III water ambassadors

Map indicates the current counties represented and number of youth

Source: diymaps.net (c)

CURRENT ROSTER AND COUNTY AFFILIATION

(18) Seniors

(19) Juniors

TIER I 4-H WATER AMBASSADORS

	First Name	Last Name	Gender	County	Class
1	Ava	Larson	Female	Denton	Freshman
2	Emma	Canales	Female	Bell	Freshman
3	Ivy	Hlner	Female	Harris	Freshman
4	Jasmina	Karim	Female	Bell	Freshman
5	Sadie	Berry	Female	Comanche	Freshman
6	Sierra	Snowden	Female	Floyd	Freshman
7	Savannah	Bearden	Female	Cherokee	Freshman
8	Alexandra	Guerrero	Female	Hidalgo	Freshman
9	Gabriela	Ramirez	Female	Hidalgo	Freshman
10	Jillian	Ellis	Female	Hill	Freshman
11	Kyle	Workman	Male	Leon	Freshman
12	Grayson	Thomas	Male	Johnson	Freshman
13	Isaiah	Atoe	Male	Tarrant	Freshman
14	John	Gauntt	Male	Bell	Freshman
15	Justin	Hill	Male	Moore	Freshman
16	Kase	Weishuhn	Male	Colorado	Freshman
17	Carlie	Estes	Female	Williamson	Sophomore
18	Shelby	Slavinski	Female	Live Oak	Sophomore
19	Sarah	Heimeyer	Female	Brazoria	Sophomore
20	Summer	Halbert	Female	Brazos	Sophomore
21	Mark (Ty)	Kubecka	Male	Maragorda	Sophomore
22	Pierce	Law	Male	Guadalupe	Sophomore
23	Copeland	Welch	Female	Hill	Junior
24	Jaraden	Kearby	Female	Tom Green	Junior
25	Kellen	Rushfeldt	Female	McCulloch	Junior
26	Susan (Mimi)	Clot de Broissia	Female	Dallas	Junior
27	Schafer	Sprinkle	Male	Grayson	Junior
28	Travis	Thibodeaux	Male	Gonzales	Junior
29	Zachary	Gray	Male	Cameron	Junior
30	Allison	Hogue	Female	Terry	Senior
31	Claudia	Taylor	Female	Dallam	Senior
32	Jalynn	Justice	Female	Fort Bend	Senior
33	Dustin	Ho	Male	Dallas	Senior
34	Krishna	Chandrasekhara	Male	Dallas	Senior

TIER II 4-H WATER AMBASSADORS

	First Name	Last Name	Gender	County	Class
1	Vie Vie	Bjornhard	Female	Collin	Sophomore
2	Madeljine	Brown	Female	Willbarger	Sophomore
3	Lily	Ford	Female	Hidalgo	Sophomore
4	Kylee	Jackson	Female	Terry	Sophomore
5	William (Joshua)	Jones	Male	Smith	Sophomore
6	Jahongir	Karim	Male	Bell	Sophomore
7	Javier "Andy"	Vela	Male	Nueces	Sophomore
8	Bailea	Reeves	Female	Rusk	Junior
9	Ava	Shelton	Female	Williamson	Junior
10	Anna	Vela	Female	Hidalgo	Junior
11	Sarah	Wood	Female	Bell	Junior
12	Matthew	Franklin	Male	Williamson	Junior
13	Jaxon	Grove	Male	Nueces	Junior
14	Trent	Morris	Male	Madison	Junior
15	William	Wright	Male	Victoria	Junior
16	Leigha	Adair	Female	Hill	Senior
17	Caitlyn	Goward	Female	Kerr	Senior
18	Kendal	Workman	Female	Leon	Senior
19	Seth	Jones	Male	McLennan	Senior
20	Cole	Reopelle	Male	Wilson	Senior

TIER III 4-H WATER AMBASSADORS

	First Name	Last Name	Gender	County	Class
1	Tyann	Phillips	Female	Floyd	Junior
2	Sehrsha	Glover	Female	Erath	Junior
3	Rowdy	Kunz	Male	Colorado	Junior
4	Carson	Manning	Male	Guadalupe	Junior
5	Macy	Downs	Female	Yoakum	Senior
6	Reagan	Fox	Female	Nueces	Senior
7	Annika	Stevens	Female	Leon	Senior
8	Brayden	DeBorde	Male	Ellis	Senior
9	Hayden	Holder	Male	Burnet	Senior
10	Brentton	Jenkins	Male	Harrison	Senior
11	Gabriel	Ramthun	Male	Milam	Senior
12	Luke	Read	Male	Bell	Senior

(13) Sophomores

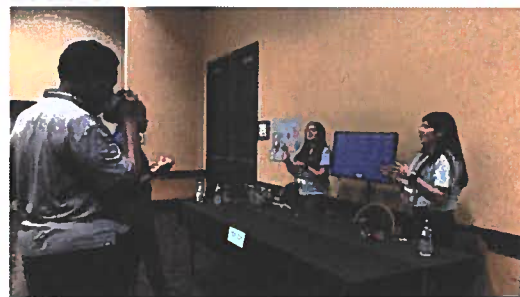
(16) Freshman

UP TO (30) YOUTH TO BE ADDED IN 2021

TIER I 4-H2O LEADERSHIP ACADEMY



Due to COVID-19, travel and gathering restrictions postponed the usual 8-day tour of Texas. However, most of the new water ambassadors gathered in College Station for an orientation and training. Presentations focused on water resources, law, conservation and management. New ambassadors also participated in hands-on learning rotations led by experienced ambassadors who demonstrated educational activities that they can do in their communities.



A virtual academy was held July 15 for those who were unable to participate in the face-to-face academy.

JULY 11-12 COLLEGE STATION

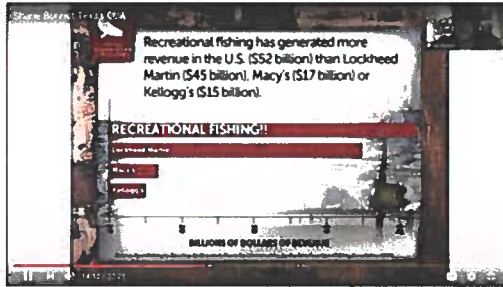
TIER II 4-H2O LEADERSHIP ACADEMY



Christi Taylor (Texas AgriLife Extension Service - Texas Community Watershed Partners) presented on green infrastructure, wetland restoration, community planning, watershed coordination and ecosystem services.



Megan Imme, Mariah Waters and Cindy Wilems (Galveston Bay Foundation) presented information about bays, estuaries, freshwater inflows, and wetlands and showed several live fish, shrimp and crabs that depend upon a healthy estuary.



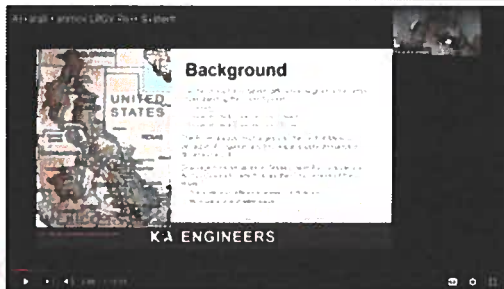
Shane Bonnot (Advocacy Director - Coastal Conservation Association - Texas) presented on the mission of CCA Texas and many of their efforts such as funding research to enhance knowledge of fisheries, raising funds to support marine science scholarships, funding internships in conjunction with the Texas Parks and Wildlife Department, assisting with artificial reefs, and monitoring the quality and quantity of freshwater inflows into the bays and estuaries.

This virtual academy (for second-year water ambassadors) focused on water issues along the Texas Gulf Coast. Guest speakers represented the Texas Community Watershed Partners, Galveston Bay Foundation and Coastal Conservation Association—Texas.

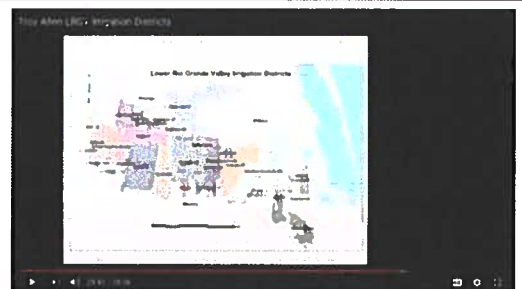
June 30

Third-year water ambassadors learned about water issues and concerns in the Lower Rio Grande Valley. Speakers discussed international water treaties, water conveyance infrastructure, agricultural irrigation practices and technologies, irrigation districts, and practices for improving Arroyo Colorado water quality.

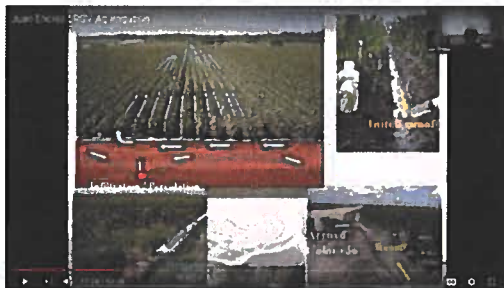
July 1



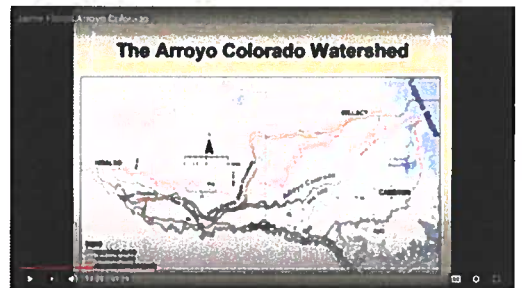
Dr. Askarali Karimov (Technical Director - Water Resources & Hydrologic Engineering with KPA Engineers in Temple) discussed the evolution of water laws and treaties between the US and Mexico, major tributaries to the Rio Grande River, and how water is allocated between the two countries.



Troy Allen (Lower Rio Grande Valley Water District Managers Association and Manager with Delta Lakes Irrigation District) discussed the water conveyance system and water rights regime in the Lower Rio Grande Valley, and discussed how water is pumped, conveyed and distributed.



Dr. Juan Enciso (Texas A&M AgriLife Research) gave an overview of agricultural irrigation methods and water conservation strategies in the Lower Rio Grande Valley. He also discussed using UAVs for detecting water stress.

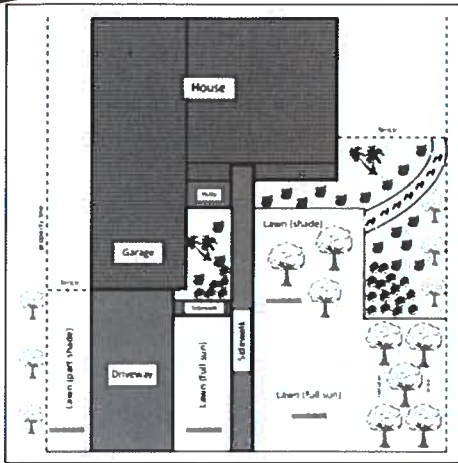


Jaime Flores (Program Coordinator and Watershed Coordinator for the Arroyo Colorado Project, Texas Water Resources Institute) presented about the Arroyo Colorado Watershed and discussed water pollution, watershed planning, and strategies for improving the water quality of the Arroyo Colorado.

TIER III 4-H2O LEADERSHIP ACADEMY

FALL RETREAT—TEXAS 4-H CONFERENCE CENTER

Each year, 4-H Water Ambassadors gather in the fall for hands-on learning, leadership training and networking opportunities. This year's retreat focused on design, construction, operation and testing of a seven-station residential landscape irrigation system. Ambassadors learned about flow rate, static and dynamic pressure, sources of pressure loss within a pipe system, how to size pipe, different types of sprinkler heads and drip irrigation products and their applications, how to install and wire control valves, and how to install and program an irrigation controller. They also learned how to measure sprinkler application rate and distribution efficiency. This was a great project for teaching about landscape water conservation and efficiency!



Landscape Design



Ground truthing and measurement



Installing the irrigation mainline



Installing lateral pipe for each station



Installing control valves and sprinklers



Installing drip irrigation tubing



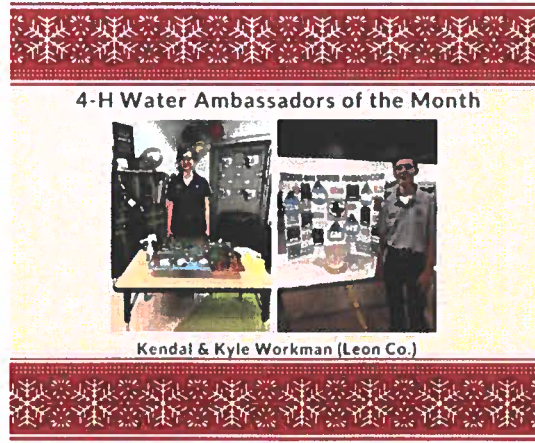
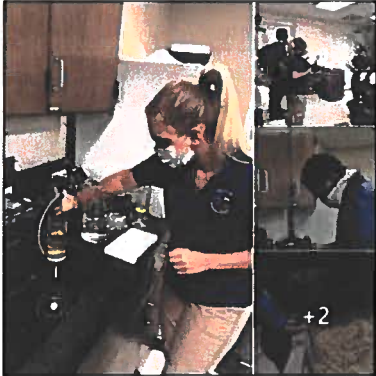
Measuring system performance

AMBASSADOR SERVICE AND EDUCATION

2020 was a challenging year for ambassadors as many education and service opportunities were cancelled due to COVID-19. Despite the hurdles, they did a terrific job of adapting such as utilizing virtual learning platforms and social media to educate others in their communities and beyond.

2,400 hours of education/service

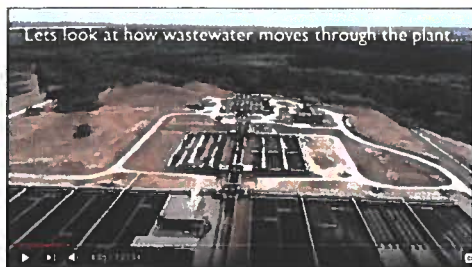
17,650 youth and adult reached



\$65,600—VALUE OF VOLUNTEER SERVICE

CONTINUING EDUCATION VIRTUAL SEMINARS

Water industry and education professionals delivered several seminars throughout the year for water ambassadors to help them stay engaged and learning about Texas water issues.



SEMINAR TITLE	PRESENTER
Watershed Protection and Planning	David Smith, Texas A&M AgriLife Extension
Virtual Tour of SAWS Clouse Water Recycling Center	Heather Ginsburg, San Antonio Water System
Tips for Creating Education Videos	Callie Henly Cline, Texas 4-H Youth Development
Municipal Water Conservation	David Smith, Texas A&M AgriLife Extension
Agricultural Water Conservation	David Smith, Texas A&M AgriLife Extension
Groundwater Management in Texas	Julia Stanford, Texas Alliance of Groundwater Districts
Hydroponics 101	Molly McKinney, Texas A&M AgriLife Extension
High Plains Water District	Katherine Drury & Victoria Messer Whitehead, HPWD
Regional & State Water Planning	Sarah Backhouse, Texas Water Development Board
Aquaponics	Dr. Joe Masabni, Texas A&M AgriLife Extension

The 4-H Water Ambassadors Program Advisory Committee met May 12 and December 11 to review program activities, provide constructive feedback and offer suggestions to guide the ongoing success and sustainability.

ADVISORY COMMITTEE MEMBERS

David Smith—Texas A&M AgriLife Extension	Adeline Fox—Texas Water Conservation Association
Jay Bragg—Texas Farm Bureau	Dianne Meadows—Texas A&M AgriLife Extension
Michelle Wood-Ramirez—Tarrant Regional Water District	Whitney Grantham—Texas A&M AgriLife Extension
Preston Sturdivant—Texas A&M AgriLife Extension	Roxanna Reyna—Texas A&M AgriLife Extension
Julia Stanford—Texas Alliance of Groundwater Districts	Katherine Drury—High Plains Water District
Michelle Cooper—Southern Ogallala Conservation & Outreach Prog.	Megan Haas—Brazos Valley Groundwater Conservation District
Dirk Aaron—Clearwater Underground Water Conservation District	Stephanie Keith—Middle Trinity Groundwater Conservation Dist.
Jennifer Thayer—Lone Star Groundwater Conservation District	Molly McKinney—Former 4-H Water Ambassador, Student Tech
	Riley Calk—Former 4-H Water Ambassador, Student Tech

ADVISORY GROUP MET MAY 12 AND DECEMBER 11

PROGRAM SPONSORS

The Texas 4-H Water Ambassadors program is funded through private sponsorships. Funds are used solely for the mission and objectives of the Texas 4-H Water Ambassadors Program. Thanks to all the organizations below for their support!



Thank You 2020 Sponsors!



































































Like us on social media and keep up with our 4-H Water Ambassadors!



@TX4HWaterAmbassador



@4H2O_Ambassador



4h_water_ambassadors

Sponsorships are made to the Texas 4-H Youth Development Foundation—a 501(c)(3) nonprofit organization. Donations to the Foundation are tax deductible to the fullest extent allowed by law.

A LOOK AHEAD TO 2021

Through an application process, each spring up to (30) youth are selected from across Texas to serve as 4-H Water Ambassadors. Those chosen participate in a Tier I 4-H2O Leadership Academy – a multi-day tour of Texas aimed at exposing youth to a wide diversity of water issues. Following the Academy, youth commit to a minimum of (40) hours of water related education and service in their communities. Those who complete their service commitment may continue their role as 4-H Water Ambassador in successive years until they graduate high school and are no longer age-eligible to serve. Year 2 (Tier II), year 3 (Tier III) and year 4 (Tier IV) 4-H Water Ambassadors participate in 4-H2O Leadership Academies which focus on a different region of Texas, and continue their education commitment throughout their remaining terms of service.

IMPORTANT DATES AND DEADLINES

- * April 1, 2021—Applications open
- * May 15, 2021—Applications close
- * June 1, 2021—Applicants notified of acceptance status
- * July 1, 2021—\$250 participation fee due
- * Tier I 4-H2O Leadership Academy (July—Dates TBD)

HOW TO APPLY

Check out the informational brochure and online application instructions at:

<https://texas4-h.tamu.edu/projects/water/> or visit

<http://www.texas4hwaterambassadors.com>



TEXAS 4-H YOUTH WATER AMBASSADOR PROGRAM SPONSORSHIP LEVELS

Signature: \$5,000

Name and logo recognition on the following:

- Texas 4-H Water Ambassador T-Shirt/Wearables
- All Texas 4-H Water Ambassador print materials and quarterly electronic Texas 4-H2O Ambassador Newsletter
- Opportunity to speak at 4-H2O Leadership Academy Kick-Off Event
- Access to 4-H2O Ambassador Program representative to present at organization/company event (subject to availability)
- 4 social media post

Legacy: \$2,500

Name and logo recognition on the following:

- All Texas 4-H Water Ambassador print materials and quarterly electronic Texas 4-H2O Ambassador Newsletter
- Opportunity to speak at 4-H2O Leadership Academy Kick-Off Event
- 2 social media post

Advocate: \$1,000

Name and logo recognition on the following:

- All Texas 4-H Water Ambassador print materials and quarterly electronic Texas 4-H2O Ambassador Newsletter
- 1 social media post

Stewardship: \$500

Name recognition on the following:

- All Texas 4-H Water Ambassador print materials and quarterly electronic Texas 4-H2O Ambassador Newsletter



Texas 4-H Youth Water Ambassador Program Donor Commitment Form

Donor Information

Company: _____

Name and Title: _____

Address: _____

City, State, Zip: _____

Phone: _____

Email Address: _____

Sponsorship Opportunities

Signature

Legacy

Advocate

Stewardship

Payment Information

I have contributed Online at www.texas4hfoundation.org/give

Please choose "Water Ambassadors" in the Projects & Programs drop down menu.

Please invoice me for payment within 10 business days.

I have enclosed a check made payable to the Texas 4-H Youth Development Foundation.

Please charge my credit card for the selected amount.

Name: _____ Credit Card Number: _____

Exp. Date: ____/____ CVV: _____ Zip: _____

Please return this completed form to the Texas 4-H Youth Development Foundation:

USPS:
P.O. Box 11020
College Station, TX 77842

Minutes - Item #3

Clearwater Underground Water Conservation District Meeting
700 Kennedy Court
Belton, TX
Wednesday, December 9, 2020
Minutes

In accordance with Governor Abbott's declaration of the COVID-19 public health threat, action to temporarily suspend certain provisions of the Texas Open Meetings Act, and Executive Order, a quorum of CUWCD's Board of Directors held a regular Board meeting by telephonic conference call and, for redundancy, video conference on Wednesday, December 9, 2020 at 1:30 p.m. The meeting originated from the Clearwater UWCD Building, located at 700 Kennedy Court, Belton, Texas.

Board Members Present:

Leland Gersbach, President, Pct. 1
David Cole, Vice President, At Large
Gary Young, Secretary, Pct. 2
Jody Williams, Director, Pct.
Scott Brooks, Director, Pct. 4

Absent:

Staff:

Dirk Aaron, General Manager
Shelly Chapman, Admin. Manager

Guest: (remote)

Mike Keester, LRE Water
Sandra Blankenship – WCID 1 – Director

Workshop convened with President, Leland Gersbach at 1:34 p.m.

Workshop Item #1. Receive information related to Groundwater Management Area 8, related to Joint Planning and Development of the Desired Future Conditions.

Dirk Arron gave a brief update on proposed DFCs. The District will hold the public hearing on the proposed DFC on January 13th. The public hearing will be posted on December 23rd. He commented that this is not the final DFC.

Workshop closed at 2:07 p.m. and Board Meeting convened with President, Leland Gersbach at 1:38 p.m.

1. *Invocation and Pledge of Allegiance.*

Vice President, David Cole, gave the invocation.
Secretary, Gary Young, led the Pledge of Allegiance.

2. *Public Comment.*

No public comments.

3. *Approve minutes of the November 11, 2020 Board meeting and Workshop.*

Board members received the minutes of the November 11, 2020 Board meeting and workshop in their Board Packet to review prior to the meeting.

Secretary, Gary Young, moved to approve the minutes of the November 11, 2020 Board meeting and Workshop. Vice President, David Cole, seconded the motion.

Motion carried 5-0.

4. *Discuss, consider and take appropriate action if necessary, to accept the monthly Financial Report for November 2020 as presented.*

Board members received the monthly financial report for November 2020 in their Board Packet to review prior to the meeting.

Vice President, David Cole, moved to accept the monthly financial report for November 2020 as presented. Secretary, Gary Young, seconded the motion.

Motion carried 5-0.

5. *Discuss, consider and take appropriate action if necessary, to accept the monthly Investment Fund Account report as presented.*

Board members received the monthly investment fund account report for November 2020 in their Board Packet to review prior to the meeting.

Director, Scott Brooks, moved to accept the monthly investment fund account report for November 2020 as presented. Director, Jody Williams, seconded the motion.

Motion carried 5-0.

6. *Discuss, consider and take appropriate action if necessary, to approve the FY21 line item budget amendments as requested.*

No budget amendments requested. No action needed.

7. *Discuss, consider and take appropriate action if necessary, to swear in Board of Directors for Precincts 1 & 3 and administer oaths of office.*

Shelly Chapman, Notary Public, administered the “Statement of Office” and “Oath of Office” to Jody Williams (Director, Precinct 3) and Leland Gersbach (Director, Precinct 1).

Dirk recapped the process and guidelines the District followed to properly post and notice the election.

8. *Discuss, consider and take appropriate action if necessary, to set the calendar dates for 2021.*

Staff looked at the calendar to set dates for 2021 Board meetings. Dirk presented the proposed dates to include regular Board meetings, tentative dates in August to approve FY21 budget/tax rate, tentative date for Bell County Water Symposium, and tentative dates for TAGD Groundwater Summit. Dates proposed are as follows:

Board Meeting	Wednesday	Jan. 13, 2021
Board Meeting	Wednesday	Feb. 10, 2021
Board Meeting	Wednesday	Mar. 10, 2021
Board Meeting	Wednesday	Apr. 14, 2021
Board Meeting	Wednesday	May 12, 2021
Board Meeting	Wednesday	June 09, 2021
Board Meeting	Wednesday	July 14, 2021
Board Meeting	Wednesday	Aug. 11, 2021
Tax Rate Hearing	Wednesday	Aug. 25, 2021
Water Summit	Tues-Thurs	Aug. 31-Sept. 2, 2021 (maybe? TBD)
Board Meeting	Wednesday	Sept. 15, 2021
Board Meeting	Wednesday	Oct. 13, 2021
Water Symposium	Wednesday	Nov. 3, 2021 (Tentatively? TBD))
Board Meeting	Wednesday	Nov. 10, 2021
Board Mtg/Christmas	Wednesday	Dec. 08, 2021

Staff also looked at the Holiday Schedule of State and Local Government Entities. State and Local Government Entities currently receive 13 standard holidays per year. Dirk recommended CUWCD 2021 schedule reflect 8 standard holidays. Holidays proposed are as follows:

New Years Day	Friday	Jan 1, 2021
Memorial Day	Monday	May 31, 2021
Independence Day	Monday	July 5, 2021
Labor Day	Monday	Sept 6, 2021
Thanksgiving Day	Thursday	Nov 25, 2021
Thanksgiving	Friday	Nov 26, 2021
Christmas Holiday	Thursday	Dec 23, 2021
Christmas Holiday	Friday	Dec 24, 2021

Secretary, Gary Young, moved to set the 2021 calendar dates and holiday schedule as presented. Director, Scott Brooks, seconded the motion.

Motion carried 5-0.

9. ***Discuss, consider and take appropriate action if necessary, to support the Texas Alliance of Groundwater Districts proposed Amicus Brief.***

Dirk presented information from TAGD regarding the Amicus Brief request. He explained what an Amicus Brief is and the importance of supporting the TAGD proposed Amicus Brief.

After some discussion, the Board agreed to pledge up to \$500 in support of the proposed Amicus Brief.

Director, Jody Williams, moved to pledge up to \$500 in support of the Amicus Brief. Director, Scott Brooks, seconded the motion.

Motion carried 5-0.

10. ***Discuss, consider and take appropriate action if necessary, to approve a waiver submitted by Jason Bragg and Tom Vitek for an existing well to encroach an adjacent property to less than the required 50-foot setback per District Rule 9.5.5(a)(e) Exceptions to Spacing Requirements.***

Dirk explained the applicants request for an exception to the setback of 50 feet of a well from the property lines. He noted that the applicant provided the required waivers from the adjacent property owners. Waivers have been signed and notarized. Dirk stated that the well (E-02-510G) satisfies all requirements for an exempt grandfathered well and no permit is required. This well will be more than 100ft from any other existing wells on adjacent properties. Both property owners have indicated that they intend to share the well for 2 homes. They will be required to record the agreement with the District and at the County Clerks office.

Dirk recommended the Board approve the request and noted all requirements per district rule 9.5.5(a)(e) have been met and submitted.

Vice President, David Cole, moved to approve the waiver submitted by the applicant. Director, Scott Brooks, seconded the motion.

Motion carried 5-0.

12. ***General Manager's Report concerning office management and staffing related to District Management Plan³.***

- Newsletter to go out next week.
- Permit renewals will go out this month.
- The new website is almost complete. If all the bugs are worked out it will go live on January 8th. Dirk will showcase it at the next meeting.
- Waiting confirmation and acceptance of the Management Plan.
- Adoption of the financial management policy is set for the next meeting. At that time staff will discuss the need for ACH payments for health insurance.
- Proposed DFC Public Hearing will be next month. Dirk will invite stakeholders to attend.
- Mike Keester and Dirk will demo the Aquifer Analysis Tool to illustrate the way the District can monitor the trends in the Aquifer.
- Monitor Well program needs to be evaluated. Will look at cost vs. efficiency.

13. ***Receive monthly report and possible consideration and Board action on the following:***

- a) ***Drought Status Reports***
- b) ***Education Outreach Update***
- c) ***Monitoring Wells***
- d) ***Rainfall Reports***
- e) ***Well Registration Update***
- f) ***Aquifer Status Report & Non-exempt Monthly Well Production Reports***

Dirk discussed the drought status report.

(Copies of the Monthly Staff Reports were given to the Board Members to review. No action required. Information items only.)

14. ***Director comments and reports³.***

- **Gary Young:** Gary mentioned that he approved/signed the replacement check for S&W Health Plan that was lost. This opens doors to look at other banking options with ACH payments. This will be addressed next month. Gary contacted the bank and they refunded the “stop payment” fee for the missing check.
- **David Cole:** Wished Dirk and Staff a Merry Christmas. Thanked Dirk for being a true asset to the District.
- **Jody Williams:** Wished everyone a Merry Christmas and Happy New Year.
- **Scott Brooks:** No comment.
- **Leland Gersbach:** No comment.

15. *Discuss agenda items for next meeting.*

- Public Hearing Mgmt. Plan
- Public Hearing Proposed DFC
- N2 permits

16. *Set time and place of next meeting.*

Wednesday, January 13, 2021

17. *Adjourn.*

Board meeting adjourned and Workshop convened with President, Leland Gersbach, at 3:05 p.m.

Leland Gersbach, President

ATTEST:

Gary Young, Secretary or
Dirk Aaron, Assistant Secretary

DFC Public Hearing - Item #4

**CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT
NOTICE OF PUBLIC MEETING ON PROPOSED DESIRED FUTURE
CONDITIONS
January 13, 2021**

In accordance with Governor Abbott's declaration of the COVID-19 public health threat, action to temporarily suspend certain provisions of the Texas Open Meetings Act, and Executive Order, a quorum of CUWCD's Board of Directors will hold Public Hearing by telephonic conference call and, for redundancy, videoconference. The public may access this meeting and make public comment by phone, pc, tablet and/or notebook using the contact information and instructions on pages 2 of this notice.

NOTICE IS HEREBY GIVEN to all interested persons in Bell County, Texas:

That the Board of Directors of the Clearwater Underground Water Conservation District ("District") will hold a public meeting, accept public comment, and consider the proposed Desired Future Conditions for the groundwater resources within the District pursuant to Section 36.108(d-2) of the Texas Water Code.

The proposed DFCs approved by the district representatives of GMA 8 are described in terms of acceptable drawdown levels for each subdivision of the Trinity Aquifer and maintaining spring flow for Edwards BFZ Aquifer.

The acceptable levels of drawdown for each subdivision of the Trinity Aquifer are measured in terms of water level drawdowns in feet over the current planning cycle which extends from 2010 to 2070. For CUWCD, the relevant proposed DFCs for the geologic layers of the Trinity Aquifer include the following:

- From estimated year 2010 conditions, the average drawdown of the Glen Rose Layer should not exceed approximately 83 feet by the year 2080.
- From estimated year 2010 conditions, the average drawdown in the Hensell Layer should not exceed approximately 145 feet by the year 2080.
- From estimated year 2010 conditions, the average drawdown in the Hosston Layer should not exceed approximately 375 feet by the year 2080.

For the northern segment of the Edwards (Balcones Fault Zone) Aquifer within GMA 8 the proposed DFCs within CUWCD boundaries are as follows:

- Maintain at least 100 acre-feet per month of stream/spring flow in Salado Creek during a repeat of the drought of record in Bell County.

The District developed the proposed Desired Future Conditions as required by Chapter 36 of the Texas Water Code with the other groundwater conservation districts in Groundwater Management Area 8. The other districts within Groundwater Management Area 8 include: Central Texas Groundwater Conservation District; Clearwater Underground Water Conservation District; Middle Trinity Groundwater Conservation District; Northern Trinity Groundwater Conservation District; Post Oak Savannah Groundwater Conservation District; Prairielands Groundwater Conservation District; Red River Groundwater Conservation District; Saratoga Underground Water Conservation District; Southern Trinity Groundwater Conservation District; and Upper Trinity Groundwater Conservation District.

The public meeting will be held on Wednesday, January 13, 2021, at 1:30 p.m. at the Clearwater Underground Water Conservation District Office, located at 700 Kennedy Court, Belton, TX 76513. Comments on the proposed Desired Future Conditions may be presented in written or verbal form at the meeting. Written comments may also be submitted prior to the meeting by email to toby.maff at P.O. Box 1989, Belton, TX 76513, or by hand-delivery to 700 Kennedy Court, Belton, TX 76513.

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Questions or requests for additional information should be directed to Dirk Aaron by phone at (254) 933-0120, by email to daaron@cuwcd.org, by mail to P.O. Box 1989, Belton, TX 76513, or in person at 700 Kennedy Court, Belton, TX 76513. The District is committed to compliance with the Americans with Disabilities Act (ADA). Any person who needs special accommodations should contact District staff at (254) 933-0120 at least 24 hours in advance if accommodation is needed.

Dated the 23rd day of December, 2020



By: _____

Dirk Aaron
General Manager/Assistant Secretary
Clearwater Underground Water Conservation District

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GUIDELINES FOR PUBLIC PARTICIPATION
IN CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT
BOARD MEETING, WORKSHOP AND
PUBLIC HEARINGS

Clearwater UWCD, in order to maintain governmental transparency and continued government operation while reducing face-to-face contact for government open meetings, is implementing measures according to guidelines set forth by the Office of the Texas Governor, Greg Abbott. In accordance with section 418.016 of the Texas Government Code, Governor Abbott has suspended various open-meetings provisions that require government officials and members of the public to be physically present at a specified meeting location. CUWCD's adherence to the Governor's guidance temporary suspension procedure ensures public accessibility and opportunity to participate in CUWCD's open meeting, workshop and public hearings.

Members of the public wishing to make public comment during the meeting must register by emailing schapman@cuwcd.org prior to 11:30 a.m. on January 13, 2020. This meeting will be recorded and the audio will be available online <http://www.cuwcd.org> or by requesting a copy from daaron@cuwcd.org. A copy of the agenda packet is available on the CUWCD's website prior to the meeting.

You may join CUWCD's Board Public Hearing as follows:

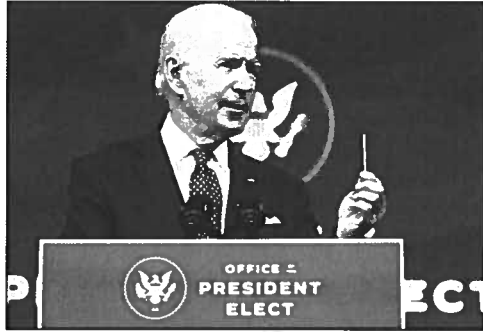
- ✓ Clearwater UWCD Notice Of Public Meeting On Proposed Desired Future Conditions
Wed, Jan 13, 2021 1:30 PM - 2:30 PM (CST)
- ✓ **Join the Public Hearing from your computer, tablet or smartphone.**
<https://global.gotomeeting.com/join/538202325>
- ✓ **You can also dial in using your phone.**
United States (Toll Free): [1 877 309 2073](tel:18773092073) Access Code: 538-202-325
- ✓ New to GoToMeeting? Get the app now and be ready when the meeting starts:
<https://global.gotomeeting.com/install/538202325>

NATION

Biden: Trump 'failed' to shore up the nation's cybersecurity

BY ALEXANDRA JAFFE AND MEG KINNARD ASSOCIATED PRESS

WILMINGTON, Del. President-elect Joe Biden on Tuesday assailed the Trump administration for failing to fortify the nation's cyber defenses...



President-elect Joe Biden speaks Tuesday at The Queen Theater in Wilmington, Del.

Biden, who is being briefed on high-level intelligence in preparation for taking office next month, said planning for the hack began as early as 2019...

The breach of the Treasury Department began in July, but experts believe the overall hacking operation began months earlier when malicious code was slipped into updates to popular software that monitors computer networks of businesses and governments...

with allies to set up international rules to hold nation states accountable for cyberattacks and vowed that his administration would make cybersecurity a top priority...

The president-elect also expressed empathy for families who have struggled this year through the pandemic and resulting economic uncertainty...

ELECTION 2020

Texas AG pushed to rescind Houston virus relief funding

BY ACACIA CORONADO REPORT FOR AMERICA AP

AUSTIN Texas Attorney General Ken Paxton asked Trump administration officials to rescind federal virus relief funding that Houston used to expand people's voting options...

become the latest example of the Republican attorney general's efforts to keep in place Texas' strict rules requiring most voters to cast ballots in person, even during a pandemic...

Harris County Elections Administrator Isabel Longoria said the way the money was used helped protect elections workers and voters from the coronavirus...

"We respectfully ask the department to scrutinize its award of CARES Act funding to Harris County in light of the county's stated intent to use federal funding in violation of state law...

"Just as intended, voters had more options to vote without jeopardizing their health," Longoria said in a statement...

DOMESTIC TERRORISM

FBI: White supremacists plotted attack on power grid

BY AMY FORLITI ASSOCIATED PRESS

MINNEAPOLIS White supremacists plotted to attack power stations in the southeastern U.S. and an Ohio teenager who allegedly shared the plan said he wanted the group to be "operational" on a fast-tracked timeline...

The teenager wanted the group to be "operational" by the 2024 election because he believed it was likely a Democrat would win...

There were plans to carry it out in the summer of 2021, the affidavit states. One group member, a Texas native who was a Purdue University student at the time...

texts of whitecans left Tuesday morning. The father of one of the men had no comment.

The Best Holiday Shopping in Central Texas! Apparel, Gifts, Home Decor, Children's Toys & Clothing. THE HUB Downtown Temple.

CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT NOTICE OF PUBLIC MEETING ON PROPOSED DESIRED FUTURE CONDITIONS January 13, 2021

In accordance with Governor Abbott's declaration of the COVID-19 public health threat, action to temporarily suspend certain provisions of the Texas Open Meetings Act and Executive Order...

NOTICE IS HEREBY GIVEN to all interested persons in Bell County, Texas that the Board of Directors of the Clearwater Underground Water Conservation District...

- From estimated year 2010 conditions the average drawdown of the Glen Rose Layer should not exceed approximately 83 feet by the year 2060. From estimated year 2010 conditions the average drawdown in the Hensell Layer should not exceed approximately 145 feet by the year 2060...

The District developed the proposed Desired Future Conditions as required by Chapter 36 of the Texas Water Code with the other groundwater conservation districts in Groundwater Management Area 8...

GUIDELINES FOR PUBLIC PARTICIPATION IN CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT BOARD MEETING, WORKSHOP AND PUBLIC HEARINGS

Clearwater UWCOD in order to maintain governmental transparency, and continued government operation while reducing face-to-face contact for government open meetings is implementing measures according to guidance from the Office of the Texas Governor Greg Abbott...

- Join the Public Hearing from your computer, tablet or smartphone. Clearwater UWCOD Board Public Hearing as follows: Clearwater UWCOD Notice of Public Meeting On Proposed Desired Future Conditions Wed Jan 13 2021 1:30 PM - 2:30 PM CST.

Lonesome Pine Nursery. Pansies, Succulents, Fruit Trees, New Shipment of Shade Trees & Shrubs. Closed December 24th - 26th. Mon. - Sat. 9am - 5pm. 3120 E. Adams, Temple • 254-791-0884

CORRECTION

The Page 1A story "BISD choir and orchestra students win honors" in Tuesday's edition misstated the classes of three students...

TEXAS TWO-STEP Monday night's Texas 2-Step numbers 67-26-33 Bonus 8474. CASH 5 Monday Night's Cash 5 numbers 9-22-23-26-35

NOW OPEN Back to Life Detailing www.back-to-life-detailing.com. Basic & Premium Detailing Packages, Ceramic & Graphene Coatings, Interior Detailing, Minor Scratch Removal, Headlight Restoration, Pet Hair Removal & More. 920 S 57th St • Temple • (254) 899-8007

Advanced Groundwater Solutions
Item #5

Basic Statement of Qualifications for Advanced Groundwater Solutions, LLC (AGS)

Advanced Groundwater Solutions, LLC (AGS) specializes in professional groundwater and hydrogeologic consulting. AGS was formed in January 2021 by James Beach, PG and John Nelson, PG, who have worked together professionally for 21 years at their previous firms, LBG-Guyton Associates and WSP. LBG-Guyton was acquired by WSP in 2017, and after three years with a fast growing international engineering firm, James and John formed AGS as a way of providing specialized service to clients in the groundwater and water industry.

James and John have been trusted advisors to their clients since 1989. With advanced degrees and 60 years of combined and complimentary experience, they offer clients broad groundwater expertise. Their clients have included water supply entities, groundwater conservation districts, municipalities, industrial and manufacturing companies, river authorities, utility districts, engineering firms, attorneys, and many other entities.

Services

Services to Groundwater Conservation Districts

- Developing rules and management plans
- Reviewing hydrogeologic reports
- Assessing well spacing and special conditions
- Developing monitoring plans and assessing aquifer conditions
- Modeling, quantitative hydrogeology, Desired Future Conditions
- Permit review and impact analysis
- TWDB GAM use, refinement, and development
- Public and stakeholder interaction and education
- Expert witness for contested case hearings

Hydrogeologic Assessments

- Assimilation of public and commercial hydrogeologic data and logs
- Geophysical and geologic evaluations
- Developing conceptual models for potential groundwater sources
- Evaluating sustainability of groundwater supplies
- Brackish groundwater resource studies
- Assessment of groundwater/surface water interaction
- Field measurements, groundwater sampling, stream flow gauging and tracer tests



Groundwater Availability Studies

- Assimilation of historical aquifer demands, usage and monitoring data
- Assessing aquifer characteristics and recharge
- Evaluating impacts to aquifer and streams
- Groundwater recharge estimation

- Brackish groundwater studies, development, and modeling
- Evaluation of water level decline in wells and wellfields

Groundwater Modeling

- TWDB GAM use and development
- Implementation of field programs to develop data for models
- Construction and validation of groundwater availability models
- Evaluation and modeling of long-term water supplies and wellfields
- Stakeholder education and interaction
- Quantitative assessments for permitting

Groundwater Supply Development and Management

- Assimilation of data to determine feasibility of new sources
- Test drilling programs
- Design, execution, and evaluation of pumping tests
- Well and pump equipment design
- Well specifications and construction oversight
- Assessment of water quality
- Permitting support, regulatory assistance
- Well and pump rehabilitation specifications and construction observation
- Well performance testing and maintenance
- Well field optimization and monitoring
- Aquifer recharge and aquifer storage and recovery (ASR)



Contact Information

Austin: (512) 796-8636 james.beach@advancedgw.com

Houston: (281) 813-9064 john.nelson@advancedgw.com

Coming soon www.advancedgw.com

James Beach is a Professional Geoscientist in Texas with 30 years' experience in professional consulting in groundwater and surface water hydrology, water resources development and planning, groundwater well field design and development, permitting, environmental assessments, numerical flow and solute transport modeling, quantitative contamination evaluations, litigation support, and expert witness work. James has been successful in business leadership and operations, cost center management (P/L), business development and client management, corporate and project risk management, and employee development and management.

As a shareholder of Leggette, Brashears & Graham, Inc. (dba LBG-Guyton Associates in Texas) he was selected by fifteen fellow shareholders to serve on the board of directors for eight years from 2009-2017 until the firm was successfully sold to WSP USA Inc. From 2012-2017, James served as the Texas business leader for LBG, overseeing 15-20 employees, and was responsible for all aspects of business operations in Texas. While at WSP USA, Mr. Beach served as Area Manager of Texas Water and Environment Group, and was an Assistant Vice President. Project responsibilities included developing and/or reviewing scopes of work and budget estimates, as well as ensuring proper legal, compliance, and corporate review of contracts and insurance requirements.

Mr. Beach has always maintained significant involvement with clients, projects, and technical work, and has developed trusted advisor status with many clients and in the industry. James stays active in water related professional organizations to support industry advancement and maintain visibility among clients and colleagues. He is currently serving as a Board member for the Texas Water Conservation Association and is a member of the Groundwater panel as well. Mr. Beach has consulted for municipal, industrial, private and government clients, and has served as technical consultant for state regulatory agencies and groundwater conservation districts.

Mr. Beach has worked on regional planning efforts in eight of the sixteen regional planning areas of Texas. He has also worked on projects around the US and abroad. His expertise in quantitative hydrogeology includes experience in assessment of groundwater availability and quality in many aquifer systems; evaluation of current and projected water supply and demand; identification of critical groundwater areas and long-term availability; groundwater/surface water interaction; groundwater model development, use and interpretation; GIS applications and mapping; development of water-management strategies; well field design (vertical and horizontal); public/regulatory interaction, and report preparation. He has experience in litigation support ranging from groundwater rights/permitting (in different cases supporting regulators, permittees, or third parties), groundwater use and valuation disputes, environmental damage claims, oil/gas permitting, and other hydrologic issues.

James has significant experience in application of numerical models to evaluate water resources as well as contaminant flow and transport in the subsurface. He has experience characterizing, evaluating, and modeling flow and contaminant movement in unsaturated and saturated subsurface environments including deep vadose zone systems. He has evaluated deep-well injection, natural and enhanced bioremediation, landfill covers, slurry/sheet pile walls, and injection/recovery systems. He has worked at sites with contamination from free and dissolved phases of light and dense nonaqueous liquids (LNAPL and DNAPL), radionuclides, inorganic species and metals. Environmental projects include technical consulting for commercial, industrial and government clients to meet regulatory mandates as well as assisting regulatory agencies in technical issues of evaluating compliance at permitted facilities.

EDUCATION/TRAINING/CERTIFICATIONS

M.S. in Hydrology, New Mexico Institute of Mining and Technology, 1989

B.S. in Hydrology, Tarleton State University, 1987

Professional Geoscientist #2965, State of Texas

National Ground Water Association

Texas Water Conservation Association

Texas Groundwater Association

Texas Alliance of Groundwater Districts

29 CFR 1910 40-Hour Health and Safety Training

SUMMARY OF PROFESSIONAL EXPERIENCE

Jan 5, 2021 – Present: Advanced Groundwater Solutions LLC, Founding Principal, Austin, Texas
2017 – Jan 4, 2021: VP and Water and Environment Texas Area Manager, WSP USA, Austin, Texas
2012 -2017: Sr. Vice President, Shareholder and Board Member, LBG-Guyton Associates, Austin, Texas
2009 - 2011: Vice President and Shareholder, LBG-Guyton Associates, Austin, Texas
2002 - 2008: Senior Associate with LBG-Guyton Associates, Austin, Texas
1999 - 2001: Senior Hydrologist with LBG-Guyton Associates, Austin, Texas
1992 - 1999: Groundwater Hydrologist, INTERA, Austin, Texas
1989 - 1992: Groundwater Hydrologist with McCulley, Frick & Gillman, Inc., Austin, Texas
1984: Assistant Well Driller with Magill Well Service, Eden, Texas

PROJECT EXPERIENCE

Consulting Hydrogeologist – multiple Groundwater Conservation Districts

Over the past 20 years, James has served as consulting groundwater hydrologist in an ongoing capacity or on a project basis for many districts, including Red River, Prairielands, Middle Trinity, Clearwater, Lone Star, North Texas, Bandera, Trinity Glen Rose, Headwaters, Hill Country, Lipan-Kickapoo, Reeves, Brazos Valley, Harris-Galveston Subsidence, and others. Support has included development of management plans; designing groundwater monitoring networks; assessing DFCs/MAGs for joint groundwater planning; groundwater availability model runs; assessing impacts of potential rules; review of studies regarding impact from fracking; assessing strategies in state water plan and future groundwater pumping; assessing ASR and brackish groundwater, recharge, stream-aquifer interaction, water budgets, and long-term sustainability; developing rules and policies; development of well spacing rules and interactive tools to assess well spacing; evaluating permits and impacts of proposed production.

Evaluation of Groundwater Availability in Texas

Completed fundamental hydrogeologic research in almost every major and minor aquifer in Texas. Developed new GAMs or modified/used existing TWDB GAMs to develop groundwater availability estimates and long-term impacts from current and proposed groundwater usage. Projects included estimation of recharge, pumping distribution, estimation of exempt pumping, model development and calibration, as well as developing appropriate predictive scenarios. Clients have included the private landowners, industry, TWDB, developers, and groundwater conservation districts. Objectives vary from evaluating groundwater availability, estimating impact of new production, helping develop Desired Future Conditions, developing adequate monitoring plans, addressing permit issues, and developing management approaches for water users and districts.

San Antonio Water System

- Interaction with groundwater conservation districts/GMAs and evaluation of DFCs/MAGs
- Permitting of Gonzales Carrizo wells
- Carrizo ASR groundwater model development and use
- Use of EAA MODFLOW model to optimize Carrizo ASR injection
- Hydrogeologic characterization of potential brackish groundwater projects
- Planning and implementation of SAWS brackish Wilcox project
- Modeling and permitting of SAWS Injection wells
- Model develop for northern Bexar County Trinity groundwater model
- Evaluation of Bexar Met wells in Trinity Aquifer and Carrizo Aquifers
- Assessment and modeling of potential Local Carrizo wellfield
- Support for well design and construction services

Development of T-Bar Wellfield – Midland County Freshwater Supply District

Project included providing hydrogeologic field support during test hole drilling, sample collection, hydrogeologic assessment, evaluation of screen intervals and well designs, wellfield layout, water quality assessment, and model development to assess long-term production.

Evaluation of Groundwater Availability in the Carrizo-Wilcox Aquifer

Used existing MODFLOW groundwater flow model in northeast and central Texas to develop availability estimates and to determine the long-term impacts from projected groundwater demand. Evaluation helped identify potentially critical areas and aided in the development of a set of wells throughout the region to help assess future water-level changes.

El Paso Water Utilities Integrated Water Management Plan

PM to develop and update El Paso Water Utilities Integrated Water Management Plan consistent with the State Water Plan. Project tasks included working closely with EPW staff to evaluate conservation approaches, water demand and availability projections, political and regulatory considerations, and ultimate selection and costing of appropriate strategies to meet demands from multiple sources.

Development of Igneous-Bolson Aquifer Groundwater Availability Model

Served as project manager and primary modeler to develop a 3-layer MODFLOW model to simulate groundwater flow in the west Texas Bolson and Igneous aquifers. All model data was developed and evaluated within ArcGIS and was compatible/interchangeable with the modeling GUI. Model development and calibration included assimilation of historical pumping and water level data, as well as aquifer characteristics. Aquifer water levels and streamflow data were used to calibrate and verify the steady state and transient models. Predictive simulations, which incorporated 50-year demand projections and potential drought conditions, were used to assess aquifer impact and groundwater availability.

Lipan Aquifer Groundwater Availability Model, Texas

Collected and evaluated available hydrogeologic data from groundwater district and state databases. Developed a two-layer MODFLOW model to simulate groundwater availability from the upper alluvial aquifer and the lower Permian limestone aquifer. All model data was developed and evaluated within ArcView GIS and was completely compatible and interchangeable with the modeling GUI. Steady state and transient calibration were completed and the model was verified with the most recent "heavy-use" water level trends and irrigation usage. The model incorporated stream-aquifer interaction as well as spatially and temporally varying recharge and pumping.

Assessment of Brackish Groundwater for Desalination in Texas

Managed project for the Texas Water Development Board to assess the potential for desalination of brackish groundwater in Texas' major and minor aquifers. The study included evaluation of water-quality and geophysical data for over 30 aquifer systems throughout the state and development of hydrogeologic and water-quality maps that can be used to assess potential brackish water projects for planning purposes. The evaluation also included preliminary cost estimation formulas for source water production (wells and well fields) and engineering considerations for different aquifers.

Carrizo-Wilcox Wellfield Permits

Completed modeling using the TWDB Queen City/Sparta-Carrizo-Wilcox MODFLOW GAM to develop appropriate permitting strategies. Modeling included the use of specialized code to simulate pumpage reduction based on water level declines as specified in groundwater conservation district rules.

Assessment and Development of Clear Water Wellfield – Midland County Freshwater Supply District

Completed a preliminary hydrogeologic assessment of Pecos Valley and Dockum Aquifers on the property, test hole program design, assessment of test hole data, pumping tests and water quality, developed groundwater model to assess long-term groundwater availability.

Midland County Water Plan – Midland County

Assessed county demands from several water user groups, completed a hydrogeologic assessment of current and potential groundwater availability, and assessment of multiple aquifers and properties to meet long-term supply.

Groundwater Availability Modeling, City of Sweetwater, Nolan County, Texas

PM and modeler for evaluation of groundwater availability in the Dockum in Nolan County, Texas over a 50-year modeling period. Data were gathered on local structure, water levels, aquifer parameters, and current withdrawals to support model calibration and predictive runs for supply to a proposed power plant.

Brackish Groundwater Injection Well, Bexar County, Texas

Simulated brine concentrate injection and pressure buildup for a new 4,800-foot concentrate injection well at the SAWS Twin Oaks ASR facility to support TCEQ injection well application.

Multivariate Analysis, Barton Springs, Texas

PM for task to use multivariate statistical analysis of springflow, precipitation, streamflow, and groundwater levels in support of drought management and triggering methodology for Barton Springs/Edwards Aquifer Conservation District. Barton Springs flow was statistically modeled with multiple linear regression techniques.

Industrial Groundwater Availability Study, Andrews and Gaines Counties, Texas

PM on annual groundwater availability study from the Ogallala Aquifer in Andrews and Gaines Counties, Texas within the water rights areas of a water supply corporation. The annual study update involves gathering and evaluating water level and pumping information from wellfields in the two counties. This data is compared to predictive model results completed in the first phase of the project, and model was recalibrated as necessary on an annual basis to incorporate the effects of new wells within and outside the water rights areas.

Recharge and Recovery of Reclaimed Wastewater, City of Austin, Texas

PM and modeler for preliminary assessment of managed aquifer recharge for reclaimed wastewater. Project included assessment of potential sites for infiltration basins, core sampling and testing, infiltration assessment, groundwater modeling, conceptual horizontal well design for shallow river alluvium, assessment of groundwater movement and recovery efficiency. Evaluated the optimum size of infiltration basins and production wells to minimize cost and maximize recovery.

Nacatoch and Blossom Aquifers Brackish Studies to Assess Brackish Production Zones for TWDB

Managed two projects aimed at determining potential brackish groundwater production zones in the downdip slightly and moderately saline zones. Salinity estimates were derived from the evaluation of geophysical logs to determine the down-dip extent of the 10,000 mg/L TDS boundary and calibrated with water sample data. Brackish groundwater production zones were evaluated using various pumping scenarios to determine potential impacts to the nearby users. Additionally, in-place groundwater volume calculations were completed for each salinity zone. The stratigraphic, lithologic, and hydrochemical data generated from these projects will be added into TWDB's Brackish Resources Aquifer Characterization System (BRACS) database.

Assessment of Aquifer Storage and Recovery – City of College Station, Texas

Completed a preliminary hydrogeologic assessment of ASR for the city, including assessing hydraulic properties, water quality, operational efficiencies, wellfield layout, and impacts of natural gradients. A multi-well model allowed evaluation of a conceptual ASR system injecting 6 MGD.

Aquifer Characterization and Wellfield Assessment - City of Borger

Project included assessment of existing data, geophysical assessment, hydrogeologic field support during testhole drilling, sample collection, hydrogeologic assessment, wellfield layout, and groundwater model development.

Characterization and Modeling of ASR System – San Antonio Water System

Updated and recalibrated SAWS ASR groundwater model to evaluate 10 years of injection/extraction, movement and mixing of native and injected waters, water quality, percentage of system recovery and loss, total aquifer storage capabilities, losses to competitive pumping, maximum production and injection rates. The model predicted movement of injected water, impact from nearby production, and water quality of blended water upon extraction.

Horizontal Well Assessment, Planning and Permitting – West Texas

Xcel Power had limited production from vertical wells (40 gpm) in the Ogallala aquifer with relatively small saturated thickness, which was the catalyst for the horizontal well feasibility study. A groundwater model was developed to assess economic feasibility of horizontal wells and to support permitting. Surface geophysical surveys and test borings were completed to optimize the location of the horizontal well. Worked with the drilling contractor to develop innovative well screen and development approach to complete a highly productive well (1000 gpm).

Development Gulf Coast Groundwater Model of Catahoula Aquifer

Worked with the Lone Star GCD to develop a MODFLOW groundwater models to simulate groundwater flow and pumping impacts in the Catahoula Aquifer. The model was based on hydrogeologic characterization using geophysical logs and limited number of deep production wells.

Presidio County, Texas

Evaluated structural and hydrogeologic data for the area surrounding the Shafter Mining District for groundwater model. Provided quantitative hydrogeologic opinions for mining company to explain groundwater flow and potential impacts from dewatering.

Update and Recalibration of Groundwater Model for Reno, Nevada

Converted a complex, non-standard model to MODFLOW. The model implemented domestic and municipal pumping; distribution system leakage; recharge from mountain-fronts, precipitation, and irrigation; evapotranspiration; rivers and streams; and discharge from springs and man-made pits. The model will be used to complete wellhead protection assessment and evaluate long-term effects of multiple production scenarios. Data was developed within ArcGIS and interchanged with groundwater model.

Confidential Client – Reeves County

PM to assess productivity of Capitan Reef Complex aquifer. Reviewed existing stratigraphic and hydrogeological information on wells near the Site, and developed a groundwater model to assess groundwater production capacity, and long-term groundwater availability.

Expanded Brackish Desalination Well Field – Wilson County

Worked with hydrogeologic team to assess brackish groundwater availability. Used a modified TWDB GAM, simulated groundwater production, DFC impact, permitting issues and aquifer impacts from expanded SAWS brackish wellfield in Wilson County. Evaluated wellfield locations, impact on existing brackish wellfield, and other design issues.

Trinity Glen Rose Groundwater Conservation District

Served as consulting hydrogeologist for over 14 years, completing multiple studies related to groundwater recharge, update of stratigraphic maps, groundwater modeling to assess permit issues and DFCs, and other groundwater issues.

Evaluation of Hydrochemical and Isotopic Data in Groundwater Management Areas 11, 12 and 13

PM for TWDB study to assess water quality of the Carrizo-Wilcox Aquifer in Texas. The team compiled well data, geophysical logs, completed geochemical transect wells, determined stratigraphic formation tops and constructed strike and dip transects through three separate areas. The transects were the foundation for the geochemical modeling evaluation to determine change in geochemical signatures as water migrated along the transect.

Desired Future Conditions Explanatory Report for GMA 9

Provided hydrogeologic and groundwater technical consulting to help prepare technical content for the report including: general aquifer descriptions and maps of major and minor aquifers within the GMA, technical sections and maps for the portions of aquifers and counties designated non-relevant. Lead public presentations and discussions regarding groundwater modeling, hydrogeologic issues, and impact of DFCs on the nine factors including: aquifer uses and conditions, hydrologic conditions and DFC feasibility.

Consulting and Modeling Support for GMA 8

Worked with multiple groundwater districts to assess future pumping projects, potential demands, regional water strategies, and management goals to develop appropriate modeling scenarios and results to guide decision makers in selecting DFCs. Project led to a follow-up contract to serve as technical consultant to GMA 8 to complete the Explanatory Report.

Evaluation of New Groundwater Sources, City of Crane, Texas

Evaluation of the availability of groundwater in the Edwards-Trinity Plateau, Pecos Valley Alluvium, and Dockum aquifers for the City of Crane to identify potentially viable supplies at a reasonable cost. Data were gathered on local hydrogeology, well capacity, water levels, aquifer parameters, water quality and current withdrawals to support preliminary recommendations for further assessment.

Aquifer Storage and Recovery of Reclaimed Wastewater – City of Austin

Preliminary assessment included evaluation of potential sites for infiltration basins, core sampling and testing, infiltration assessment, groundwater modeling, conceptual horizontal well design for shallow river alluvium, assessment of groundwater movement and recovery efficiency, and cost estimates. Optimized the size of infiltration basins and production wells to minimize cost and maximize recovery.

150-Mile Radius Groundwater Supply Ranking – Central-West Texas

Worked with confidential client to evaluate and rank potential groundwater projects to meet future water needs. Ranked projects based on estimated well field capacity, volume of groundwater, infrastructure costs, permitting issues, sustainability, water quality, and other factors.

Groundwater Resource Planning/Assessment – City of San Angelo

Mr. Beach has worked with the City of San Angelo for over 15 years on projects related to groundwater availability, brackish groundwater studies, potential groundwater projects, Hickory wellfield modeling and regulatory support, and other water resource evaluations.

Texas Regional Water Planning – (TWDB Regions A, D, E, F, H, I, J, M, N)

Served as general or groundwater consultant on regional planning teams to complete quantification of groundwater resources, evaluation of current and projected water supply and demand, identification of critical groundwater areas, development of water management strategies, development of a water supply plan, use of TWDB GAMs to assess groundwater availability, public interaction and presentations, and report preparation. Working with the RWPGs in these projects helped to identify regional groundwater concerns and strategies to meet future demand.

Joint Groundwater Planning – (Central, East, and West Texas)

Was integrally involved in the initial round of Joint Groundwater Planning for GMAs across Texas. Worked with groundwater conservation districts, municipalities, industrial users, irrigators, and other stakeholders to navigate through the process of setting DFCs in several GMAs in Texas. Specific tasks included assessing the hydrogeologic reasoning for DFCs, utilizing GAMs and other models to simulate the impact of DFCs, and providing alternative approaches for developing DFCs. Worked for various clients in eleven of the sixteen GMAs.

Longhorn Pipeline, Austin, Texas

Developed and implemented trench testing protocol for Austin-area over environmentally sensitive karst geology. Estimated travel time of overland flow to water bodies, wells, intakes and sensitive features for permitting documents. Developed field supervision protocol for hydrogeologic investigations for pipeline replacement through environmentally sensitive area. Helped develop equipment staging concepts and response time estimates in Hays and Travis County.

Magellan Longhorn Pipeline

Helped develop White Paper for Magellan titled “Trench Integrity and Construction Methodology of the Magellan Longhorn Pipeline Mile Post 169.88 to 188.8” to document trench design and the materials and methodologies that were used to prevent material impacts within the Edwards Aquifer Recharge Zone from potential pipeline releases.

Groundwater Availability and Modeling Evaluation of Trinity Aquifer, Bexar and Comal Counties, Texas

Developed a MODFLOW groundwater availability model to evaluate the viability of producing Trinity ground water in a portion of the aquifer greatly influenced by surface-water recharge. The model structure was based on site-specific borehole data, and calibrated to a multi-well long-term pump test and was consistent with the TWDB Trinity Aquifer GAM model within the modeled area. The model was used to assess effects of long-term pumping and multiple production scenarios.

Evaluation of Groundwater Availability for the Gulf Coast Aquifer, Texas

Utilized existing hydrogeologic evaluations, databases, and ground-water models in east Texas and the Coastal Bend area to develop availability estimates, sustainable yields, and long-term impacts from current and proposed ground-water usage.

Lower Guadalupe Basin Groundwater Availability Evaluation

Evaluated groundwater resources for a Lower Guadalupe water supply project. An average of approximately 14,200 ac-ft/year of groundwater was required to supplement the surface-water supply. The study included evaluation of the groundwater availability and quality from the Gulf Coast, Carrizo-Wilcox, Queen City and Sparta aquifers throughout the basin, as well as wellfield evaluation and cost assessment. TWDB groundwater availability models were used to assess groundwater availability, wellfield impact, permitting strategies, and environmental issues.

Edwards Aquifer Cibolo Transfer Evaluation

Used the San Antonio Edwards Aquifer MODFLOW GAM to assess the impact of Edwards Aquifer Authority “Cibolo transfers” on springflow from the aquifer. The approach included looking at the effect of transferring pumpage to up-thrown and down-thrown sections of the aquifer, seasonal trends, and the size of the transfers. The specialized MODFLOW Management Module was used to simulate pumpage reductions based on Critical Period/Demand Management regulations.

Edwards Aquifer Bifurcated Rights Assessment

Completed modeling using the San Antonio Edwards Aquifer MODFLOW GAM to assess the impact of Edwards Aquifer Authority's proposed bifurcated permitting strategies. Modeling included the use of specialized MODFLOW Management Module to simulate two-tiered pumpage reductions based on proposed trigger levels.

Hydrologic Modeling of Edwards Aquifer Watershed

Served as project manager to develop hydrologic models (using HSPF) simulate nine watersheds that contribute recharge to the Edwards Aquifer. The models incorporated available meteorological, hydrological, and geological information to develop estimates of runoff and recharge in the basins for a 50-year period. Water Availability Model (WAM) information was utilized to assess impacts from diversions and flood retardation structures was incorporated. The models are useful for assessing proposed recharge management strategies such as brush control, recharge structures, and precipitation enhancement. In addition, the models can be extended to assess water availability and quality in the basins.

Groundwater Availability Evaluation of Ogallala Aquifer, Andrews and Gaines Counties, Texas

Developed a MODFLOW groundwater availability model to predict the viability of producing large amounts of Ogallala groundwater over a 25-year period from two proposed well fields for power generation cooling water. The regional model was calibrated and verified with "pre-development" water levels and with water levels collected over a 50-year period. It accounted for past and future irrigation and municipal usage, incorporated heterogeneity in hydraulic properties, and paleo-channels that greatly influenced the groundwater availability. All model data was developed within ArcView GIS and was completely compatible and interchangeable with the modeling GUI.

Lignite Mines, Texas

Performed numerous aquifer tests and analysis, well installations, groundwater sampling, surface water sampling and monitoring. Developed datasets, parameter distributions, and MODFLOW models for mine dewatering/depressurization modeling in central and east Texas lignite mines. Completed baseline groundwater and surface water sampling; drilled and constructed overburden and under burden wells for sampling; developed dewatering/depressurization models.

Longhorn Pipeline, Central Texas

Supported the permitting process for the 19-mile pipeline replacement that crossed the Edwards Aquifer recharge and contributing zones. Performed watershed delineation, statistical analysis of streamflow, rainfall-runoff analysis, surface-water flow and transport analysis and risk assessment, overland flow calculations, assessment of detention ponds, and rainfall intensity-duration-frequency analysis. Evaluated shallow geology in 19-mile trench to assess potential for karst recharge to the aquifer. Developed watershed parameters needed to estimate runoff and travel time estimates from the pipeline to surface waterways and karst recharge features, and identified emergency response sites along tributaries. Performed trench percolation tests in karst areas to assess the nature and extent of contamination caused by potential pipeline releases.

Gas Storage and Transfer Station, Kansas

Part of a team that developed and implemented a sampling plan to evaluate the source of elevated chloride concentrations in the shallow aquifer system. The evaluation successfully delineated naturally occurring chloride contamination from that portion of a plume that was caused by onsite brine storage ponds.

Williams Energy Services, Kansas

Designing and implementing a strategic technical approach to address specific regulatory requirements for developing a monitored natural attenuation (MNA) risk-based methodology for an operating facility.

Petroleum Refinery, Ohio

Key player on team to develop and implement a plan to evaluate ROST™, soil sampling, and partitioning interwell tracer tests as a means of effectively and economically characterizing site. Involved in design, field implementation, and analysis of all three techniques.

Mine Ash Disposal Facility, East Texas

Completed geophysical and hydrogeologic assessment to characterize lithification of ash deposits to determine best approach for removal prior to pit construction through the area.

Rare Earths Mine, West Texas

Completed groundwater assessment of four potential sources of for mine construction and milling supply of up to 6,000 acre-feet/yr.

Silver Mine, West Texas

Assessment of impact from shaft dewatering on surrounding wells and springs.

Surface Lignite Mine, Rockdale, Texas

Developed and implemented an aquifer testing program to support dewatering evaluations. The fieldwork included well installation and development, as well as aquifer testing. Quantitative evaluation of aquifer test data was also completed.

Chemical Waste Landfill, Sandia National Laboratories, Albuquerque, New Mexico

Aided in the development and implementation of a state-of-the-art vadose zone tracer test to characterize the quantity and location of dense nonaqueous phase liquids in the unsaturated zone below abandoned waste units.

Rendering Plant, San Angelo, Texas

Performed field investigation to determine extent of contamination at a site contaminated with diesel fuel after years of surface spills. Investigation entailed collection of soil samples, installation of monitoring wells, well development, groundwater sampling, and hydraulic testing. Also included preparation of a remedial action plan.

Uncompahgre River, Colorado

Analyses and interpretation of seasonal water quality data from an extensive mountain stream network feeding the river to delineate the source of and possible remedial strategies for heavy metal loading from abandoned mine portals, which was the cause of diminished local fish populations.

Rare Earths Processing Facility, West Chicago, Illinois

Worked with regulatory authorities to scrutinize proposed soil and groundwater reclamation proposals from the responsible party. This process entailed development of intricate database programs to characterize and verify existing contamination as well as proposed excavation plans. In addition, a complete statistical analysis was completed to determine background groundwater concentrations and applicable groundwater protection standards that satisfied multiple regulatory authorities and requirements.

Comanche Peak Steam Electric Station, Glen Rose, Texas

Quarterly sampling and evaluation of groundwater data from Class I RCRA landfills. Also aided in the preparation of a work plan for clean closure of one landfill that was in direct hydraulic connection with the cooling lake; this plan was accepted and the landfill was later closed.

Kenai Peninsula, Alaska

Developed a three-dimensional groundwater flow model of a complex faulted glacial geological system below a petroleum refinery that was contaminated with light nonaqueous-phase liquids. The calibrated groundwater model was used to evaluate the effectiveness of various control and containment scenarios, including implementation of extraction/injection wells and sheet-pile walls. Estimated the total quantity of LNAPL in the aquifer based on the measured thickness in contaminated wells.

Refinery Complex, Texas Gulf Coast

Led technical team to develop appropriate site conceptual model and a three-dimensional flow and transport model (2.1 million grid blocks) to statistically evaluate alleged groundwater contamination by petroleum hydrocarbons in a heterogeneous aquifer. State-of-the-art geostatistical and stochastic modeling tools were utilized to complete the analysis; visualization/animation techniques were used to effectively illustrate model results.

Basin Flow Model, Paris, France

Was lead modeler and project manager for a project that developed a regional model which incorporated five hydrogeologic units into a 12-layer flow model to support performance assessment for a proposed radioactive waste repository. The model also incorporated stream-aquifer interaction and evaluated potential variability under future climate and water demands. Adjoint-sensitivity analysis was also performed to address the model's sensitivity and to identify the most critical data needs.

Columbus Air Force Base, Mississippi

Calibrated and verified a two-dimensional transient flow and transport model (Bioplume II) to evaluate natural attenuation of dissolved phase jet fuel components (benzene, dichlorobenzene, naphthalene, p-xylene) and tritium in a shallow alluvial aquifer. Site characterization data and historical plume monitoring data was used to develop a reliable site model to predict down gradient concentrations at the site. Aerobic and anaerobic biodegradation as well as nondestructive natural attenuation mechanisms were incorporated to evaluate the fate of the plume.

A/M Area Disposal Sites, Savannah River Site, South Carolina

Developed a three-dimensional transient model to evaluate the potential movement of dissolved phase solvents (TCE, PCE, TCA, etc) in the saturated zone in the forty years since disposal started. This model was used to evaluate the effectiveness of the current pump-and-treat recovery system and evaluate future movement of the dissolved phase plumes.

F&H Area, Savannah River Site, South Carolina

Managed the development of numerical models to evaluate capture and containment effectiveness. Developed appropriate monitoring strategy to verify hydraulic containment, developed a strategy for rehabilitating injection wells, and aided in developing a geochemical plan for pump-and-treat containment and recirculation system.

DOE WIPP Facility, Carlsbad, New Mexico

Applied the SWIFT-II flow and transport code to evaluate the effectiveness of the proposed upper-shaft short-term seal design. Applied a unique and efficient approach to incorporate the cylindrical system of seal components into a two-dimensional model and implemented a new linear boundary condition to mimic flow from the lower boundary. The model was used to identify those components that were most critical to preventing fluid flow from the upper-shaft region to the repository level.

Aluminum Processing Facility, Missouri

Used site characterization data to conceptualize and develop a coupled soil and groundwater model to evaluate the fate and transport of a PCB compound. Model evaluations included estimating groundwater contamination downgradient from the site in an aquifer discharging to a major river. Developed parameters to estimate risk to human health and the environment at the river due to the PCB release.

Sanitary Landfill, Savannah River Site, South Carolina

Developed an aerial flow model and a vertical cross-section contaminant transport model to support risk assessment calculations and support an alternative concentration limit (ACL) demonstration for the facility. The areal flow model was used to evaluate the effectiveness of capping in decrease point-of-compliance (POC) concentrations and the transport model was used to estimate POC and point-of-exposure (POE) concentrations.

Hazardous Waste Disposal Facility, Kern County, California

Applied a variably-saturated flow model (UNSAT2) to evaluate and recommend the proper distance between neutron probe access tubes that were used to monitor leakage from the waste management units to the extensive vadose zone below the facility.

Deep Well Injection Facility, Southeast Texas

Developed a SWIFT-II transport model to demonstrate no migration under EPA regulations.

Bunker Hill Superfund Site, Smelterville Flats Area, Idaho

Using MODFLOW, developed a saturated groundwater flow model to evaluate/design fluid residence times and travel paths through a constructed wetland. The groundwater was contaminated with heavy metals and the constructed wetlands were designed to maintain a reducing environment for metals precipitation. The USGS code MODPATH was used to perform particle tracking through the wetlands area.

DOE WIPP Facility, Carlsbad, New Mexico

Applied the SWIFT-II flow and transport model to investigate the transient pressure response of slanted well bores with the very low conductivity halite zones of the Salado Formation. This evaluation was performed to determine the effects of well bore slant on the results of permeability testing interpretations.

COL Application for Proposed New Nuclear Power Plants

Mr. Beach assisted the Subject Matter Experts (SMEs) in the development of a quantitative groundwater model for the Combined Operating License (COL) application, Final Safety Analysis Report (FSAR) for a two-new reactor site. The groundwater codes used in the assessment were MODFLOW, MODPATH, and RESRAD. Mr. Beach is also serving as a technical advisor and participant in discussions with the SMEs and the Nuclear Regulatory Agency (NRC) for the hydrogeological models.

Lead Smelting and Battery Manufacturing Facility, Columbus, Georgia

Used SWIFT-II to develop a flow and transport model for the site in order to design an effective/efficient groundwater extraction system for a dissolved phase solvent plume.

Mine Disposal Facility, Minnesota

Developed a numerical flow model using MODFLOW to determine the effectiveness of slurry walls or sheet pile to divert groundwater flow around a semi-wetland area that contained waste disposal units. The model was also used to evaluate the effectiveness of capping the waste disposal units to minimize leachate production.

Illinois Department of Nuclear Safety, Springfield, ILL

Assisted in the preparation of environmental analyses for each decommissioning phase of a closed thorium and rare earths facility for the Illinois Department of Nuclear Safety. Each environmental assessment included: (1) an assessment of the radiological and nonradiological impacts to the public health from the activities proposed by the applicant; and (2) an assessment of impacts on any waterway and groundwater resulting from previous activities and activities proposed by the applicant. The assessment also included the consideration of remedial alternatives proposed by the applicant and consideration of the long-term impacts of the decontamination and reclamation activities proposed by the applicant.

LITIGATION SUPPORT

2019 – Two confidential cases underway.

Both cases involve groundwater permitting issues.

Private Landowner, West Texas (2018)

Characterized aquifer conditions and groundwater use by operators. Case settled in favor of client with substantial settlement.

District Court, Water Division No. 1, State of Colorado (2017)

Evaluation of Groundwater Return Flows for Mayer Farm (Case No. 09CW091)

Permit Hearing, Railroad Commission of Texas (2017)

Provided technical analysis and testimony regarding hydrogeologic conditions, groundwater flow, and onsite/offsite monitoring plans related to permitting of enhanced oil recovery project in Texas Gulf Coast region.

Contested Case Permit Hearings, Bandera Texas (2016)

Testifying expert in contested case hearing before groundwater conservation district and State Office of Administrative Hearings regarding impact of proposed well permits on existing wells and long-term impacts.

Groundwater Rights, Bastrop Texas (2016)

Testifying expert in contested case hearing before groundwater conservation district and State Office of Administrative Hearings. Testified on the impact of proposed well permits on production capacity of client's existing wells and long-term impacts on ability to provide water as required by CCN. Also involved in development of mitigation plan and negotiations for settlement between parties.

Groundwater Rights, Bastrop Texas (2015)

Testifying expert in contested case hearing before groundwater conservation district and State Office of Administrative Hearings.

Groundwater Rights and Export Permit Application, Fort Stockton Texas (2013)

Served as hydrogeologic expert in a contested case hearing for landowner before Middle Pecos GCD regarding proposed production permits. Developed groundwater availability model used for testimony in the case.

Technical Support for Railroad Commission of Texas Permitting

Provided technical analysis and regulatory interaction regarding Area of Review variance request. Analysis involved evaluation of hydrogeology, assessment of USDW, and groundwater conditions. Commission granted a variance to AoR requirements.

Industrial Complex - Albuquerque, New Mexico

Supported the defendant's legal team in evaluating the plaintiff's expert opinions regarding source of contamination and extent of contamination for various organic contaminants. Assessed plaintiff's groundwater flow and transport model, which was used as the basis for many of the plaintiff's conclusions. Critiqued weaknesses of the three-dimensional flow and transport model and completed additional simulations using plaintiff's model to assess the sensitivity of model results to aquifer parameters (such as biodegradation and sorption). Visualization and animation techniques were utilized to summarize model results.

Ogallala Aquifer Groundwater Permit Hearings, Roberts County, Texas –

Supported a legal team in their assessment of impacts from proposed groundwater permit applications to the Panhandle Groundwater Conservation District. A groundwater model was used to simulate the impact of pumping on surrounding properties and to evaluate the rate of water level decline with respect to District guidelines.

Refinery Complex, Texas Gulf Coast

Led technical team to develop appropriate site conceptual model and a three-dimensional flow and transport model to statistically evaluate alleged groundwater contamination by petroleum hydrocarbons in a heterogeneous aquifer. State-of-the-art geostatistical and stochastic modeling tools were utilized to complete the analysis; visualization/animation techniques were used to effectively illustrate model results.

Injection Well Facility, Texas

Evaluated hydrogeology and contaminant information obtained from previous site investigations to develop an appropriate conceptual model of groundwater flow at the site. Interviews of operators, aerial photography, flow and transport modeling, quantitative subsurface volumetric analysis, and visualization techniques were all used to reconstruct activities and events that were probable contaminant contributors. The results were used to apportion responsibility and remediation costs among potentially responsible parties.

Manufacturing Facility, Canada

Worked with technical team to develop a three-dimensional flow and transport model to evaluate groundwater contaminant transport of chlorinated solvents in a complex system. Visualization and animation techniques were utilized to distill and present model results. Results were part of a successful strategy to negotiate a pre-trial settlement.

Manufacturing Facility, Texas

Evaluated available site data (boring logs, water levels, contaminant concentrations, river levels, etc.) to develop an appropriate conceptual representation of flow and transport from the facility to down gradient properties. Results were part of a successful strategy to illustrate the weakness of the plaintiff's allegations during court proceedings.

Landfill, Texas

Evaluated the potential for groundwater contamination from landfill leakage. Scoping-level evaluations indicated that potential plaintiffs were far enough downgradient that the potential for impact from the landfill was very low. The evaluation included assessment of natural attenuation mechanisms (biodegradation, dispersion, dilution, etc.) of PCE and TCE.

Industrial Complex, Texas

Led in the development of a three-dimensional flow and transport model to evaluate groundwater contamination by chlorinated solvents that were disposed of over a 30-year period.

Surface-Water Rights, Texas

Served as a technical expert to assess surface-water dispute. As part of the investigation, surface-water flows in the disputed waterway were measured and losses due to evaporation and aquifer interaction were evaluated. Results of the field investigation helped set the stage for a pre-trial resolution between parties.

James A. Beach, P.G.

PUBLICATIONS AND PRESENTATIONS

Beach, J. A., 2019. Invited panel discussion stream-aquifer interaction. Texas Groundwater Summit hosted by the Texas Alliance of Groundwater Districts, August 2019.

Beach, J. A., 2017. Invited panel discussion on DFC implementation and monitoring. Texas Groundwater Summit hosted by the Texas Alliance of Groundwater Districts, August 31, 2017.

Beach, J. A., D. Bardesley, and T. Davidson. Siting, Design and Construction of High Capacity Horizontal Well for Industrial Use in the Ogallala Aquifer. Texas Water Conservation Association, October 2017.

Beach, J. A., 2017. Finding the Balance Between Highest Practicable Groundwater Production and Conservation in Groundwater Availability in Texas as part of Session: Rule of Capture and Sustainable to Consensus Yield. Geological Society of America, South-Central Section, San Antonio Texas, March 13, 2017.

Beach, J. A., 2016. Understanding the Geology of Aquifers for Aquifer Storage and Recovery. 16th Annual Bell County Water Symposium, November 16, 2016.

Beach, J. A., 2016. Desired Future Conditions – Will Process Changes Increase Accountability? Presented at Texas Water Law Institute – 2016 Water Law Fundamentals, November 4, 2016

Beach, J. A., 2016. Panelist for Session: Moving Groundwater in Texas. Texas Groundwater Summit hosted by the Texas Alliance of Groundwater Districts, August 23, 2016.

Beach, J. A., 2015. Texas' Billion Dollar Desired Future Condition (DFC) Balance – Conservation versus Highest Practicable Production. Presented at Texas Aquifers Conference, June 26, 2015.

Beach, J. A., 2014. Brackish Groundwater and Desired Future Conditions (DFCs) – Intersection of Science and Policy. Texas Groundwater Summit hosted by the Texas Alliance of Groundwater Districts, August 27, 2014.

Beach, J. A., Groundwater Science. Presented to the Texas Alliance of Groundwater Districts at the Texas Groundwater Summit, August 26, 2014.

Beach, J. A., K. Morrison, and S. Reinert, 2014. Digging Deeper for a Reliable Water Supply. Water Efficiency: The Journal for Water Resource Management. November/December 2014.

Beach, J. A., 2014. Aquifer Storage and Recovery. Presented at Water Awareness Summit in Rio Grande Valley, December 5, 2014.

Beach, J. A., 2014. Panel Moderator: Investment Perspectives and Presenter: Developing Brackish Water Aquifers to Create a Fresh Water Source. Lone Star State Water Summit, June 24, 2014.

Beach, J. A., 2014. Texas Growth and Drought – Revisiting Conjunctive Use and the Value of Wet Water. Presented at Texas Aquifers Conference, June 2, 2014.

Beach, J. A., 2014. Panelist for Session: Brackish Groundwater and Desalination. Presented at 15th Annual Changing Face of Water Rights Course hosted by Texas Bar CLE, February 27, 2014.

Beach, J. A., The Changing Face of Texas Water Rights. Invited Presentation to the Texas Bar CLE, February 26, 2014.

Beach, J. A., 2013. Developing Brackish Water Aquifers to Create a Fresh Water Source. Lone Star State Water Summit, November 15, 2013.

Beach, J. A., 2013. Regional Livability Symposium: Water – Key to Our Future. Envision Central Texas. February 15, 2013.

Beach, J. A., 2012. Groundwater 101 as part of ABCs of GCDs. Texas Groundwater Summit hosted by the Texas Alliance of Groundwater Districts, August 28, 2012.

James A. Beach, P.G.

Beach, J. A., 2012. Growth and Groundwater in Texas: What Are We Learning. Texas Water Conservation Association, June 15, 2012.

Beach, J. A., 2010. Modeling that Leads to Decision Limitations: How Do You Attack It? Presented at 11th Annual Changing Face of Water Rights Course hosted by Texas Bar CLE, March 25, 2010.

Beach, J. A., 2006. Groundwater in Texas: It's Availability and Management: GAMs, GMAs, DFCs, and MAGs. Presented at Water Rights and Sales and Transfers in Texas. December 15, 2006

Beach, J. A., C. W. Kreitler, and W. B. Klemm, 2002. Brackish Water Resources of the Gulf Coast Aquifers in Texas. To be presented at Gulf Coast Association of Geological Societies Symposium, Austin Texas, October 2002.

Beach, J.A., and A. Standen, 2000. Ground-Water Availability Model of the Lipan Aquifer. Presented at the Southwest Focus Ground Water Conference sponsored by the National Ground Water Association in May 17-18, 2000; Austin, Texas.

Beach, J.A., and G. Ruskauff, 2000. Practical Aspects of Conceptualization and Modeling of Heterogeneous Deltaic Deposits. Presented at the Society of Sedimentary Geology (SEPM)/ International Association of Sedimentologists (IAS) Conference on Environmental Sedimentology: Hydrogeology of Sedimentary Aquifers, September 24-27, 2000; Santa Fe, New Mexico.

Beach, J. A. and C. Kreitler, 1999. Availability of Ground Water from the Ogallala Aquifer in Gaines and Andrews County. Confidential Client.

Fryar, D.G., J.A. Beach, V.A. Kelley, M.K. Knowles, 1997. Long-Term Brine Migration Through an Engineered Shaft Seal System, Proceedings of the ASCE Fourth Congress on Computing in Civil Engineering, 1997

Beach, J.A., 1996. Modeling Natural Attenuation of Organic Contaminants Using the Bioplume II Transport Model. Invited Presentation to Regional EPA Conference, Albuquerque, New Mexico, September 1996.

Beach, J.A., D. G. Fryar, H.S. Rifai, K. Appling and T.B. Stauffer, 1996. Simulation of Natural Attenuation of Organic Tracers at the MADE Site Using the Bioplume II Transport Model. In: Calibration and Reliability in Groundwater Modeling, Proceedings of the ModelCARE'96 Conference held at Golden, Colorado, September, IAHS Publication No. 237.

Close, Bence V., Bryan L. McCulley, and J.A. Beach, 1990. Assessment of Ground-Water and Vadose Zone Monitoring System Requirements in an Arid Environment, In: Proceedings of the Thirteenth Annual Madison Waste Conference, September.

Beach, J.A., D.B. Stephens, and A.L. Gutjahr, 1989. Incorporation of Spatial Variability in Mill Tailings Hydraulic Properties into Numerical Models: Implications for Uncertainty in Seepage Prediction and Groundwater Protection, In: Proceedings of the Ninth Annual AGU Front Range Branch Hydrology Days, April.

John Nelson is a Professional Geoscientist in Texas and Registered Professional Geologist in Mississippi with 31 years of professional and practical consulting experience in hydrogeology and groundwater resources evaluation, planning and development, groundwater well and pump equipment design for municipal, public and industrial water supplies, water well construction consultation and field observations and consultation for existing water well and pumping equipment rehabilitation and repair.

John began his professional career in 1989 and initially worked as a Groundwater Hydrologist for William F. Guyton Associates, primarily on groundwater and public supply and industrial water well projects in Texas and Nevada. Leggette, Brashears & Graham, Inc. (LBG) purchased William F. Guyton Associates in 1993 and he served as a Senior Hydrogeologist, Associate and Hydrogeologist and Senior Associate and Hydrogeologist with LBG (dba LBG-Guyton Associates in Texas) with progressively more project development and management and client responsibilities. LBG was acquired by WSP USA Inc. in 2017 and John continued project management as a Supervising Hydrogeologist and Senior Supervising Hydrogeologist for a wide variety of engineering, private, municipal, industrial and government clients. Project responsibilities included developing and managing projects, preparing scopes of work, budget estimates, proposals and contracts, and managing project billing and financial reports. John has been successful in technical consultation work, project and employee management and business and client development.

John has completed hundreds of projects in several aquifers and areas in Texas plus sites in Nevada, Arizona, Michigan, Missouri and Mississippi. Many of the projects in Texas have involved technical studies and/or public supply or industrial water wells completed in the Chicot, Evangeline or Jasper Aquifer (Gulf Coast Aquifer) and the Catahoula Aquifer in southeast and east Texas. Additional studies and water well projects have been completed in the Northern Trinity and Woodbine in north-central Texas, Carrizo-Wilcox, Simsboro, Sparta, Yegua-Jackson, Queen City, and the Ogallala Aquifers of Texas.

John's areas of experience include: hydrogeologic, aquifer and groundwater resource availability and development studies during the planning phase for a water well or multiple water wells for small to very large land tracts and developments; preparation of well, pump and motor data and specifications for the construction and rehabilitation of small capacity to large capacity public supply and industrial wells; evaluation of water well, hydrogeologic, aquifer and water quality data and well and test hole geophysical logs; evaluation and field inspection of test hole, pilot hole and water well drilling, geophysical logging, groundwater sampling, well construction and well testing operations; performing and evaluation of well, pump and motor performance tests of small capacity to large capacity water wells; consultation for well and pump rehabilitation projects to restore or increase the well pumping rate, replace the pumping equipment or improve a well's dependability, decrease sand production, remedy structural failures of the well casing, liner or screen, or reduce selected inorganic chemical, metal or radionuclide concentrations to acceptable levels for public supply; analyzing aquifer and hydrogeologic data and logs for local and regional groundwater flow models; and evaluating data for water-level and water-quality monitoring programs.

John stays active in groundwater, water well and geology related professional organizations to continue his professional education and development and maintain visibility among clients and colleagues in the groundwater industry. He is a member of the National Ground Water Association, Texas Ground Water Association, Association of Environmental and Engineering Geologists and Houston Geological Society.

EDUCATION/TRAINING/CERTIFICATIONS/MEMBERSHIPS

M.S. in Geology, Mississippi State University, 1988

B.S. in Geology, Murray State University, 1986

Master's thesis: Structural and Geomorphic Controls of the Karst Hydrogeology of Franklin County, Alabama.

Professional Geoscientist #4027, State of Texas

Registered Professional Geologist, #0453, State of Mississippi

National Ground Water Association

Texas Groundwater Association

Association of Environmental and Engineering Geologists

Houston Geological Society

SUMMARY OF PROFESSIONAL EXPERIENCE

January 2021 - Present: Advanced Groundwater Solutions, LLC, Founding Principal, Houston, Texas

2020 - Jan 5, 2021: Senior Supervising Hydrogeologist, WSP USA, Houston, Texas

2018 – 2019: Supervising Hydrogeologist, WSP USA, Houston, Texas

2013 -2017: Senior Associate and Hydrogeologist, LBG-Guyton Associates, Houston, Texas

2003 – 2012: Associate and Hydrogeologist, LBG-Guyton Associates, Houston, Texas

1993 – 2002: Senior Hydrogeologist, LBG-Guyton Associates, Houston, Texas

1989 - 1992: Groundwater Hydrologist with William F. Guyton Associates, Houston, Texas

PROJECT EXPERIENCE

Harris County, Fort Bend County, Montgomery County, Brazoria County, Texas

Multiple Cities, Utility Districts and Water Suppliers - Performed groundwater and water supply work for numerous water systems and public and industrial water suppliers and moderate to large capacity wells completed in the Chicot, Evangeline, Jasper or Catahoula Aquifer throughout most of the Houston metropolitan area. Perform hydrogeologic, groundwater availability and development, potential pollution hazard and site assessment studies for planned public supply well sites and small to very large developments and property tracts. Completed multiple groundwater and water well projects for larger land and residential developments or cities including those for The Woodlands, Kingwood, Cinco Ranch, Greatwood, City of Sugar Land, Fairfield, Elyson, Bridgeland, City of Pearland, Lakes of Savannah, Sedona Lakes, Meridiana and many others, . Prepare well, pump, and motor parameters and design data, prepare and review well and pump specifications, evaluate geophysical logs, sand sieve analyses, well construction recommendations, pumping test and/or pump and motor data and perform field inspections of well drilling, logging, construction and/or pumping test operations for numerous, moderate to large capacity public supply wells completed in the Chicot, Evangeline or Upper Jasper Aquifer. Plan and evaluate well and/or pump rehabilitation work and projects to restore or increase the well pumping rate, decrease sand production, remedy well casing structural failures or reduce selected inorganic chemical or radionuclide concentrations to acceptable levels for public supply and assisted with testing of water wells following rehabilitation.

City of Sherman Public Supply Wells – Grayson County, Texas

Performed field testing and assisted with review of well video surveys and preparation of specifications for well rehabilitation of two wells, including installation of internal liner and gravel pack to reduce sand production in the City of Sherman's Tuck Trinity Well 1 and the Luella 4 Woodbine Well. Review of well and pump rehabilitation information for multiple deep production wells completed in the Trinity aquifer or Woodbine aquifer.

City of Houston, Texas

City of Houston Public Supply Wells Design and Construction Suppliers - Jersey Village, Spring Branch, Bellaire Braes, Plantation Hills, Kingwood, Katy Addicks, District 73, District 71, Sharpstown and Park Glen Well Fields or Service Areas: Responsible for well design, review of pilot hole, well completion and testing data and logs, construction oversight and/or field inspections for 17 new City of Houston public supply wells completed in the Evangeline Aquifer.

City of Houston, Texas

City of Houston New Water Well and Well Collection Line for District 203 - Responsible for management, review and evaluation of pilot hole and well drilling, construction, logging, testing and site inspection work for a new public supply well at a remote location and construction of a new well collection line to the existing District 203 water

City of Houston, Texas

City of Houston Water Well and Pump Rehabilitation - Responsible for oversight of well rehabilitation and pump equipment replacement, field inspections and testing for City of Houston water well rehabilitation projects for multiple City wells throughout the City service areas.

San Jacinto River Authority (SJRA), The Woodlands, Texas – Montgomery County

Responsible for performing hydrogeologic site evaluations and/or potential pollution hazard studies for completed and planned public supply wells and numerous other possible well sites. Preparation of well, pump, and motor parameters data and well specifications for large capacity public supply wells. Review and evaluation of geophysical

logs, sand sieve analyses, well construction data and completion recommendations, water level, pumping test, pump and/or motor data for 38 moderate to large capacity, public supply wells completed in the Evangeline or Upper Jasper Aquifer in The Woodlands. Perform and/or evaluate well and pump performance tests of public supply wells. Planning work, preparation of well and pump rehabilitation technical specifications and contract documents, data evaluation, construction management, inspection and testing for multiple well, pump and motor rehabilitation projects for moderate to large capacity public supply wells from 2000 – 2015. Technical review and pumping equipment inspection in 2017 and 2019. Review and evaluation of well, groundwater pumpage, water-level, aquifer and hydrogeologic data for Evangeline and Jasper Aquifers.

Cinco Ranch (Cinco MUD 1 and Cinco Southwest MUD 1) - Fort Bend County, Texas

Responsible for performing potential pollution hazards studies and site evaluations for planned public supply well sites. Preparation of well, pump, and motor parameters data and well specifications for 13 large capacity public supply wells and one large-capacity irrigation and lake supply well. Review and evaluation of well siting data, well specifications, geophysical logs, sand sieve analyses, well construction recommendations, pumping test, water quality and/or pump and motor data for 14 large capacity, public supply wells completed in the Evangeline Aquifer, one large capacity well completed in the Jasper Aquifer and one irrigation and lake supply well completed in the lower Chicot Aquifer. Field inspection of well drilling, logging, construction and/or pumping test operations. Evaluate well and pump performance tests of public supply wells. Planning work, specifications preparation and evaluating well and pump rehabilitation work for multiple public supply wells. Review and evaluation of water well, groundwater pumpage, water quality, water level and aquifer hydrogeologic data for the Chicot and Evangeline Aquifers.

Public Supply and Industrial Water Wells - Liberty County, Texas

Responsible for reviewing and evaluating of well specifications, geophysical logs, sand sieve analyses, well construction recommendations and/or pumping test and pump and motor parameters data. Work performed for public supply wells completed in the Evangeline Aquifer that serve the City of Cleveland, City of Dayton, CWA Luce Bayou facility, Forestar, Tarkington Special Utility District and TransCanada Moss Hill Station.

Orange County WCID 1 - Orange County, Texas

Responsible for reviewing and evaluating test hole geophysical logs, sand sieve analyses, well construction recommendations and pumping test and pump and motor parameters data for Orange County WCID 1 Well 6 and review hydrogeologic data for Wells 4, 5 and 6, which are completed in the lower Chicot Aquifer. Well siting evaluations and studies for multiple sites with preliminary well, pump and motor parameter information for a possible future production well or wells. Assisted the Engineer with preparation of water well and pump equipment specifications for Orange County WCID 1 Well 7 and reviewing and evaluating test hole geophysical logs, sand sieve analyses, well construction recommendations and pumping test, pump and motor parameters and water quality data for Well 7.

Public Supply Wells - Orange County, Texas

Assisted Engineer with preparation of water well and pump equipment parameters and specifications. Review and evaluation of test hole geophysical logs, sand sieve analyses, well construction recommendations and pumping test, pump and motor parameters and water quality data for Hardin County WCID 1 Pinewood Estates Replacement Well and North Hardin WSC Replacement Well 2.

Regional Water Supply Study and Public Supply Wells - Brazos County, Texas

Assist with regional water supply study and evaluation of current and possible future groundwater development in Simsboro Aquifer and other minor aquifers in Brazos County and Grimes County. Measured water levels in wells. Assisted with review of well and pump performance, water-level and groundwater pumpage data and evaluation of possible increase in the pumping rates of wells completed in the Sparta, Carrizo-Wilcox and Simsboro Aquifers that serve Texas A&M University. Assisted in study of possible groundwater development from Yegua, Sparta and/or Queen City Aquifers to provide water for the Texas A&M Golf Course and Brayton Fire Training Field and limited field inspection of well construction operations. Review and evaluation of well specifications, geophysical logs, sand sieve analyses, well construction recommendations, pumping test and permanent pump and motor design data for City of Bryan Well 18, City of College Station Well 7 and Well 8 completed in the Simsboro Aquifer. Review geophysical logs, sand sieve analyses, pilot hole water sample analyses and well construction recommendations for Dansby Power Plant Replacement Water Well. Assist Engineer in assessment of the water

well construction, historical static water level and well pumping rate data and evaluation of water well rehabilitation work and permanent pump and well motor equipment options to increase the City of College Station Well 1 and Well 2 pumping rates.

Public Supply Wells - Colorado County, Texas

Assist City of Columbus and City Engineer with review of hydrogeologic data and logs for possible new well sites and preparation of well, pump, and motor design data and well specifications for Spring Street Well 8 and Well 9 completed in the Evangeline Aquifer. Review and evaluation of geophysical logs, sand sieve analyses, water sampling, well construction recommendations and pumping test and pump and motor design data for City of Columbus Well 8 and Well 9. Review of well and testing data and logs for other City wells.

Review and evaluation of Glidden Fresh Water Supply District (FWSD) 1 water well, test hole and water quality data, logs and maps. Assist Engineer with preparation of well, pump, and motor design data and well specifications for Glidden FWSD1 Well 3 and review and evaluation of test hole and pilot hole data, geophysical logs and water sample analyses for Well 3.

Public Supply and Industrial Wells, Stream Flow Measurements and Groundwater Model - Northern Nevada

Sierra Pacific Power Company, Reno, Nevada - Review and evaluation of well siting data, well specifications, geophysical logs, sand sieve analyses, well construction recommendations, pumping test and/or pump and motor data for 10 moderate-capacity to large-capacity, public supply wells completed in the Reno area. Field inspection of well drilling, logging, construction and/or pumping test operations for 7 public supply wells in the Reno area and a water-supply well for the Tracy electrical generating station located east of Reno. Perform well and pump performance tests of 13 public supply wells. Perform water-level measurements in public supply and domestic wells in the Reno area. Assist with stream flow measurements for the Truckee River and several creeks and irrigation ditches. Assist in performing feasibility studies of artificial recharge using wells and spreading basins and evaluated pilot recharge testing using modified production wells. Assist in development and data update of Truckee Meadows MODFLOW groundwater flow model.

Hydrogeology Studies and Field Work for Mining Projects - Northern Nevada

Evaluation of hydrogeologic data and estimation of changes in groundwater storage and water levels resulting from water management and mine pumping operations in the East Wall and South Wall of the Barrick Goldstrike Mine including area in the vicinity of the underground Meikle Mine. Review of hydrogeologic, faulting, drilling, construction, pumping equipment, pumping, water-level, maps and/or cross-sections for dewatering wells, test wells and monitoring wells with one or more well screens in different geologic formations at various depths within and near the mine. Assist in the development of MODFLOW groundwater flow model for East Wall mine expansion area. Evaluate hydrogeologic data in Boulder Valley including reservoir infiltration recharge well injection, groundwater storage, water-level and spring flow data and perform field reconnaissance mapping of geologic contact between volcanic rocks and unconsolidated alluvium in the north section of Boulder Valley.

Hydrogeology Study for Limestone Quarry - Northern Michigan

Assisted in evaluating hydrogeologic, water-level and flow data to assess risk of catastrophic inflow of water due to possible deepening of the Charlevoix limestone quarry owned by the Medusa Cement Company. Performed field reconnaissance and measured geologic joints and conductivities of groundwater and surface water within and near the limestone quarry. Performed fracture and lineament analyses from CIR and black and white aerial photography.

Hydrogeology Study, Test Well and Industrial Water Supply Well – Ste. Genevieve County Missouri

Review available geologic and hydrogeologic reports and data to assess the potential groundwater supply for a large limestone quarry and cement manufacturing facility owned by Holcim. Assisted with preparation of design data and well specifications for two observation wells, a test well and a production well and review and evaluation of test hole geophysical logs and water sample data and well construction recommendations and pumping test and water sample analyses data for two small-diameter observation wells, a large-diameter test well and large-diameter production well completed in the Ozark Aquifer.

ADVANCED GROUNDWATER SOLUTIONS, LLC

2021 FEE SCHEDULE FOR CONSULTING SERVICES

Principal Hydrogeologist	\$200 to \$250/hour
Principal Engineer	\$200 to \$250/hour
Senior Associate/Hydrogeologist Senior Associate/Engineer	\$150 to \$200/hour
Senior Consultant/Hydrogeologist Senior Consultant/Engineer	\$150 to \$200/hour
Associate/Hydrogeologist Associate/Engineer	\$125 to \$175/hour
Senior Hydrogeologist Senior Environmental Engineer or Scientist Senior Modeler	\$120 to \$160/hour
Hydrogeologist II, Environmental Engineer II Environmental Scientist II	\$80 to \$120/hour
Hydrogeologist I, Environmental Engineer I Environmental Scientist I	\$70 to \$100 /hour
Senior Technician	\$75 to \$100/hour
Technician	\$70 to \$90/hour
GIS or CAD Engineer/Operator	\$80 to \$100/hour
Administrator/Clerical	\$75 to \$80/hour

Our company requires reimbursement for actual expenses that are incurred.
The use of personal vehicle for project travel or field work will be billed at the IRS approved rate per mile.
An administrative charge of 5 percent is affixed to actual expenses and 15 percent for subcontractors.

Invoices are payable upon receipt; accounts unpaid more than 45 days after the billing date are subject to 1.25 percent interest per month (15-percent annual rate) from the invoice date.

January 2021

Professional Services Contract

This agreement for the performance of services is entered into this ____ day of _____, 202_, by and between Advanced Groundwater Solutions, LLC (AGS) and _____ (Client). Subject to the contract terms and conditions below, AGS's standard fee schedule that is attached and the proposal or scope of work that is attached. In the event of a conflict between the standard contract terms and conditions or fee schedule and any attached proposal or scope of work, the terms of the proposal or scope of work shall govern.

CLIENT

Name: _____
Company: _____
Address: _____
City/State/Zip: _____
Phone: _____

CLIENT CONTACT(S)

Reporting: _____
Site/Other: _____

BILLING INFORMATION

Name: _____
Company: _____
Address: _____
City/State/Zip: _____

Project Location: Street: _____ City: _____ State: _____ Zip: _____
Proposal/Scope Date, Client Project No.: _____ #Pages Attached: _____

Brief Statement of Services: _____

Anticipated Start Date: _____ Anticipated Completion Date: _____
Preliminary Cost Estimate: \$ _____

AGS Office Location: _____ Project Manager: _____
Principal in Charge: _____
Retainer: \$ _____

Client hereby engages AGS to perform the services described and referred to herein and agrees to pay AGS for such services, and acknowledges that the terms of this agreement are subject to AGS's standard contract terms and conditions and all attached and referenced material and documents. Unless otherwise provided in the attached proposal or scope: (1) inclusion of anticipated "start" and "completion" dates shall not be construed to impose a "time is of the essence" requirement; and (2) any preliminary cost estimate shall not be construed as a "fixed-fee" or "not-to-exceed" amount, unless stated in writing in the approved proposal or scope of work. In consideration of the foregoing, AGS agrees to perform the services described and referenced herein.

ADVANCED GROUNDWATER SOLUTIONS, LLC

CLIENT

By: (signature) _____
(printed) _____
Title: _____
Date: _____
Witness: _____

By: (signature) _____
(printed) _____
Title: _____
Date: _____
Witness: _____

STANDARD TERMS AND CONDITIONS

SEE PAYMENT

- 1) AGS will submit invoices to Client monthly following any month of significant activity, and a final invoice upon completion of services. Invoices will show charges based on the current AGS Fee Schedule or other agreed-upon basis, and will include a list of charges by approved task for work performed.
- 2) Payment is due upon receipt of invoice. On accounts past due by forty-five (45) days, Client will pay a finance charge of 1.25 percent per month dating from the invoice date.
- 3) In the event Client requires expert-witness testimony, Client will pay AGS all past due balances before AGS will proceed to prepare for or offer testimony.
- 4) Client will pay the balance stated on the invoice unless Client notifies AGS of the particular item that is alleged to be incorrect within fifteen (15) days from the invoice date. Client will remit the balance of undisputed items in a timely manner while a disputed item is being reviewed.
- 5) In the event Client fails to pay AGS within forty-five (45) days following invoice date, AGS may consider the default a breach of the consulting agreement and all duties of AGS may be suspended or terminated, and work product may be withheld, without liability of any kind to AGS.

OWNERSHIP OF DOCUMENTS AND CONFIDENTIALITY

- 1) Project report(s), project deliverable(s), and written work products prepared by AGS and provided to the Client during the project shall remain the property of the Client.
- 2) Field data and notes, laboratory test or technical data, calculations, estimates, and other documents prepared in the course of consulting service shall remain the property of AGS, but may be requested by the Client during the project.
- 3) Client agrees that all reports and other work that AGS furnishes to Client or Client's agents which are not paid for under the scope of work, will be returned to AGS upon demand and will not be used for any purpose whatsoever.
- 4) Documents provided to AGS by the Client will be returned to the Client, upon request at the completion of work at Client's cost.
- 5) Reuse of AGS report(s), project deliverable(s) or other written materials by the Client or others, on extensions or modifications of the project or on other sites, without written permission from AGS or suitable adaptation by AGS for the intended purpose, shall be at the Client's or user's sole risk, without liability on the part of AGS, and Client agrees to indemnify and hold AGS harmless from all claims, damages and expenses, including attorney's fees.
- 4) AGS shall maintain Client's project data, report(s) and project deliverable(s) in strictest confidence, and will release such project data, report(s), project deliverable(s) or technical information to others only upon express written permission from the Client.

DISPUTES

- 1) Client will pay all reasonable collection expenses or litigation fees, including attorney fees, that AGS incurs in collecting any delinquent amount Client owes.
- 2) If the Client institutes a suit against AGS which is dismissed or for which judgment is rendered for AGS, Client will pay AGS for all costs of defense including attorney fees, expert witness fees and court costs.

INSURANCE AND INDEMNIFICATION

- 1) AGS will carry Workers Compensation, General Liability, Automobile Liability, Excess Umbrella-Form Liability and Professional Liability insurance policies in amounts which AGS considers adequate. Certificates of insurance will be provided to the Client upon request. Within the terms and conditions of the insurance, AGS agrees to indemnify Client against loss caused by actions of AGS, its employees or its subcontractors. AGS will not be responsible for liability beyond the limits and conditions reflected herein and in the Certificate of the Insurance. At Client's request, AGS will seek additional insurance coverage or limits for specific projects, and will bill the Client for the additional premium cost. AGS will require that its field subcontractors are insured to the same levels required of AGS by the Client.
- 2) AGS's professional liability will be limited to the value of the consulting services performed.
- 3) AGS will not be responsible for any loss or liability related to negligence of the Client or others employed by Client, or from negligence by any person for whose conduct AGS is not legally responsible.
- 4) Neither the Client nor AGS, their respective officers, directors, partners, employees, contractors or sub-consultants shall be liable to the other or shall make any claim for any incidental, indirect or consequential damages arising out of or connected in any way to the Project or to this Agreement. This mutual waiver of consequential damages shall include, but is not limited to, loss of use, loss of profit, loss of business, loss of income, loss of reputation

and any other consequential damages that either party may have incurred from any cause of action including negligence, strict liability, breach of contract and breach of strict or implied warranty. Both the Client and AGS shall require similar waivers of consequential damages protecting all the entities or persons named herein in all contracts and subcontracts with others involved in this project.

TEST BORINGS, OTHER EXPLORATIONS AND LAB SERVICES

- 1) To drill test borings or perform other explorations, AGS may engage a contractor experienced in this work. The Contractor's invoices plus a fifteen (15) percent service charge will be added to AGS's invoice. On occasion, AGS engages the specialized services of a testing firm or laboratory, individual consultants or other companies to participate in a project. When considered necessary, these firms or other consultants will be used with Client's approval. The cost of such services plus a fifteen (15) percent service charge will be included in our invoice. Such specialists will be wholly responsible for their work product(s).
- 2) Alternatively, at Client's request, AGS will recommend contractor(s) or specialist(s) for Client to enter into direct contract(s) with. In that event, invoices for these outside services will be issued to Client for direct payment to the contractor(s). AGS review and approval of each invoice will be provided on request. Under either alternative, AGS does not guarantee and is not responsible for the performance of the contractor(s) or the accuracy of their reports or results.

GEOPHYSICAL, GEOCHEMICAL AND TESTING INSTRUMENTATION SERVICES OR EQUIPMENT

AGS is equipped to provide or can rent or lease specialized geophysical, geochemical or other testing instrumentation services or equipment according to the project needs. Fees for these equipment services will be based on use charges at standard rates published by AGS or the equipment rental or lease costs plus AGS fees for consulting services.

CUSTODY OF MATERIALS

- 1) In the course of work, AGS may take custody of and transport soil and/or water samples from Client's site. Upon the completion of evaluation and/or testing of such samples, AGS reserves the right to return the samples to Client at Client's expense, and Client agrees to accept such samples and the responsibility for their proper and legal disposal.
- 2) At no time, under any circumstances, will AGS personnel represent AGS or themselves as generators of waste, hazardous or otherwise, which may have to be removed from or disposed of on a site, and AGS personnel will not sign hazardous waste manifests on behalf of Client.

RIGHT OF ENTRY

Client will furnish right-of-entry on the site for AGS to conduct the work. AGS will take reasonable precautions to minimize damage to the land from use of its equipment, but has not included the cost for restoration of damage that may result from AGS site operations in the AGS fee. If AGS is required to restore the land to its former condition, this will be arranged and the restoration cost plus fifteen (15) percent will be added to the associated AGS fee.

DAMAGE TO SUBSURFACE STRUCTURES

Reasonable care will be exercised in locating subsurface structures in the vicinity of proposed subsurface explorations performed by AGS or an AGS subcontractor. This will include contact with the local agency coordinating subsurface utility information (i.e., "Call Before You Dig" service) and a review of plans provided by Client for the site to be investigated. AGS shall rely upon any information provided by Client or Client's agent or representative. If the locations of underground structures are not known accurately or cannot be confirmed, then there will be a degree of risk to Client associated with conducting the work. In the absence of confirmed underground structure locations, Client agrees to accept the risk of damage and possible costs associated with repair and restoration of damage resulting from exploration work by AGS or an AGS subcontractor.

PETROLEUM PRODUCTS AND HAZARDOUS MATERIALS

- 1) Petroleum products, hazardous materials, or asbestos may exist at a site where there is no reason to believe they should be present. If, at any time, evidence of the existence or possible existence of such substances is discovered, AGS reserves the right to renegotiate any consulting agreement, the fees for AGS services and our continued involvement in the project. AGS will notify Client as soon as possible should unanticipated hazardous materials or suspected hazardous materials be discovered.
- 2) The discovery of hazardous materials or suspected hazardous materials may make it necessary for AGS to take immediate measures to protect human health and safety and/or the environment. Client agrees to compensate AGS for the cost of any and all measures that, in our

professional onsite judgment are justified to preserve and protect the health and safety of AGS personnel, Client's employees and/or the public, and/or the environment. In addition, Client waives any claims against AGS and, to the full extent permitted by law, agrees to indemnify, defend and hold AGS harmless from any and all claims, damages and liability, including but not limited to cost of defense, in any way connected with petroleum products, hazardous materials or asbestos.

STANDARD OF CARE

In accepting the AGS proposal for consulting services, Client acknowledges the inherent risks associated with any subsurface investigation. In performing professional services, AGS will use that degree of care and skill ordinarily exercised under similar circumstances by members of the profession practicing in the same or similar localities. AGS makes no express or implied warranty beyond our commitment to conform to this high standard of professional practice.

January 2021

Financial Report - Item #7

Clearwater Underground Water Conservation
Balance Sheet
As of December 31, 2020

	Dec 31, 20
ASSETS	
Current Assets	
Checking/Savings	
10005 · Cash-Reg Operating	48,228.09
10500 · Cash-TexPool Prime	599,562.68
10505 · Cash - TexPool	594,296.72
Total Checking/Savings	1,242,087.49
Other Current Assets	
11005 · Accounts Receivable - Taxes	21,737.60
Total Other Current Assets	21,737.60
Total Current Assets	1,263,825.09
Fixed Assets	
15005 · Land	59,981.29
15010 · Leasehold Improvements	19,000.00
15015 · Building	306,734.08
15016 · Storage Building	104,382.03
15018 · Monitor Wells	92,938.18
15019 · Mobile Classroom Trailer	90,688.85
15020 · Field Equipment	17,243.55
15023 · Vehicles	6,920.00
15025 · Office Equipment	71,574.04
15030 · Accumulated Depreciation	-177,272.36
Total Fixed Assets	592,189.66
TOTAL ASSETS	1,856,014.75
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Other Current Liabilities	
21000 · Deferred Tax Revenue	21,737.60
21050 · Compensated Absences Accrued	9,429.60
Total Other Current Liabilities	31,167.20
Total Current Liabilities	31,167.20
Total Liabilities	31,167.20
Equity	
31000 · Unappropriated Fund Balance	863,207.26
32000 · *Retained Earnings	-42,815.22
33000 · Investment in Fixed Assets	592,189.66
Net Income	412,265.85
Total Equity	1,824,847.55
TOTAL LIABILITIES & EQUITY	1,856,014.75

**Clearwater Underground Water Conservation
Profit & Loss Budget vs. Actual
October through December 2020**

9:52 AM

01/07/2021

Accrual Basis

	Dec '20	Oct '20 thru Dec '20	FY21 Original Budget	FY21 Amended Budget	\$ Over Budget
Ordinary Income/Expense					
Income					
40005 · Application Fee Income	5,700.00	5,700.00	30,000.00	30,000.00	-24,300.00
40010 · Bell CAD Current Year Tax	37,987.23	544,327.31	736,203.00	736,203.00	-191,875.69
40015 · Bell CAD Delinquent Tax	629.61	2,547.71	12,500.00	12,500.00	-9,952.29
40020 · Interest Income	120.26	343.32	15,000.00	15,000.00	-14,656.68
40030 · Transport Fee Income	0.00	0.00	1,500.00	1,500.00	-1,500.00
Total Income	44,437.10	552,918.34	795,203.00	795,203.00	-242,284.66
Gross Profit	44,437.10	552,918.34	795,203.00	795,203.00	-242,284.66
Expense					
50000 · Administrative Expenses					
50100 · Audit	0.00	0.00	7,500.00	7,500.00	-7,500.00
50200 · Conferences & Prof Development	0.00	375.00	4,000.00	4,000.00	-3,625.00
50250 · Contingency Fund	0.00	0.00	26.00	26.00	-26.00
50300 · Director Expenses					
50305 · At Large	0.00	0.00	1,500.00	1,500.00	-1,500.00
50310 · Pct. 1	0.00	0.00	1,500.00	1,500.00	-1,500.00
50315 · Pct. 2	0.00	0.00	1,500.00	1,500.00	-1,500.00
50320 · Pct. 3	0.00	0.00	1,500.00	1,500.00	-1,500.00
50325 · Pct. 4	0.00	0.00	1,500.00	1,500.00	-1,500.00
Total 50300 · Director Expenses	0.00	0.00	7,500.00	7,500.00	-7,500.00
50400 · Director Fees					
50405 · At Large	150.00	450.00	2,550.00	2,550.00	-2,100.00
50410 · Pct. 1	0.00	0.00	2,550.00	2,550.00	-2,550.00
50415 · Pct. 2	150.00	600.00	2,550.00	2,550.00	-1,950.00
50420 · Pct. 3	150.00	450.00	2,550.00	2,550.00	-2,100.00
50425 · Pct. 4	0.00	0.00	2,550.00	2,550.00	-2,550.00
Total 50400 · Director Fees	450.00	1,500.00	12,750.00	12,750.00	-11,250.00
50500 · Dues & Memberships	693.00	2,493.00	2,850.00	2,850.00	-357.00
50550 · Election Expense	0.00	0.00	500.00	500.00	-500.00
50600 · GMA 8 Expenses					
50605 · Technical Committee	230.40	230.40	5,000.00	5,000.00	-4,769.60
50610 · Administration	106.39	106.39	5,000.00	5,000.00	-4,893.61
Total 50600 · GMA 8 Expenses	336.79	336.79	10,000.00	10,000.00	-9,663.21
50700 · Meals	0.00	0.00	1,000.00	1,000.00	-1,000.00
50800 · Mileage Reimbursements	0.00	0.00	5,000.00	5,000.00	-5,000.00
50900 · Travel & Hotel	0.00	0.00	4,500.00	4,500.00	-4,500.00
Total 50000 · Administrative Expenses	1,479.79	4,704.79	55,626.00	55,626.00	-50,921.21

	Dec '20	Oct '20 thru Dec '20	FY21 Original Budget	FY21 Amended Budget	\$ Over Budget
52000 · Salary Costs					
52005 · Administrative Assistant	4,093.67	12,281.01	49,124.00	49,124.00	-36,842.99
52010 · Educational Coord/Support Tech	3,485.00	10,455.00	41,820.00	41,820.00	-31,365.00
52015 · Manager	6,990.67	20,972.01	83,888.00	83,888.00	-62,915.99
52020 · Part Time/Intern	0.00	0.00	2,640.00	2,640.00	-2,640.00
52025 · Office Assistant/Field Tech	3,400.00	10,200.00	40,800.00	40,800.00	-30,600.00
52040 · Health Insurance	371.66	9,110.92	41,274.00	41,274.00	-32,163.08
52045 · Payroll Taxes & Work Comp	1,403.09	4,161.20	19,645.00	19,645.00	-15,483.80
52050 · Retirement	739.94	2,219.82	9,704.00	9,704.00	-7,484.18
52055 · Payroll Expenses	0.00	8.66	125.00	125.00	-116.34
52060 · Freshbenies	36.00	108.00	432.00	432.00	-324.00
Total 52000 · Salary Costs	20,520.03	69,516.62	289,452.00	289,452.00	-219,935.38
53000 · Operating Expenses					
53010 · Bank Service Charges	0.00	36.00	50.00	50.00	-14.00
53020 · Advertisement	0.00	523.00	3,500.00	3,500.00	-2,977.00
53030 · Appraisal District	1,913.00	1,913.00	8,500.00	8,500.00	-6,587.00
53100 · Clearwater Studies					
53105 · Trinity Studies					
53105.1 · Pumping Distribution	0.00	0.00	0.00	0.00	0.00
53105.2 · Pumping Test	0.00	0.00	0.00	0.00	0.00
53105.3 · Synoptic	0.00	0.00	5,120.00	5,120.00	-5,120.00
53105.4 · GAM Run	0.00	0.00	0.00	0.00	0.00
53105.5 · Mgmt Options	0.00	0.00	16,400.00	16,400.00	-16,400.00
53105.6 · Water Quality Studies	0.00	0.00	57,600.00	57,600.00	-57,600.00
Total 53105 · Trinity Studies	0.00	0.00	79,120.00	79,120.00	-79,120.00
53110 · Edwards BFZ Studies					
53110.1 · Pumping Distribution	0.00	0.00	0.00	0.00	0.00
53110.2 · Pumping Test	0.00	0.00	0.00	0.00	0.00
53110.3 · Synoptic	0.00	0.00	0.00	0.00	0.00
53110.4 · Spring Shed (Baylor)	0.00	0.00	0.00	0.00	0.00
53110.5 · Water Quality Studies	0.00	0.00	0.00	0.00	0.00
53110.6 · GAM Calibration	0.00	0.00	45,000.00	45,000.00	-45,000.00
Total 53110 · Edwards BFZ Studies	0.00	0.00	45,000.00	45,000.00	-45,000.00
53115 · Drought Contingency Plan	0.00	0.00	0.00	0.00	0.00
53120 · Endangered Species					
53120.1 · Coalition	0.00	0.00	0.00	0.00	0.00
53120.2 · Reimburseable Order	0.00	0.00	0.00	0.00	0.00
53120.3 · 4(d) rule	0.00	0.00	0.00	0.00	0.00
53120.4 · DPS Petition	0.00	0.00	0.00	0.00	0.00
53120 · Endangered Species - Other	0.00	0.00	0.00	0.00	0.00
Total 53120 · Endangered Species	0.00	0.00	0.00	0.00	0.00

	Dec '20	Oct '20 thru Dec '20	FY21 Original Budget	FY21 Amended Budget	\$ Over Budget
53125 · Environmental Flows	0.00	0.00	0.00	0.00	0.00
53130 · General Consulting					
53130.1 · DFC Process	0.00	0.00	10,000.00	10,000.00	-10,000.00
53130.2 · Eval of Rules	3,365.00	3,455.00	5,000.00	5,000.00	-1,545.00
53130.3 · Eval. Hydrogeologic Report	0.00	0.00	0.00	0.00	0.00
53130.4 · Investigations	0.00	0.00	7,000.00	7,000.00	-7,000.00
53130.5 · Geo Logging	0.00	5,092.50	5,000.00	5,000.00	92.50
53130.6 · Aquifer Monitor Well Tool	4,561.25	4,606.25	10,240.00	10,240.00	-5,633.75
53130.7 · ASR Study	0.00	0.00	20,000.00	20,000.00	-20,000.00
53130.8 · Data Release	0.00	0.00	0.00	0.00	0.00
Total 53130 · General Consulting	7,926.25	13,153.75	57,240.00	57,240.00	-44,086.25
53135 · Monitor Well Construction	0.00	0.00	0.00	0.00	0.00
53140 · Monitor Wells Expenses	24.28	24.28	15,000.00	15,000.00	-14,975.72
53141 · Weather Station Expense	0.00	0.00	2,000.00	2,000.00	-2,000.00
53145 · Spring Flow Gauge	0.00	0.00	0.00	0.00	0.00
53150 · Water Quality	0.00	256.12	2,500.00	2,500.00	-2,243.88
53155 · 3-D Visualization	10,170.00	24,270.00	40,000.00	40,000.00	-15,730.00
Total 53100 · Clearwater Studies	18,120.53	37,704.15	240,860.00	240,860.00	-203,155.85
53200 · Spring Flow Gage System					
53205 · Op. & Maintenance	0.00	0.00	15,900.00	15,900.00	-15,900.00
53210 · Installation	0.00	0.00	0.00	0.00	0.00
Total 53200 · Spring Flow Gage System	0.00	0.00	15,900.00	15,900.00	-15,900.00
53300 · Computer Consulting					
53305 · Enhancements - Data Base	0.00	0.00	0.00	0.00	0.00
53306 · Hosting - Data Base	0.00	0.00	3,000.00	3,000.00	-3,000.00
53310 · Hosting - PDI	0.00	0.00	1,000.00	1,000.00	-1,000.00
53311 · Hosting - Website	0.00	0.00	1,800.00	1,800.00	-1,800.00
53312 · Enhancements - Website	0.00	0.00	0.00	0.00	0.00
53315 · IT Network Sustainment	450.00	1,350.00	5,400.00	5,400.00	-4,050.00
53317 · Management Tool Sustainment	180.00	180.00	1,640.00	1,640.00	-1,460.00
Total 53300 · Computer Consulting	630.00	1,530.00	12,840.00	12,840.00	-11,310.00
53400 · Computer Licenses/Virus Prtctn	0.00	0.00	1,500.00	1,500.00	-1,500.00
53450 · Computer Repairs and Supplies	200.08	200.08	1,500.00	1,500.00	-1,299.92
53500 · Computer Software & Hardware	495.79	495.79	4,000.00	4,000.00	-3,504.21
53550 · Copier/Scanner/Plotter	486.56	1,459.68	6,000.00	6,000.00	-4,540.32
53600 · Educational Outreach/Marketing					
53603 · Event Sponsor/Income	0.00	0.00	0.00	0.00	0.00
53605 · Event Cost	5.39	260.78	10,000.00	10,000.00	-9,739.22
53615 · Promotional Items	0.00	0.00	5,000.00	5,000.00	-5,000.00
53620 · Supplies & Equipment	0.00	42.22	4,500.00	4,500.00	-4,457.78
53625 · Curriculum	0.00	0.00	0.00	0.00	0.00
Total 53600 · Educational Outreach/Marketing	5.39	303.00	19,500.00	19,500.00	-19,197.00

	Dec '20	Oct '20 thru Dec '20	FY21 Original Budget	FY21 Amended Budget	\$ Over Budget
53650 · Furniture & Equipment	0.00	0.00	1,500.00	1,500.00	-1,500.00
53700 · Legal					
53701 · Drought Contingency Plan	0.00	0.00	0.00	0.00	0.00
53702 · Endangered Species	5,212.00	5,212.00	15,000.00	15,000.00	-9,788.00
53703 · General (rules/accountability)	0.00	0.00	15,000.00	15,000.00	-15,000.00
53704 · Legislative Research/Analysis	0.00	0.00	2,500.00	2,500.00	-2,500.00
53705 · Legislative Services	2,470.00	2,470.00	34,000.00	34,000.00	-31,530.00
53706 · GMA/DFC/MAG support	0.00	0.00	10,000.00	10,000.00	-10,000.00
Total 53700 · Legal	7,682.00	7,682.00	76,500.00	76,500.00	-68,818.00
53720 · Office Supplies	476.64	864.29	3,000.00	3,000.00	-2,135.71
53730 · Permit Reviews					
53731 · Geoscience	0.00	1,035.00	15,000.00	15,000.00	-13,965.00
53732 · Legal Evaluation	0.00	0.00	15,000.00	15,000.00	-15,000.00
Total 53730 · Permit Reviews	0.00	1,035.00	30,000.00	30,000.00	-28,965.00
53740 · Postage	21.24	21.24	2,500.00	2,500.00	-2,478.76
53750 · Printing	0.00	0.00	2,500.00	2,500.00	-2,500.00
53760 · Reserve for Uncollected Taxes	0.00	0.00	20,000.00	20,000.00	-20,000.00
53780 · Subscriptions	0.00	184.88	900.00	900.00	-715.12
53785 · Mobile Classroom Expense	0.00	0.00	2,000.00	2,000.00	-2,000.00
53790 · Vehicle Expense	122.21	1,126.70	4,000.00	4,000.00	-2,873.30
Total 53000 · Operating Expenses	30,153.44	55,078.81	457,050.00	457,050.00	-401,971.19
54000 · Facility Costs					
54100 · Insurance					
54101 · Liability	0.00	1,177.82	1,300.00	1,300.00	-122.18
54102 · Property	0.00	1,740.48	1,800.00	1,800.00	-59.52
54103 · Surety Bonds	200.00	200.00	1,200.00	1,200.00	-1,000.00
54104 · Worker's Comp	0.00	811.60	1,100.00	1,100.00	-288.40
54105 · Liability - Vehicle	0.00	819.28	1,250.00	1,250.00	-430.72
Total 54100 · Insurance	200.00	4,749.18	6,650.00	6,650.00	-1,900.82
54200 · Building Repairs/Maintenance	100.00	3,340.91	5,000.00	5,000.00	-1,659.09
54300 · Janitorial Service	300.00	900.00	3,600.00	3,600.00	-2,700.00
54400 · Janitorial Supplies	79.05	79.05	750.00	750.00	-670.95
54500 · Lawn Maintenance/Service	185.00	555.00	2,500.00	2,500.00	-1,945.00
54600 · Security	29.95	89.85	375.00	375.00	-285.15
Total 54000 · Facility Costs	894.00	9,713.99	18,875.00	18,875.00	-9,161.01
55000 · Utilities					
55200 · Electricity	126.76	438.41	2,500.00	2,500.00	-2,061.59
55300 · Internet	149.99	299.98	2,000.00	2,000.00	-1,700.02
55400 · Phone	160.54	317.13	2,400.00	2,400.00	-2,082.87
55500 · Water/Garbage	382.71	582.76	2,300.00	2,300.00	-1,717.24
Total 55000 · Utilities	820.00	1,638.28	9,200.00	9,200.00	-7,561.72

	Dec '20	Oct '20 thru Dec '20	FY21 Original Budget	FY21 Amended Budget	\$ Over Budget
Total Expense	53,867.26	140,652.49	830,203.00	830,203.00	-689,550.51
Net Ordinary Income	-9,430.16	412,265.85	-35,000.00	-35,000.00	447,265.85
Other Income/Expense					
Other Income					
61050 - Reserve Funds from Prior Years	0.00	0.00	35,000.00	35,000.00	-35,000.00
Total Other Income	0.00	0.00	35,000.00	35,000.00	-35,000.00
Net Other Income	0.00	0.00	35,000.00	35,000.00	-35,000.00
Net Income	-9,430.16	412,265.85	0.00	0.00	412,265.85

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Accrual Basis

Type	Date	Num	Name	Memo	Amount	Balance
Ordinary Income/Expense						
Income						
40005 - Application Fee Income						
Invoice	12/21/2020	129	Victory Rock Texas, LLC	Permit Applic...	3,500.00	3,500.00
Invoice	12/21/2020	130	Tomas Reynosa	Permit Applic...	200.00	3,700.00
Invoice	12/23/2020	128	Whitley 20	Permit Applic...	1,000.00	4,700.00
Invoice	12/23/2020	128	Whitley 20	Permit Applic...	1,000.00	5,700.00
Invoice	12/23/2020	128	Whitley 20	Permit Applic...	1,000.00	6,700.00
Credit Memo	12/29/2020	131	Whitley 20	Permit Applic...	-1,000.00	5,700.00
Total 40005 - Application Fee Income					5,700.00	5,700.00
40010 - Bell CAD Current Year Tax						
Deposit	12/03/2020			Deposit	12,234.35	12,234.35
Deposit	12/03/2020			Deposit	3.35	12,237.70
Deposit	12/03/2020			Deposit	-827.71	11,409.99
Deposit	12/03/2020			Deposit	67.64	11,477.63
Deposit	12/03/2020			Deposit	-0.03	11,477.60
Deposit	12/16/2020			Deposit	26,911.03	38,388.63
Deposit	12/16/2020			Deposit	1.80	38,390.43
Deposit	12/16/2020			Deposit	-459.53	37,930.90
Deposit	12/16/2020			Deposit	-0.03	37,930.87
Deposit	12/29/2020			Temple housi...	56.36	37,987.23
Total 40010 - Bell CAD Current Year Tax					37,987.23	37,987.23
40015 - Bell CAD Deliquent Tax						
Deposit	12/03/2020			Deposit	125.94	125.94
Deposit	12/03/2020			Deposit	-0.37	125.57
Deposit	12/03/2020			Deposit	0.46	126.03
Deposit	12/16/2020			Deposit	571.49	697.52
Deposit	12/16/2020			Deposit	-67.91	629.61
Total 40015 - Bell CAD Deliquent Tax					629.61	629.61
40020 - Interest Income						
Deposit	12/31/2020			Deposit	73.80	73.80
Deposit	12/31/2020			Deposit	46.46	120.26
Total 40020 - Interest Income					120.26	120.26
Total Income					44,437.10	44,437.10
Gross Profit					44,437.10	44,437.10
Expense						
50000 - Administrative Expenses						
50400 - Director Fees						
50405 - At Large						
Bill	12/29/2020	Dec2020	David Cole	Board Mtg D...	150.00	150.00
Total 50405 - At Large					150.00	150.00
50415 - Pct. 2						
Bill	12/29/2020	Dec2020	Gary Young	Board Mtg D...	150.00	150.00
Total 50415 - Pct. 2					150.00	150.00
50420 - Pct. 3						
Bill	12/29/2020	Dec2020	Jody Williams	Board Mtg D...	150.00	150.00
Total 50420 - Pct. 3					150.00	150.00
Total 50400 - Director Fees					450.00	450.00
50500 - Dues & Memberships						
Bill	12/09/2020	inv 4773	Texas Water Conservat...	Inv 4773 (sho...	357.00	357.00
Bill	12/29/2020	TW20059	Tanglewood POA	Acct TW20059	336.00	693.00
Total 50500 - Dues & Memberships					693.00	693.00

Clearwater Underground Water Conservation

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Accrual Basis

Type	Date	Num	Name	Memo	Amount	Balance
50600 · GMA 8 Expenses						
50605 · Technical Committee						
Bill	12/09/2020	Inv 20201202	North Texas GCD	Inv 20201202	230.40	230.40
Total 50605 · Technical Committee					230.40	230.40
50610 · Administration						
Bill	12/09/2020	Inv 20201202	North Texas GCD	Inv 20201202	106.39	106.39
Total 50610 · Administration					106.39	106.39
Total 50600 · GMA 8 Expenses					336.79	336.79
Total 50000 · Administrative Expenses					1,479.79	1,479.79
52000 · Salary Costs						
52005 · Administrative Assistant						
Paycheck	12/30/2020	DD1273	Shelly Chapman	Direct Deposit	3,648.71	3,648.71
Paycheck	12/30/2020	DD1273	Shelly Chapman	Direct Deposit	444.96	4,093.67
Total 52005 · Administrative Assistant					4,093.67	4,093.67
52010 · Educational Coord/Support Tech						
Paycheck	12/30/2020	DD1274	Tristin S Smith	Direct Deposit	3,181.96	3,181.96
Paycheck	12/30/2020	DD1274	Tristin S Smith	Direct Deposit	303.04	3,485.00
Total 52010 · Educational Coord/Support Tech					3,485.00	3,485.00
52015 · Manager						
Paycheck	12/30/2020	DD1272	Richard E Aaron	Direct Deposit	6,990.67	6,990.67
Total 52015 · Manager					6,990.67	6,990.67
52025 · Office Assistant/Field Tech						
Paycheck	12/30/2020	DD1271	Corey C Dawson	Direct Deposit	3,400.00	3,400.00
Paycheck	12/30/2020	DD1271	Corey C Dawson	Direct Deposit	0.00	3,400.00
Paycheck	12/30/2020	DD1271	Corey C Dawson	Direct Deposit	0.00	3,400.00
Total 52025 · Office Assistant/Field Tech					3,400.00	3,400.00
52040 · Health Insurance						
Paycheck	12/30/2020	DD1271	Corey C Dawson	Direct Deposit	500.00	500.00
Paycheck	12/30/2020	DD1272	Richard E Aaron	Direct Deposit	500.00	1,000.00
Paycheck	12/30/2020	DD1273	Shelly Chapman	Direct Deposit	-628.34	371.66
Paycheck	12/30/2020	DD1273	Shelly Chapman	Direct Deposit	1,219.72	1,591.38
Paycheck	12/30/2020	DD1273	Shelly Chapman	Direct Deposit	-1,219.72	371.66
Paycheck	12/30/2020	DD1274	Tristin S Smith	Direct Deposit	0.00	371.66
Paycheck	12/30/2020	DD1274	Tristin S Smith	Direct Deposit	616.02	987.68
Paycheck	12/30/2020	DD1274	Tristin S Smith	Direct Deposit	-616.02	371.66
Total 52040 · Health Insurance					371.66	371.66
52045 · Payroll Taxes & Work Comp						
Paycheck	12/30/2020	DD1271	Corey C Dawson	Direct Deposit	241.80	241.80
Paycheck	12/30/2020	DD1271	Corey C Dawson	Direct Deposit	56.55	298.35
Paycheck	12/30/2020	DD1271	Corey C Dawson	Direct Deposit	0.00	298.35
Paycheck	12/30/2020	DD1272	Richard E Aaron	Direct Deposit	464.42	762.77
Paycheck	12/30/2020	DD1272	Richard E Aaron	Direct Deposit	108.62	871.39
Paycheck	12/30/2020	DD1272	Richard E Aaron	Direct Deposit	0.00	871.39
Paycheck	12/30/2020	DD1273	Shelly Chapman	Direct Deposit	214.85	1,086.24
Paycheck	12/30/2020	DD1273	Shelly Chapman	Direct Deposit	50.25	1,136.49
Paycheck	12/30/2020	DD1273	Shelly Chapman	Direct Deposit	0.00	1,136.49
Paycheck	12/30/2020	DD1274	Tristin S Smith	Direct Deposit	216.07	1,352.56
Paycheck	12/30/2020	DD1274	Tristin S Smith	Direct Deposit	50.53	1,403.09
Paycheck	12/30/2020	DD1274	Tristin S Smith	Direct Deposit	0.00	1,403.09
Total 52045 · Payroll Taxes & Work Comp					1,403.09	1,403.09

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Accrual Basis

Type	Date	Num	Name	Memo	Amount	Balance
52050 - Retirement						
Paycheck	12/30/2020	DD1271	Corey C Dawson	Direct Deposit	175.50	175.50
Paycheck	12/30/2020	DD1272	Richard E Aaron	Direct Deposit	337.08	512.58
Paycheck	12/30/2020	DD1273	Shelly Chapman	Direct Deposit	122.81	635.39
Paycheck	12/30/2020	DD1274	Tristin S Smith	Direct Deposit	104.55	739.94
Total 52050 - Retirement					739.94	739.94
52060 - Freshbenies						
Check	12/04/2020	Dec20TS	New Benefits Ltd - Fres...	Freshbenies ...	18.00	18.00
Check	12/04/2020	Dec20SC	New Benefits Ltd - Fres...	Freshbenies ...	18.00	36.00
Paycheck	12/30/2020	DD1273	Shelly Chapman	Direct Deposit	18.00	54.00
Paycheck	12/30/2020	DD1273	Shelly Chapman	Direct Deposit	-18.00	36.00
Paycheck	12/30/2020	DD1274	Tristin S Smith	Direct Deposit	18.00	54.00
Paycheck	12/30/2020	DD1274	Tristin S Smith	Direct Deposit	-18.00	36.00
Total 52060 - Freshbenies					36.00	36.00
Total 52000 - Salary Costs					20,520.03	20,520.03
53000 - Operating Expenses						
53030 - Appraisal District						
Bill	12/09/2020	2nd Qtr - 2021	Tax Appraisal District - ...	2021 - 2nd Qtr	1,913.00	1,913.00
Total 53030 - Appraisal District					1,913.00	1,913.00
53100 - Clearwater Studies						
53130 - General Consulting						
53130.2 - Eval of Rules						
Bill	12/29/2020	Inv TX-396	LRE Water, LLC	INv TX-396	3,365.00	3,365.00
Total 53130.2 - Eval of Rules					3,365.00	3,365.00
53130.6 - Aquifer Monitor Well Tool						
Bill	12/29/2020	Inv TX-396	LRE Water, LLC	TX-396	4,561.25	4,561.25
Total 53130.6 - Aquifer Monitor Well Tool					4,561.25	4,561.25
Total 53130 - General Consulting					7,926.25	7,926.25
53140 - Monitor Wells Expenses						
Bill	12/09/2020		Card Service Center		24.28	24.28
Total 53140 - Monitor Wells Expenses					24.28	24.28
53155 - 3-D Visualization						
Bill	12/09/2020	Inv #7	Allan R Standen, LLC	Inv #7	10,170.00	10,170.00
Total 53155 - 3-D Visualization					10,170.00	10,170.00
Total 53100 - Clearwater Studies					18,120.53	18,120.53
53300 - Computer Consulting						
53315 - IT Network Sustainment						
Bill	12/09/2020	Inv 16903	Engineer Austin, LLC	Inv 16903	450.00	450.00
Total 53315 - IT Network Sustainment					450.00	450.00
53317 - Management Tool Sustainment						
Bill	12/29/2020	Inv TX-396	LRE Water, LLC	TX-396	180.00	180.00
Total 53317 - Management Tool Sustainment					180.00	180.00
Total 53300 - Computer Consulting					630.00	630.00
53450 - Computer Repairs and Supplies						
Bill	12/09/2020		Card Service Center	Monitor stand...	200.08	200.08
Total 53450 - Computer Repairs and Supplies					200.08	200.08

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Accrual Basis

Type	Date	Num	Name	Memo	Amount	Balance
		53500 · Computer Software & Hardware				
Bill	12/09/2020		Card Service Center	Intuit Payroll ...	495.79	495.79
		Total 53500 · Computer Software & Hardware				
					495.79	495.79
		53550 · Copier/Scanner/Plotter				
Bill	12/09/2020	Inv 0120273...	Xerox	Inv 012027337	486.56	486.56
		Total 53550 · Copier/Scanner/Plotter				
					486.56	486.56
		53600 · Educational Outreach/Marketing				
		53605 · Event Cost				
Bill	12/09/2020		Card Service Center	GoTo Meetin...	5.39	5.39
		Total 53605 · Event Cost				
					5.39	5.39
		Total 53600 · Educational Outreach/Marketing				
					5.39	5.39
		53700 · Legal				
		53702 · Endangered Species				
Bill	12/29/2020	Inv 97516255	Lloyd Gosselink Attorne...	Inv 97516255	5,212.00	5,212.00
		Total 53702 · Endangered Species				
					5,212.00	5,212.00
		53705 · Legislative Services				
Bill	12/09/2020	Inv 97516298	Lloyd Gosselink Attorne...	Inv 97516298	2,470.00	2,470.00
		Total 53705 · Legislative Services				
					2,470.00	2,470.00
		Total 53700 · Legal				
					7,682.00	7,682.00
		53720 · Office Supplies				
Bill	12/29/2020	Inv IN-1416...	Perry Office Plus	Paper for Ne...	388.80	388.80
Bill	12/29/2020	Inv IN-1416...	Perry Office Plus	Inv IN-1416172	87.84	476.64
		Total 53720 · Office Supplies				
					476.64	476.64
		53740 · Postage				
Bill	12/09/2020		Card Service Center		21.24	21.24
		Total 53740 · Postage				
					21.24	21.24
		53790 · Vehicle Expense				
Bill	12/09/2020		CEFCO		122.21	122.21
		Total 53790 · Vehicle Expense				
					122.21	122.21
		Total 53000 · Operating Expenses				
					30,153.44	30,153.44
		54000 · Facility Costs				
		54100 · Insurance				
		54103 · Surety Bonds				
Bill	12/29/2020		Victor Insurance Manag...	Surety Bond ...	200.00	200.00
		Total 54103 · Surety Bonds				
					200.00	200.00
		Total 54100 · Insurance				
					200.00	200.00
		54200 · Building Repairs/Maintenance				
Bill	12/09/2020	Inv 28084	Hartman ABC Pest Con...	Inv 28084	100.00	100.00
		Total 54200 · Building Repairs/Maintenance				
					100.00	100.00
		54300 · Janitorial Service				
Bill	12/29/2020	Dec2020	Andrea Matl	Dec 2020	300.00	300.00
		Total 54300 · Janitorial Service				
					300.00	300.00
		54400 · Janitorial Supplies				
Bill	12/09/2020		Card Service Center		79.05	79.05
		Total 54400 · Janitorial Supplies				
					79.05	79.05

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Accrual Basis

Type	Date	Num	Name	Memo	Amount	Balance
		54500 · Lawn Maintenance/Service				
Bill	12/29/2020	Inv 19160	Greeson Lawn Services...	Inv 19160	185.00	185.00
		Total 54500 · Lawn Maintenance/Service			185.00	185.00
		54600 · Security				
Bill	12/09/2020	Inv 104461	Progressive Protection	Inv 104461	29.95	29.95
		Total 54600 · Security			29.95	29.95
		Total 54000 · Facility Costs			894.00	894.00
		55000 · Utilities				
		55200 · Electricity				
Bill	12/29/2020	B2012163740	AmeriPower	B2012163740	126.76	126.76
		Total 55200 · Electricity			126.76	126.76
		55300 · Internet				
Bill	12/09/2020	Inv 0192419...	Spectrum	Inv 01924191...	149.99	149.99
		Total 55300 · Internet			149.99	149.99
		55400 · Phone				
Bill	12/09/2020	Inv 0192419...	Spectrum	Inv 01924191...	160.54	160.54
		Total 55400 · Phone			160.54	160.54
		55500 · Water/Garbage				
Bill	12/09/2020		City of Belton		202.27	202.27
Bill	12/29/2020		City of Belton		180.44	382.71
		Total 55500 · Water/Garbage			382.71	382.71
		Total 55000 · Utilities			820.00	820.00
		Total Expense			53,867.26	53,867.26
		Net Ordinary Income			-9,430.16	-9,430.16
		Net Income			-9,430.16	-9,430.16

Clearwater Underground Water Conservation A/P Aging Detail As of January 6, 2021

<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Due Date</u>	<u>Aging</u>	<u>Open Balance</u>
Current						
Total Current						
1 - 30						
Total 1 - 30						
31 - 60						
Total 31 - 60						
61 - 90						
Total 61 - 90						
> 90						
Total > 90						<hr/>
TOTAL						<hr/> <hr/>

Investment Fund - Item #8

TexPool Participant Services
 1001 Texas Avenue, Suite 4150
 Houston, TX 77022



Summary Statement

CLEARWATER UNDERGROUND WCD
ATTN DIRK AARON
PO BOX 1989
BELTON TX 76513-5989

Statement Period **12/01/2020 - 12/31/2020**
 Customer Service **1-866-TEX-POOL**
 Location ID **000079358**

GENERAL FUND - 07935800001

Pool Name	Beginning Balance	Total Deposit	Total Withdrawal	Total Interest	Current Balance	Average Balance
TexPool	\$492,250.26	\$127,000.00	-\$25,000.00	\$46.46	\$594,296.72	\$604,735.63
TexPool Prime	\$497,488.88	\$127,000.00	-\$25,000.00	\$73.80	\$599,562.68	\$610,781.58
Total Dollar Value	\$989,739.14	\$254,000.00	-\$50,000.00	\$120.26	\$1,193,859.40	

ACCOUNT TOTALS

Pool Name	Beginning Balance	Total Deposit	Total Withdrawal	Total Interest	Current Balance
TexPool	\$492,250.26 ✓	\$127,000.00 ✓	-\$25,000.00 ✓	\$46.46 ✓	\$594,296.72
TexPool Prime	\$497,488.88 ✓	\$127,000.00 ✓	-\$25,000.00 ✓	\$73.80 ✓	\$599,562.68
Total Dollar Value	\$989,739.14	\$254,000.00	-\$50,000.00	\$120.26	\$1,193,859.40

*1/6/2021
 JEC*

9:52 AM

01/06/21

Clearwater Underground Water Conservation
Reconciliation Summary
10505 · Cash - TexPool, Period Ending 12/31/2020

	<u>Dec 31, 20</u>
Beginning Balance	492,250.26
Cleared Transactions	
Checks and Payments - 1 item	-25,000.00
Deposits and Credits - 2 items	127,046.46
Total Cleared Transactions	<u>102,046.46</u>
Cleared Balance	<u>594,296.72</u>
Register Balance as of 12/31/2020	594,296.72
Ending Balance	594,296.72

9:52 AM

01/06/21

Clearwater Underground Water Conservation
Reconciliation Summary
10500 · Cash-TexPool Prime, Period Ending 12/31/2020

	<u>Dec 31, 20</u>
Beginning Balance	497,488.88
Cleared Transactions	
Checks and Payments - 1 item	-25,000.00
Deposits and Credits - 2 items	127,073.80
Total Cleared Transactions	<u>102,073.80</u>
Cleared Balance	<u>599,562.68</u>
Register Balance as of 12/31/2020	599,562.68
Ending Balance	599,562.68

Employee Retirement - Item #9

Plan Administration | Reporting

Plan Name:

CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT 457 PLAN

As of: 12/31/2020

[Participant Search](#)

[Summary with filters: 5/20](#)

[Print](#)

Plan ID: 613759000 Plan Type: 457

Summary | Calendar | Payroll | Participants | Loans | Withdrawals | Financials | Plan Information | Compliance

As of:

12/31/2020

Balances:

\$144,801.06

YTD Contributions:

\$19,536.00

Participants

5

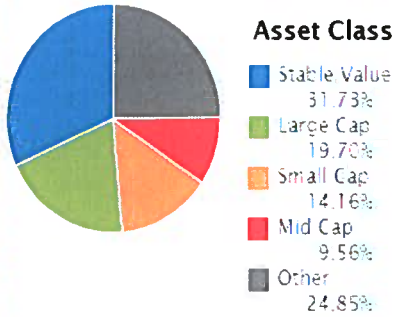
I want to

- [Process payroll contributions](#)
- [Review reports](#)
- [Manage my participants](#)
- [Review withdrawals](#)
- [Review loans](#)
- [Check financials](#)
- [Manage plan compliance](#)

Plan Assets

Participation In Plan

View: [Asset Class](#)



Total Balance:
\$144,801.06

Clearwater Underground Water Conservation
All Payments Issued for Security Benefit
January 28 through December 31, 2020

Type	Num	Date	Amount
Jan 28 - Dec 31, 20			
Liability Check	3743	01/28/2020	1,620.42
Liability Check	3772	02/27/2020	1,620.42
Liability Check	3785	03/18/2020	1,620.42
Liability Check	3837	04/28/2020	1,620.42
Liability Check	3858	05/28/2020	1,620.42
Liability Check	3874	06/26/2020	1,620.42
Liability Check	3917	08/03/2020	1,620.42
Liability Check	3943	08/21/2020	1,620.42
Liability Check	3980	09/28/2020	1,620.42
Liability Check	4019	10/27/2020	1,650.74
Liability Check	4042	11/20/2020	1,650.74
Liability Check	4058	12/29/2020	910.80
Liability Check	4059	12/29/2020	739.94
Jan 28 - Dec 31, 20			19,536.00

Election of Board Officers
Item #11

**Board Meeting
January 13, 2021**

**Agenda Item #11
District Officer Elections**

Agenda Item #11:

Discuss, consider and take appropriate action if necessary to elect Officers of the Board for calendar year 2021, per Texas Water Code § Chapter 36.054 and per District Bylaws, Article VI. (Sec.1 & Sec.2)

Narrative: The current board of directors should address the following offices necessary and pursuant with the following:

**CHAPTER 36 TEXAS GROUNDWATER CODE
SUBCHAPTER C.
ADMINISTRATION**

Sec. 36.054. OFFICERS

- (a) After a district is created and the directors have qualified, the board shall meet, elect a president, vice president, secretary, and any other officers or assistant officers as the board may deem necessary and begin the discharge of its duties.
- (b) After each directors' election, the board shall meet and elect officers.
- (c) The president is the chief executive officer of the district, presides at all meetings of the board, and shall execute all documents on behalf of the district. The vice president shall act as president in case of the absence or disability of the president. The secretary is responsible for seeing that all records and books of the district are properly kept and shall attest the president's signature on all documents.
- (d) The board may appoint another director, the general manager, or any employee as assistant or deputy secretary to assist the secretary, and any such person shall be entitled to certify as to the authenticity of any record of the district, including but not limited to all proceedings relating to bonds, contracts, or indebtedness of the district.
- (e) After any election or appointment of a director, a district shall notify the executive director within 30 days after the date of the election or appointment of the name and mailing address of the director chosen and the date that director's term of office expires. The executive director shall provide forms to the district for such purpose.

Added by Acts 1995, 74th Leg., Ch. 933, Sec. 2, eff. Sept. 1, 1995.

Staff Recommendation:

Five directors should, as in year's past, determine the following officer positions:

President: _____, Vice – President: _____
Secretary: _____, Assistant Secretary: _____

District Investment Policy
Item #12

Board Meeting
January 13, 2021

Agenda Items:
#12
Adopt Investment Policy

Agenda Items:

#12 Discuss, consider and take appropriate action necessary to review and adopt the District Investment Policy by Resolution for Calendar year 2021.

Narrative:

The attached investment policy and corresponding resolution provides direction, policy, and daily operation needs of the District per Chapter 36 "State Water Code" and the State of Texas Government Code per the Public Funds Investment Act.

Annual review and re-adoption is required per Public Funds Investment Act Government Code 2256. Sec 2256.005 Investment Policies; Investment Strategies: Investment officer. GC 2256.Sec.2256.005 (e) states:

The governing body of an investing entity shall review its investment policy and investment strategies not less than annually. The governing body shall adopt a written instrument by rule, order, ordinance, or resolution stating that it has reviewed the investment policy and investment strategies and that the written instrument so adopted shall record any changes made to either the investment policy or investment strategies.

The last time the board approved the current policy was January 8, 2020. Staff notes that the policy is to be reviewed and readopted annually. The current strategies in place are to participate in the TexPool Participant Services (TexPool & TexPool Prime) funds. Both funds meet the criteria for the following in:

GC Sec. 2256.005 (d) states:

As an integral part of an investment policy, the governing body shall adopt a separate written investment strategy for each of the funds or group of funds under its control. Each investment strategy must describe the investment objectives for the particular fund using the following priorities in order of importance:

- (1) Understanding of the suitability of the investment to the financial requirements of the entity;*
- (2) Preservation and safety of principal;*
- (3) Liquidity;*
- (4) Marketability of the investment if the need arises to liquidate the investment before maturity;*
- (5) Diversification of the investment portfolio; and*
- (6) Yield.*

Proposed Resolutions (see attached):

- 1) By resolution approve the attached Investment Fund Policy.
- 2) By resolution the following are described:
 - a. Investment officers are identified as the Board President and General Manager (GM)

- b. Investment officers currently engage investments in TexPool Participant Services (TexPool 449 and TexPool *Prime* 590 accounts).
- 3) Daily operations and internal controls are as follows:
- a. Investment Officer General Manager (GM) deposits and/or withdrawals monies (per *ACH) from each respective account as needed to meet obligations of the district. Goal is to maintain approximately 50-50% diversity between each investment fund.
 - b. Investment Officer GM reports status of each at regular monthly meeting of the Board of Directors.
 - c. Board President, Board Secretary and GM are signatories with *BancorpSouth* the district repository. (all checks require minimum two signatures)
 - d. Board President and GM are authorized to conduct transactions with TexPool Participant Services directly to the *BancorpSouth* account (deposits or withdrawals).
 - e. Previous Board Secretary was Authorized Representative designated to perform only inquiry of selected information. This limited representative cannot perform transactions.
 - f. District Administrative Manager (DAM) currently receives all billings from vendors, utilities and payroll services. Internal controls required (see attached) request for funds to be deposited by GM per itemized needs. DAM has no authority to sign checks and/or withdraw funds from any account.
 - g. DAM per attached resolution, has the expressed authority to setup direct payment to Scott & White Health plan for the efficiency and protection of said health insurance plans. This authority of the DAM is limited to monthly health premium payments for said staff health insurance.
 - h. District GM has complete oversight (must authorize prior too) of district credit card for district purchases for supplies, hotels, meals and online purchases as needed.
 - i. District GM has complete oversight of the District Fuel Card authorization and can only be used for the District Pickup Truck for general work in the county.

** Automated Clearing House ("ACH") Transfers. ACH transactions will be executed on the business day following the date the transaction was initiated. TexPool Prime must be notified by 2:00 p.m. (Central Time) for all ACH transfer activity one day prior to the actual settlement of the funds. ACH transfer withdrawals are sent in accordance with the prearranged information as provided on the Bank Information Sheet corresponding to that specific TexPool Prime account. In the event of an ACH rejection, TexPool will contact the Participant to confirm the rejection. TexPool Prime will credit/debit the Participant's account accordingly including any interest earned from the date of the ACH rejection.*

Staff Recommendation:

Board members are to review documents closely before adoption of the Districts Investment Policy designating TexPool Participant Services and designation of investment officers that:

- 1) By Resolution re-adopt the current Investment Fund Policy as presented naming the General Manager and the Board President as Investment Officers for Calendar Year 2021.

**RESOLUTION OF THE BOARD OF DIRECTORS OF THE
CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT
MEETING HELD JANUARY 13, 2021**

A RESOLUTION ADOPTING A DISTRICT INVESTMENT POLICY

WHEREAS, Clearwater Underground Water Conservation District (CUWCD) is a political subdivision of the State of Texas and underground water conservation district created and operating under and by virtue of Article XVI, Section 59, of the Texas Constitution; Texas Water Code Chapter 36; the District's enabling act, Act of May 27, 1989, 71st Legislature, Regular Session, Chapter 524 (House Bill 3172), as amended by Act of April 25, 2001, 77th Legislature, Regular Session, Chapter 22 (Senate Bill 404), Act of May 7, 2009, 81st Legislature, Regular Session, Chapter 64 (Senate Bill 1755), and Act of May 27, 2015, 84th Legislature, Regular Session, Chapter 1196, Section 2 (Senate Bill 1336)(omnibus districts bill); and the applicable general laws of the State of Texas; and confirmed by voters of Bell County on August 21, 1999; and

WHEREAS, the District is a governmental agency and a body politic and corporate;

WHEREAS, §36.061 of the Texas Water Code requires the District to adopt an Investment Policy;

WHEREAS, §2256.005(a) of the Texas Government Code mandates that the District adopt, in writing, an Investment Policy for the District and §2256.005(f) of the Texas Government Code provides that the District must designate one or more Investment Officers for the District;

WHEREAS, the Board of Directors of the District has determined that the attached Investment Policy is necessary and appropriate and shall replace all previous investment policies adopted by the District; and

WHEREAS, the Board of Directors of the District met in a public meeting, noticed properly in accordance with applicable law, and considered adoption of the attached Investment Policy and approval of this resolution.

NOW, THEREFORE, BE IT RESOLVED THAT:

The above recitals are true and correct;

The Board of Directors of the District hereby adopts the attached Investment Policy as a policy for the District;

The Board of Directors, its officers, and District employees are further authorized to take any and all actions necessary to implement this resolution;

The Investment Policy so adopted shall be effective from the date of adoption and continue in effect until modified by the Board of Directors;

The Board President and General Manager of the District are designated as the Investment Officers for the District;

Such Investment Officers are authorized to engage in investment transactions, deposit, withdraw, wire funds for investments, transfer and manage funds on behalf of the District; and

This resolution shall take effect immediately upon adoption.

AND IT IS SO ORDERED.

Upon motion duly made by Director _____ and seconded by Director _____, and upon discussion, the Board voted _____ in favor and _____ opposed, _____ abstained, and _____ absent, and the motion thereby _____, on this 13th day of January 2021.

CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT

By: _____
Leland Gersbach, Board President

ATTEST:

Gary Young, Board Secretary

CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT INVESTMENT POLICY

This Investment Policy (the "Policy") is adopted as of the 13th day of January 2021, by the Board of Directors of the Clearwater Underground Water Conservation District (the "District"), pursuant to Chapter 2256 of the Texas Government Code and Chapters 36 of the Texas Water Code.

ARTICLE I

PURPOSE

Section 1.01. Purpose.

This policy with respect to District investments has been adopted to establish the principles and criteria by which the District shall invest its public funds which will insure the safety and protection of these funds at all times while providing adequate liquidity for all District cash flow demands and maximizing the District's investment returns within the state and local statutes governing the investment of public funds as set forth in accordance with the provisions of the Public Funds Investment Act, Chapter 2256, Texas Government Code. This policy also will specify the scope of authority of District Officials who are responsible for the investment of District funds.

ARTICLE II

DEFINITIONS

Section 2.01. Definitions.

Unless the context requires otherwise, the following terms and phrases used in this Policy shall mean the following:

- (a) The term "Authorized Investment" shall mean any security which the District is authorized to invest under Chapter 2256, Texas Government Code.
- (b) The term "Board" shall mean the Board of Directors of the Clearwater Underground Water Conservation District.
- (c) The term "Collateral" shall mean those obligations or securities described in Section 6.02 Paragraph D provided by a bank or financial institution for amounts on deposit in excess of FDIC coverage to ensure the safety and security of the District's funds.
- (d) The term "Director" shall mean a person elected or appointed to serve on the Board of Directors of the District.

- (e) The term "District" shall mean the Clearwater Underground Water Conservation District, a political subdivision of the State of Texas, created under authority of Article XVI, Section 59 of the Texas Constitution and with Chapter 524, Acts of the 71st Legislature (1989), as amended, and Chapters 36 and 49 of the Texas Water Code.
- (f) The term "District Officials" shall mean the Investment Officer, District Directors, officers, employees, and persons and business entities handling investments for the District.
- (g) The term "Employee" shall mean any person employed by the District, but does not include independent contractors or professionals hired by the District as outside consultants.
- (h) The term "Investment Act" shall mean Chapter 2256, Texas Government Code, as amended from time to time.
- (i) The term "Investment Officer(s)" means the Director(s) or Employee(s) of the District appointed from time to time by the Board to invest and reinvest the funds of the District.

ARTICLE III

POLICY

Section 3.01. Policy of Investment.

A. The preservation of the District's principal shall be the primary concern of the District Officials who are responsible for the investment of District funds. To the extent that the principal is protected, District funds shall be invested to yield the highest possible rate of return, taking into consideration the strength of the financial institution and the ability of the financial institution to provide proper security with the provisions of all applicable legislation, this investment policy, and the desires of the District's Board of Directors. Applicable legislation includes, but is not limited to, Public Funds Investment Act, Chapter 2256, Texas Government Code, and any other applicable State or Federal laws or restrictions.

B. District funds shall be invested and reinvested by the District's Investment Officer only in specific allowable investments types as listed in Chapter 2256, Texas Government Code, and the District shall not invest in any investments not specifically allowed under that statute or deemed inappropriate by the District's Board of Directors.

Principal and accrued interest invested in Certificates of Deposit ("CDs") in accordance with this policy shall not exceed the FDIC, or its successor's, insurance limits or the Collateral pledged as security for the District's investments. It shall be acceptable for the District's Investment Officer to periodically receive interest on the CDs if needed to keep the amount of the funds under the insurance or collateral limits.

It shall be the responsibility of the District's Investment Officers to invest and reinvest the District funds in accordance with this policy to meet the needs and requirements of the District. The Board, by separate resolution, may provide that the Investment Officers may withdraw or transfer funds from and to accounts of the District on such terms as the Board considers advisable.

C. The District shall maintain separate written investment strategies for each of the funds under its control. These strategies shall describe the investment objectives for each fund or fund group. The strategies shall be updated, as required, to reflect any changes to the District's funds or business operations.

ARTICLE IV

INVESTMENT OFFICER AND INVESTMENT REPORTS

Section 4.01. Investment Officer.

The District's Board of Directors shall designate one or more officers or employees of the District to be responsible for the investment of its funds and be the Investment Officer. No person may deposit, withdraw, invest, transfer, or otherwise manage funds of the District without this express authority. Investment Officers(s) shall be responsible for the investment of District funds, consistent with the investment policy adopted by the District. An Investment Officer's authority is effective until rescinded by the Board of Directors or until termination of employment by the District. Designated Board Members and Investment Officer(s) shall comply with all continuing training requirements including those established by Section 2256.008 of the Texas Government Code.

Section 4.02. Reporting by the Investment Officer.

Not less than quarterly and within a reasonable time after the end of the period reported, the Investment Officer(s) shall prepare and submit to the Board a written report of the investment transactions for all funds of the District for the preceding reporting period. The report must:

1. Describe in detail the investment position of the District on the date of the report;
2. Be prepared jointly by all the Investment Officers of the District, if the District appoints more than one;
3. Be signed by all Investment Officers and District Officials who prepare the report;
4. State the book value and the market value of each separately invested asset at the beginning and end of the reporting period by the type of asset and fund type invested;
5. State the maturity date of each separately invested asset that has a maturity date;

6. State the District fund for which each individual investment was acquired; and
7. State the compliance of the investment portfolio as it relates to this Policy and the Investment Act.

Section 4.03. Assistance with Certain Duties of the Investment Officer.

The Board hereby authorizes and directs the District's bookkeeper, known as District's Administrative Manager (DMA) and any other District Officials requested by the Investment Officer to assist the Investment Officer(s) with any of his duties, including but not limited to the following:

1. Presenting a copy of the Policy to any person or business organization seeking to sell an investment to the District and obtaining the necessary written certification from such seller referred to in this section;
2. Documenting investment transactions;
3. Preparing and submitting to the Board the written report of all investment transactions for the District as required by this section;
4. Researching investment options and opportunities;
5. Obtaining written depository pledge agreements as required herein;
6. Obtaining safe-keeping receipts from the Texas financial institution which serves as a depository for pledged Collateral; and
7. Reviewing the market value of the District's investments and of the Collateral pledged to secure the District's funds.

ARTICLE V

PROCEDURES FOR INVESTMENT OF DISTRICT MONIES

Section 5.01. Qualified Broker / Dealers / Texas Local Governmental Pools

The District shall limit engaging in investment transactions other than with the Texas Local Government Investment Pool (exhibit A: "TexPool 449/TexPool *Prime* 590"), public funds investment pools, created on behalf of entities whose investment objective in order of priority are preservation and safety of principal, liquidity, and yield consistent with the Public Funds Investment Act. The Board shall annually review and determine if such Investment Pool strategy will continue.

Section 5.02. Disclosures of Relationships with Entities Offering to Enter into Investment Transactions with the District.

The Investment Officer(s) and the District Officials shall disclose in writing (a) any "personal business relationship" with a business organization offering to engage in an investment transaction with the District and (b) any relationship within the second degree by affinity or consanguinity, as determined by Chapter 573, Texas Government Code, to any individual seeking to sell an investment to the District, as required by the Investment Act. Such disclosure statement shall be filed with the Board and the Texas Ethics Commission.

Section 5.03. Certifications from Sellers of Investments.

The District shall make its Investment Policy available to any securities firm seeking to do business with the District. The qualified representative of the securities firm, after reviewing the policy, shall provide the District with a written instrument stating that "the business organization has reviewed the investment policy of the District and acknowledges that the business organization has implemented reasonable procedures and controls in an effort to preclude investment transactions conducted between the District and the organization that are not authorized by the District's Investment Policy, except to the extent that this authorization is dependent on analysis of the makeup of the District's entire portfolio or requires an interpretation of subjective investment standards..." before the District may obtain any authorized investment from the securities firm. Neither the Investment Officer nor the District Officials shall purchase or make any investment from a potential seller that has not delivered to the District this written instrument. A form of certificate acceptable to the District is attached hereto as Exhibit "B".

Section 5.04. Solicitation of Bids for Certificates of Deposit.

Bids for certificates of deposit may be solicited orally, in writing, electronically, or in any combination of those methods.

Section 5.05. Settlement Basis.

All purchases on investments, except investment in investment pools or in mutual funds, shall be made on a delivery versus payment basis. The safekeeping entity for all District investments and for all Collateral pledged to secure District funds shall be one approved by the Investment Officer(s).

Section 5.06. Monitoring of the Market Value of Investments and Collateral.

A. If other strategies are approved, the Investment Officer(s), with the help of such District Officials as needed, shall determine the market value of each investment and of all Collateral pledged to secure deposits of District funds at least quarterly and at a time as close as practicable to the closing of the reporting period for investment. Such values shall be included on the investment report. The following methods shall be used:

- (a) Certificates of deposit shall be valued at their face value plus any accrued but unpaid interest.
- (b) Shares in investment pools shall be valued at par plus any accrued but unpaid interest.

- (c) Other investment securities with a remaining maturity of one year or less may be valued in any of the following ways:
 - (1) the lower of two bids obtained from securities broker/dealers for such security;
 - (2) the average of the bid and asked prices for such investment security as published in The Wall Street Journal or The New York Times;
 - (3) the bid price published by any nationally recognized security pricing service; or
 - (4) the market value quoted by the seller of the security or the owner of such Collateral.
- (d) Other investment securities with a remaining maturity greater than one year shall be valued at the lower of two bids obtained from securities broker/dealers for such security, unless two bids are not available, in which case the securities may be valued in any manner provided in 5.06(c) hereof.

B. The Investment Officer shall also monitor, on no less than a quarterly basis, the credit rating on all authorized investments in the portfolio based upon independent information from a nationally recognized rating agency. If any security falls below the minimum rating required by this Policy, the Investment Officer shall notify the Board of the loss of rating, conditions affecting the rating, and possible loss of principal with liquidation options available, within two weeks after the loss of the required rating.

ARTICLE VI

PROVISIONS APPLICABLE TO ALL FUNDS

Section 6.01. Provisions Applicable to All Fund Groups.

A. All Funds of the District shall be invested only in accordance with this Policy and shall comply with any additional requirements imposed by Bond Resolutions of the District and applicable state law or federal tax law, including the Investment Laws.

Section 6.02. Policy of Securing Deposits of District Funds — Applicable to All Deposited District Funds.

A. The District recognizes that FDIC (or its successor) insurance is available for District funds deposited at any one Texas Financial Institution (exhibit B: BancorpSouth) only up to a minimum of \$250,000 (including accrued interest) for each of the following: (i) demand deposits, (ii) time and savings deposits, and (iii) deposits made pursuant to an indenture or pursuant to law in order to pay bondholders or noteholders. It is the policy of the District that all deposited funds in the District's General account shall be insured by the FDIC, or its successor, and to the extent not insured, shall be secured by Collateral pledged to the extent of the fair market value of the principal amount deposited plus accrued interest.

B. If it is necessary for the District's depositories to pledge Collateral to secure the District's deposits, (1) the Collateral pledge agreement must be in writing, (2) the Collateral

pledge agreement must be approved by the depository's board of directors or loan committee, (3) the depository's approval of the Collateral pledge agreement must be reflected in the minutes of the meeting of the depository's board or loan committee approving the same, and (4) the Collateral pledge agreement must be kept in the official records of the depository. The depository must provide to the Investment Officer or District Officials written proof of the depository's approval of the pledge agreement as required herein in a form acceptable to the District. A signed or certified copy of the minutes of the meeting of the depository's board or loan committee reflecting the approval of the Collateral pledge agreement or other written documentation of such approval acceptable to the Investment Officer will be accepted. It is the preference of the Board that all requirements of this section be met prior to the deposit of any District funds in such financial institution when a pledge of Collateral is required; however, the Board recognizes that compliance with this preference might not be practicable due to time constraints for making a deposit. In such event, the Board directs the Investment Officer and District Officials to proceed diligently to have such agreement approved and documented to assure protection of the District's funds. If the decision is made to forego the protection of a collateral pledge agreement with any depository, the District bookkeeper shall be responsible for maintaining the balance of deposit(s) in such depository plus any accrued but unpaid interest at or below FDIC insurance levels.

C. Collateral pledged by a depository shall be held in safekeeping at an independent third party institution, and the District bookkeeper shall obtain safe-keeping receipts from the Texas financial institution or the safekeeping institution that reflect that Collateral as allowed by this investment Policy and in the amount required was pledged to the District. Principal and accrued interest on deposits in a financial institution shall not exceed the FDIC's, or its successor's, insurance limits or the market value of the Collateral pledged as security for the District's deposits. It shall be acceptable for the bookkeeper to periodically receive interest on deposits to be deposited to the credit of the District if needed to keep the amount of the funds under the insurance or collateral limits. It is the preference of this Board that there be no sharing, splitting or cotenancy of Collateral with other secured parties or entities; however, in the event that a depository cannot accommodate this preference due to the denominations of the securities to be pledged, the Board directs the Investment Officer and District Officials to obtain appropriate protections in the pledge agreement with the depository to assure that the Collateral is liquidated and the funds distributed appropriately to all parties with a security interest in such Collateral. The District bookkeeper shall monitor the pledged Collateral to assure that it is pledged only to the District, review the fair market value of the Collateral to ensure that the District's funds are fully secured, and report periodically to the Investment Officer and the Board regarding the Collateral.

D. The District's funds deposited in any Texas financial institution, to the extent that they are not insured, may be secured in any manner authorized by law for the District as such law is currently written or as amended in the future. As of the date of this Agreement, the following are the securities in which a public entity may invest under the Investment Act and, therefore, may be used as Collateral:

1. Obligations of the U.S. or its agencies and instrumentalities;
2. Direct obligations of the State of Texas or its agencies and instrumentalities;
3. Collateralized mortgage obligations directly issued by a federal agency or

instrumentality of the U.S., the underlying security for which is guaranteed by an agency or instrumentality of the U.S.;

4. Other obligations, the principal and interest of which are unconditionally guaranteed or insured by or backed by the full faith and credit of the U.S. or the State of Texas or their respective agencies and instrumentalities;
5. Obligations of states, agencies, counties, cities, and other political subdivisions of any state rated as to investment quality by a nationally recognized investment rating firm not less than A or its equivalent.
6. Certificates of deposit issued by a state or national bank domiciled in this State or a savings bank domiciled in this State or a state or federal credit union domiciled in this State that are guaranteed by the Federal Deposit Insurance Corporation or the National Credit Union Share Insurance Fund or its successor that are secured by the obligations in which the District may invest under the Investment Act.
7. Repurchase agreements that comply with the Investment Act;
8. Bankers' acceptances that comply with the Investment Act;
9. Commercial paper that comply with the Investment Act;
10. No-load money market mutual funds that comply with the Investment Act; and
11. No-load mutual funds that comply with the Investment Act.

Notwithstanding anything to the contrary provided above, the following may not be used as Collateral and are not authorized as investments for the District under the Investment Act:

- a. Obligations whose payment represents the coupon payments on the outstanding principal balance of the underlying mortgage-backed security collateral and pays no principal;
- b. Obligations whose payment represents the principal stream of cash flow from the underlying mortgage-backed security collateral and bears no interest;
- c. Collateralized mortgage obligations that have a final stated maturity date of greater than 10 years; or
- d. Collateralized mortgage obligations the interest rate of which is determined by an index that adjusts opposite to the changes in a market index.

Section 6.03. Diversification.

The Investment Officer may invest up to 60% of the funds of the District in any investment instrument authorized in this Policy. (TexPool 449 or TexPool Prime 590)

ARTICLE VII
AUTHORIZED INVESTMENTS

Section 7.01. Authorized Investments.

Unless specifically prohibited by law or elsewhere by this Policy, District monies in any of its fund groups may be invested and reinvested only in the following types of Investments:

1. Obligations of the U.S. or its agencies and instrumentalities;
2. Certificates of deposit issued by a state or national bank domiciled in Texas, or a savings bank domiciled in Texas, or a state or federal credit union domiciled in Texas that is guaranteed or insured by the Federal Deposit Insurance Fund or the National Credit Union Share Insurance Corporation or its successor; and secured by the obligations that are authorized under the Investment Act which have a market value at least equal to the deposit and are pledged to the District only and held by a third-party custodian; and
3. Local government investment pools, which 1) meet the requirements of Chapter 2256.016 of the Public Funds Investment Act, 2) are rated no lower than AAA or an equivalent rating by at least one nationally recognized rating service, 3) seek to maintain a \$1.00 net asset value, and 4) are authorized by resolution or ordinance by the Board.

Section 7.02. Prohibited Investments.

Notwithstanding anything to the contrary stated herein, no funds of the District may be invested in the following or in any other type of investment prohibited by the Investment Act or other applicable law:

1. Obligations whose payment represents the coupon payments on the outstanding principal balance of the underlying mortgage-backed security collateral and pays no principal (JO's);
2. Obligations whose payment represents the principal stream of cash flow from the underlying mortgage-backed security collateral and bears no interest (PO's);
3. Collateralized mortgage obligations that have a stated final maturity date of greater than 10 years; and
4. Collateralized mortgage obligations the interest rate of which is determined by an index that adjusts opposite to the changes in a market index (inverse floaters).

ARTICLE VIII
INVESTMENT STRATEGIES

Section 8.01. Strategies.

It is assumed that all District Funds have the following investment objectives in common and that these objectives will have priority over any additional investment objective identified for the individual funds per Public Funds Investment Act Government Code 2256. Sec 2256.005 Investment Policies; Investment Strategies: Investment officer.

Government Code 2256. Sec. 2256.005 (e) states:

The governing body of an investing entity shall review its investment policy and investment strategies not less than annually. The governing body shall adopt a written instrument by rule, order, ordinance, or resolution stating that it has reviewed the investment policy and investment strategies and that the written instrument so adopted shall record any changes made to either the investment policy or investment strategies.:

1. Understanding of the suitability of the investment to the financial requirements of the District;
2. Preservation and safety of principal;
3. Liquidity;
4. Marketability of the investment if the need arises to liquidate the investment before maturity;
5. Diversification of the investment portfolio; and
6. Yield.

Section 8.02. Fund Strategies.

Funds in the following District accounts shall be invested by the District's Investment Officer as follows:

1. Operating or General Account: Funds in this account shall be invested to meet the operating requirements of the District as determined by the annual operating budget prepared by the bookkeeper and adopted by the Board. This fund accounts for the general administrative, governmental, and operations functions of the District. Funds available in the Operating or General Fund are used to pay the ongoing operational expenditures during the fiscal year. Operating or General Funds shall not be invested for longer than thirteen (13) months.

2. Debt Service Account: Funds in this account, if needed, shall be invested to meet the debt service requirements of the District and to comply with the District's bond resolutions or orders. It shall be the policy of the District that Debt Service Funds shall not be invested for longer than thirteen (13) months.

ARTICLE IX
MISCELLANEOUS

Section 9.01. Miscellaneous.

A. **Checks/Drafts:** All checks, drafts, notes, or other orders for the payment of money issued in the name of the District shall be signed by no less than two officers or employees of the District as shall from time to time be authorized by resolution of the Board. (signatories are to be District Board President, District Board Secretary and District General Manager).

B. **Depositories:** All funds of the District except petty cash shall be deposited from time to time to the credit of the District in such banks or accounts as the Board may, from time to time, designate, and upon such terms and conditions as shall be fixed by the Board. The Board may, from time to time, authorize the opening and maintaining of general and special accounts within any such depository as it may designate, and may make such special rules and regulations with respect thereto as it may deem expedient.

Section 9.02. Annual Review.

The District shall review this Investment Policy at least annually and adopt a resolution confirming the continuance of the Investment Policy without amendment or adopt an Amended Investment Policy.

Section 9.03. Superseding Clause.

This Policy supersedes any prior policies adopted by the Board of Directors regarding investment or securitization of District Funds.

Section 9.04. Open Meeting.

The Board officially finds, determines, and declares that this Investment Policy was reviewed, carefully considered, and adopted at a regular meeting of the Board, and that a sufficient written notice of the date, hour, place, and subject of this meeting was posted at a place convenient to the public for the time required by law preceding this meeting, as required by the Open Meetings Act, Chapter 551, Texas Government Code, and that this meeting had been open to the public as required by law at all times during which this Policy was discussed, considered and acted upon. The Board further ratifies, approves, and confirms such written notice and the contents and posting thereof.

Exhibit A

Texas Local Governmental Investment Pool

TexPool 449 Investment Policy

TexPool Prime 590 Investment Policy



TexPool Information Statement

Texas Local Government
Investment Pool

December 2020

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No person or entity has been authorized to give any information, or to make any representations other than those contained in this Information Statement, and, if given or made, such other information or representations must not be relied upon as having been authorized by the Texas Treasury Safekeeping Trust Company, the Texas Comptroller of Public Accounts, or Federated Hermes, Inc. The attachments included herein are part of this Information Statement. The information contained in this document is subject to change without notice.

If you have any questions regarding this material, please contact:

TexPool Participant Services
Attn: Office Manager
1001 Texas Avenue, Suite 1150
Houston, Texas 77002

1-866-839-7665 (1-866-TEXPOOL)

I. Organization and Structure

The Texas Local Government Investment Pools (the “TexPool Portfolios”) have been organized in conformity with the Interlocal Cooperation Act, Chapter 791 of the Texas Government Code, and the Public Funds Investment Act, Chapter 2256 of the Texas Government Code. These two acts provide for the creation of public funds investment pools and permit eligible governmental entities to jointly invest their funds in authorized investments.

The Comptroller of Public Accounts (the “Comptroller”) is the sole officer, director and shareholder of the Texas Treasury Safekeeping Trust Company (the “Trust Company”), which is authorized to operate the TexPool Portfolios. Pursuant to the TexPool Participation Agreement, administrative and investment services to the TexPool Portfolios are provided by Federated Hermes, Inc. (“Federated”), under an agreement with the Comptroller, acting on behalf of the Trust Company. The TexPool Portfolios are comprised of two investment alternatives: TexPool and TexPool Prime. This Information Statement relates only to TexPool. TexPool may invest in obligations of the United States Government or its agencies and instrumentalities, repurchase agreements and certain mutual funds.

The Comptroller maintains oversight of the services provided to the TexPool Portfolios by Federated. In addition, the TexPool Advisory Board advises on the Investment Policies for the TexPool Portfolios and approves any fee increases. As required by the Public Funds Investment Act, the Advisory Board is composed equally of participants in the TexPool Portfolios and other persons who do not have a business relationship with the TexPool Portfolios who are qualified to advise the TexPool Portfolios.

II. Public Funds Investment Act Disclosure Items

The Public Funds Investment Act requires investment pools to provide an information statement to the investment officer or other authorized representative of an investing entity. This section provides the specific information items required by Section 2256.016 of the Public Funds Investment Act as it relates to an investment in TexPool.

1. Types of Investments Authorized for TexPool. The investment policies and composition guidelines for TexPool are summarized below. Although the Public Funds Investment Act permits investment in a variety of investment types, the TexPool Investment Policy restricts investment to the following investments:

Authorized Investments:

- A. Obligations of the United States Government or its agencies and instrumentalities with a maximum final maturity of 397 days for fixed rate securities.
- B. Fully collateralized repurchase agreements or reverse repurchase agreements (i) with defined termination dates, (ii) secured by obligations of the United States, its agencies or its instrumentalities, including mortgage-backed securities, (iii) that require purchased securities to be pledged to the investing entity or a third party, and (iv) that are placed through primary government securities dealers or a financial institution doing business in the State of Texas.

The term of a reverse repurchase agreement may not exceed 90 days after the date of delivery. Money received under a reverse repurchase agreement may be used to acquire additional authorized investments provided such investments mature not later than the expiration date stated in the reverse repurchase agreement.

- C. No-load money market mutual funds that (i) are registered with and regulated by the Securities and Exchange Commission, (ii) provide a prospectus and other information required by the Securities Exchange Act of 1934 or the Investment Company Act of 1940, (iii) comply with federal Securities and Exchange Commission rule 2a-7, as promulgated under the Investment Company Act of 1940, (iv) are a permissible investment, and (v) includes in its investment objectives the maintenance of a stable net asset value of \$1.00 for each share. The money market mutual fund must be rated AAA or its equivalent by at least one NRSRO.
- D. Securities lending programs that comply with various limitations.

Prohibited Investments:

- A. TexPool *will not* invest in derivatives. The definition of derivatives includes instruments which have embedded features that alter their character or income stream or allow holders to hedge or speculate on a market or spreads between markets that are external to the issuer or are not correlated on a one-on-one basis to the associated index or market.
- B. TexPool *will not* invest in commercial paper or certificates of deposit.

Diversification Guidelines:

Specific portfolio diversification limitations govern the TexPool portfolio:

- A. 100% of the portfolio may be invested in obligations of the United States.
 - B. 100% of the portfolio may be invested in direct repurchase agreements.
 - C. Reverse repurchase agreements may be used within a limitation of up to one-third (1/3) of total portfolio assets.
 - D. No more than 10% of the portfolio may be invested in approved money market mutual funds.
2. Maximum Average Dollar-Weighted Maturity. The portfolio should maintain a weighted average maturity of 60 days or less.
 3. Maximum Stated Maturity Date. The maximum remaining maturity of any security or other investment acquired for the portfolio shall be 397 calendar days or less.
 4. Objectives of TexPool. The primary objectives of TexPool are preservation and safety of principal; liquidity; and yield. There is no sales charge and no investment minimum. TexPool

will invest only in investments that are authorized under both the Public Funds Investment Act and the TexPool Investment Policy. See Item 1 of this section for a description of authorized TexPool investments.

5. **Size of the Pool.** The current size of TexPool is provided in TexPool's monthly newsletter to Participants or by calling TexPool Participant Services at 1-866-839-7665. A copy of the most recent newsletter, which contains the historical average monthly balance, should be obtained in connection with this Information Statement.
6. **TexPool Advisory Board.** Section 2256.016(g)(1) of the Public Funds Investment Act requires TexPool to establish and maintain an advisory board composed equally of participants in the TexPool Portfolios and other persons who do not have a business relationship with the TexPool Portfolios. The TexPool Advisory Board advises on TexPool's Investment Policy and approves any fee increases. The TexPool Advisory Board members serve at the will of the Comptroller. A current list of the TexPool Advisory Board members is included in the TexPool newsletter, which is mailed monthly to each participant and is also posted on the TexPool website, www.texpool.com, under the Newsletter link.
7. **Custodian for TexPool.** State Street Bank serves as custodian to TexPool.
8. **Net Asset Value.** TexPool seeks to maintain a net asset value of \$1.00 and is designed to be used for investment of funds which may be needed at any time.
9. **Source of Payment.** The only source of payment to Participants is the assets of TexPool. There is no secondary source of payment for TexPool, such as insurance or guarantees.
10. **Independent Auditor.** TexPool is subject to annual review by an independent auditor consistent with the Public Funds Investment Act. RSM US LLP, 811 Barton Springs Road Suite 500, Austin, Texas 78704, performed TexPool audits for each year beginning with the accounting periods September 1, 2015 through August 31, 2020. Beginning in the audit period September 1, 2012 through each twelve-month period ending August 31, 2015, Padgett Stratemann & Co., LLP, 811 Barton Springs Road, Suite 550, Austin, Texas 78704 performed auditing services. In addition, TexPool is subject to review by the State Auditor's Office and by the internal auditors of the Trust Company and Comptroller's Office.
11. **Operating Procedures.** Deposits and withdrawals may be made by wire transfer or automated clearinghouse (ACH) transfer according to established operating procedures. The requirements for TexPool deposits and withdrawals, deadlines, and other operating procedures are summarized under the section entitled "Summary of Operating Procedures" later in this Information Statement.
12. **Performance History.** The performance history, including yield, weighted average maturity, expense ratios and average balance is provided on a monthly basis on the TexPool

website, www.texpool.com, under the Rate Information link and in the monthly TexPool newsletter which is mailed to each participant and posted on the website under the Newsletters link.

III. Understanding the Risks Associated with Investing in TexPool

Before making an investment decision, each participant should consider two types of risks in determining whether any investment, including TexPool, is appropriate: credit risk and market risk.

Credit Risk. Credit risk is the possibility that an issuer will default on a security by failing to pay interest or principal when due. If an issuer defaults, TexPool will lose money. TexPool tries to minimize this risk by purchasing high quality securities.

Many fixed income securities receive credit ratings from NRSROs such as Standard & Poor's and Moody's Investors Service. These NRSROs assign ratings to securities by assessing the likelihood of issuer default. Lower credit ratings correspond to higher perceived credit risk and higher credit ratings correspond to lower perceived credit risk.

Credit risk includes the possibility that a party to a transaction involving TexPool will fail to meet its obligations. This could cause TexPool to lose the benefit of the transaction or prevent the Fund from selling or buying other securities to implement its investment strategy.

Market Risk. Prices of fixed income securities rise and fall in response to changes in the interest rate paid by similar securities. Generally, when interest rates rise, prices of fixed income securities fall. However, market factors, such as demand for fixed income securities, may cause the price of certain fixed income securities to fall while the prices of other securities rise or remain unchanged.

Interest rate changes have a greater effect on the price of fixed income securities with longer maturities. TexPool tries to minimize this risk by purchasing short-term securities and maintaining a weighted average portfolio maturity of sixty (60) days or less.

IV. Administration of TexPool

By executing the Participation Agreement, the Participant has delegated the authority to the Comptroller, or the comptroller's designee, to hold legal title as custodian and to make investments purchased with the Participant's funds deposited in TexPool. The Participation Agreement permits the Trust Company to enter into an agreement with a third party investment manager to perform its obligations and services under the Participation Agreement with provision that TexPool be managed according to the requirements of the Public Funds Investment Act, the TexPool Investment Policy, and in a manner consistent with that directed by the Trust Company.

The Trust Company has signed an agreement with Federated to provide required services to the TexPool Portfolios. The agreement terminates December 31, 2024. The Trust Company has the right, in its sole discretion, to renew the agreement for one additional two-year period to December 31, 2026, and to extend the renewal period for six (6) months to June 30, 2026.

The Comptroller maintains control of TexPool through a series of daily, weekly, and monthly reporting requirements. Federated serves as investment manager and provides portfolio accounting, custodial, transfer agency, marketing and participant services to TexPool.

- **Investment Management.** The Comptroller will provide Federated, TexPool's Investment Manager, with a list of primary dealers and brokers authorized to provide investment services. All dealers and brokers who desire to become qualified bidders for investment transactions must supply to the Trust Company a completed broker/dealer questionnaire, proof of registration with the Texas State Securities Board, proof of National Association of Securities Dealers (NASD) certification, audited financial statements, and written acknowledgment that the entity has read the TexPool Investment Policy and has reasonable procedures and controls to preclude imprudent investment activities arising out of investment transactions conducted between the entity and TexPool. Federated will review the financial condition of brokers and dealers with whom it executes investment transactions.
- **Ratings.** To comply with Section 2256.016(h) of the Public Funds Investment Act, TexPool will maintain a AAA or equivalent rating from at least one NRSRO.

TexPool is currently rated AAAM by Standard and Poor's. An explanation of the significance of such rating may be obtained from Standard & Poor's at 1221 Avenue of the Americas, New York, New York 10020.

- **Calculation of Yields and Net Asset Value.** Each day, TexPool determines the net interest income for that day. The net interest income is determined by adjusting TexPool's accrued interest for that day by the amortization of any premiums and/or the accretion of any discounts, daily service fee, and any gains or losses from the sale of securities. TexPool's daily interest rate will be determined by dividing the net interest income for that day by the total investable balance of TexPool for that day. The resulting rate will then be used to determine the amount of interest income to distribute to each Participant's account. Interest income accrued during the month is credited to each Participant's account at the end of the month and is reinvested unless the Participant provides for its withdrawal or transfer.
- **Valuation of TexPool Assets.** All investments are stated at amortized cost, which in most cases approximates the market value of the securities. The objective of TexPool is to maintain

a stable \$1.00 net asset value; however, the \$1.00 net asset value is not guaranteed or insured by the State of Texas. All TexPool securities will be marked to market daily. If the ratio of the market value of TexPool's portfolio securities divided by the book value of such securities is less than 0.995 or greater than 1.005, TexPool will sell portfolio securities, as required, to maintain the ratio between 0.995 and 1.005. All gains or losses from the sale of securities will be distributed among TexPool Participants over a period of up to thirty (30) days from the date of which the gain or loss is realized.

- **Ethics and Conflicts of Interest.** The Comptroller requires Federated and its staff that are involved with making investment decisions for or executing trades on behalf of TexPool to disclose any personal or business relationship with a broker/dealer seeking to sell investments to TexPool. These employees are also required to refrain from personal business activity that could conflict with the proper execution and management of the investment program or that could impair their ability to make impartial decisions. Federated's Compliance Officer is required to file a quarterly statement with the Trust Company evidencing compliance with foregoing matters by Federated and its employees.
- **Fees and Expenses.** The TexPool service fee is 4.5 basis points annually, calculated daily on the TexPool balance. The TexPool fee is deducted from the gross interest earned. There is no direct reduction to the Participant's account; thus, only the net income is credited to the Participant's account. All TexPool rates are quoted net of fees. There are no hidden costs or additional reductions to Participants' accounts. Under the current contract with Federated, the fee may not be raised for the duration of the contract. The contract's initial term ends December 31, 2024, and it is renewable for an additional two years to December 31, 2026 which may be extended to June 30, 2026 in the sole discretion of the Trust Company.
- **Liability.** Any liability of the Comptroller, the Comptroller's Office, the Trust Company, representatives or agents or the Trust Company, any Comptroller or Trust Company employee, or any member of the Board for any loss, damage or claim, including losses from investments and transfers, to the Participant shall be limited to the full extent allowed by applicable laws. The Trust Company's responsibilities under the Participation Agreement are limited to the management and investment of TexPool and the providing of reports and information required.

V. Participating in TexPool

Participation in TexPool is limited to those eligible governmental entities that have executed a Participation Agreement with the Comptroller. Participants' assets in TexPool are represented by units. Assets in TexPool will be invested in accordance with such investment objectives, limitations, and other policies established by the Comptroller. The TexPool Investment Policy is summarized in the Information Statement. A complete copy of the Investment Policy may be obtained from TexPool Participant Services.

- **Eligibility to Invest.** Each governing body of a local government or a state agency subject to the Public Funds Investment Act may approve by resolution execution of a Participation Agreement, consistent with the provisions of the entity's approved investment policy.
- **Establishment of Accounts.** To open an initial TexPool account, the Participant must execute the Participation Agreement and provide a Resolution authorizing participation in TexPool and follow the procedures for designating "Authorized Participant Representatives" on TexPool Portfolios. Designated Authorized Participant Representatives are authorized to transfer funds for investment in the TexPool Portfolios and are further authorized to withdraw funds from time to time, to issue letters of instructions, and take all other actions deemed necessary or appropriate for the investment of local funds. A Participant must also provide a separate Bank Information Sheet for each account signed by two Authorized Participant Representatives. The Operating Procedures describe in detail the procedures required for the establishment of accounts, deposits to and withdrawals from TexPool, and related information. A copy of the Operating Procedures may be obtained from TexPool Participant Services or through the TexPool website @ www.texpool.com
- **Amendments.** The Trust Company shall advise the Participant in writing of any amendments to the Participation Agreement no less than 45 days prior to the effective date of such amendment. The Participant may ratify the proposed amendment of the Agreement by letter to the Trust Company. In the event the Participant elects not to ratify the amendment, the Participant may terminate the Agreement in accordance with the applicable Agreement provision. In the event the Participant fails to respond in writing to a notice of amendment prior to the effective date of such amendment, the Agreement shall be deemed amended.

The Operating Procedures may be periodically revised from time to time as necessary for the efficient operation of TexPool. Transactions subsequent to the effective date of a revision in Operating Procedures should be conducted according to the revised procedure.

VI. Summary of Operating Procedures

Deposits and withdrawals to TexPool may be made by wire transfer or automated clearinghouse (ACH) transfer according to established operating procedures. Excerpts from the current operating procedures are provided below.

- **Wire Transfers.** Wire transfer transactions will be executed on the same day as initiated. TexPool Participant Services must be notified by 4:00 p.m. (Central Time) for all wire transfer activity. Outgoing wire transfers from TexPool will be sent through the FED by the close of business (5:00 p.m. Central Time). Wire transfer deposits will not be accepted into TexPool after the trade cutoff.
- **Automated Clearing House (“ACH”) Transfers.** ACH transactions will be executed on the business day following the date the transaction was initiated. TexPool must be notified by 3:30 p.m. (Central Time) for all ACH transfer activity one day prior to the actual settlement of the funds. ACH transfer withdrawals are sent in accordance with the prearranged information as provided on the Bank Information Sheet corresponding to that specific TexPool account. In the event of an ACH rejection, TexPool will contact the Participant to confirm the rejection. TexPool will credit/debit the Participant’s account accordingly including any interest earned from the date of the ACH rejection.
- **Methods of Notification to TexPool of wire transfer or ACH activity:**
 - a. TexConnect Online;
 - b. Verbal notification (on a recorded phone line) to a TexPool Participant Services representative. Participant’s TexConnect PIN number must be provided at the point of call. A confirmation for each transaction is generated daily and mailed to the Participant the following business day, provided it is not a bank holiday.
- **Reports.** Participants will be mailed a monthly statement within the first five (5) business days of the succeeding month. The monthly statement will include a detailed listing of the balance in the Participant’s accounts as of the date of the statement; all account activity, including deposits and withdrawals; and any special fees and expenses charged. Additionally, copies of the Participant’s reports in physical or electronic form will be maintained for a minimum of three prior fiscal years. A complete copy of the TexPool Operating Procedures may be obtained by contacting TexPool Participant Services or through the TexPool website @ www.texpool.com.



TexPool Investment Policy

Texas Local Government
Investment Pool

Revised August 2020

I. PURPOSE AND OBJECTIVES STATEMENT

A. TEXPOOL

The Interlocal Cooperation Act, chapter 791 of the Texas Government Code, and the Public Funds Investment Act, chapter 2256 of the Texas Government Code (the “Act”), provide for the creation of public funds investment pools through which political subdivisions and other entities may invest public funds.

TexPool will use amortized cost to value portfolio assets and follow the criteria established by Governmental Accounting Standards Board (“GASB”) Statement No. 79 for use of amortized cost. This Investment Policy shall be interpreted and applied in a manner consistent with GASB guidance on external investment pools that use amortized cost to value all portfolio assets.

Pursuant to subchapter G of chapter 404, the Comptroller of Public Accounts (the “Comptroller”) administers the Texas Local Government Investment Pools (the “TexPool Portfolios”) as public funds investment pools through the Texas Treasury Safekeeping Trust Company (the “Trust Company”). The Trust Company is a special-purpose trust company authorized to receive, transfer, and disburse money and securities as provided by statute or belonging to the state, agencies, and local political subdivisions and other organizations created on behalf of the state or agency or political subdivision of the state. The Comptroller is the sole officer, director, and shareholder of the Trust Company.

The Comptroller and the Trust Company have contracted with an administrator and investment manager (“Investment Manager”) for the TexPool Portfolios. The TexPool Portfolios comprise two investment alternatives: TexPool and TexPool Prime. This Investment Policy relates only to TexPool. TexPool invests in U.S. Treasury and government agency securities, repurchase agreements, and certain mutual funds.

In accordance with the Act, the Comptroller has appointed the TexPool Investment Advisory Board (the “Board”) to advise with respect to TexPool. The Board is composed equally of participants in the TexPool Portfolios and other persons who do not have a business relationship with the TexPool Portfolios and are qualified to advise the TexPool Portfolios.

B. PURPOSE

The purpose of TexPool is to offer a safe, efficient, and liquid investment alternative to local governments in the State of Texas. The expectation is that local governments will benefit from the receipt of higher investment returns as a result of economies of scale and the investment expertise and management oversight of the Comptroller and the Trust Company. Investments are made in accordance with this investment policy (the “TexPool Investment Policy”) established by the Trust Company and approved by the Comptroller. The TexPool Investment Policy’s investment parameters are more conservative than those contained in the Act. The TexPool Investment Policy is reviewed annually and revised as necessary.

C. OBJECTIVES

As required by the Act, the investment objectives of TexPool in order of priority are:

- preservation and safety of principal;
- liquidity; and
- yield

TexPool's additional objective is to maintain a stable \$1.00 price per unit. In accordance with the Act, TexPool securities are marked to market daily, and if the ratio of the market value of the portfolio divided by the book value of the portfolio is less than 0.995 or greater than 1.005, TexPool will take any appropriate action necessary to maintain the ratio between 0.995 and 1.005. However, the \$1.00 price is not guaranteed or insured by the State of Texas.

D. STANDARD OF CARE

As also required by the Act, TexPool investments are made subject to the "prudent person" standard of care. Accordingly, the Investment Manager must make investment decisions:

"with [the] judgment and care, under prevailing circumstances, that a person of prudence, discretion, and intelligence would exercise in the management of the person's own affairs, not for speculation, but for investment, considering the probable safety of capital and the probable income to be derived."

E. STRATEGIES

1. Portfolio Composition

The TexPool portfolio is designed and managed to ensure that it maintains its AAAm rating (or the equivalent) by a nationally recognized statistical rating organization ("NRSRO").

The following guidelines shall be followed by the Investment Manager to maintain the portfolio maturity consistent with a stable net asset value per share:

- The maximum remaining maturity of any security or other investment acquired for the portfolio shall be 397 calendar days or less.
- The portfolio should maintain a weighted average maturity of 60 days or less.
- The portfolio should maintain a weighted average life of 120 days or less.

Maturity limits are applied as defined in GASB 79.

A cure period of not more than 10 business days shall be permitted in the event that the weighted average maturity of the portfolio exceeds these limits, consistent with NRSRO guidelines.

2. Risk Management

Principal is protected and market and credit risks minimized by investing in a diversified pool of assets of high credit quality. Actual risks are minimized by adequate collateralization and use of delivery versus payment procedures.

The following procedure shall be followed by the Investment Manager to monitor investment rating changes:

- Perform ongoing monitoring of the credit risks of all securities.
- Create and update, as necessary, an approved list of issuers and securities.
- Maintain the approved list in the Investment Manager's trading and compliance system and utilize the system to monitor the credit risk on a pre-trade compliance basis.

- Note any changes in the rating of a security and determine whether such change is in compliance with the Act.
- If an investment is downgraded such that it is not in compliance with the Act, liquidate the security as required by the Act.

3. Liquidity

Cash needs and cash expectations take priority in the design and structure of TexPool. Income and expenditure history are developed and continuously updated to determine the liquidity needs of TexPool. Reports of anticipated cash flow needs are used to develop the maturity structure of the portfolio to provide liquidity to all participants. To meet the anticipated liquidity needs, TexPool is invested to ensure sufficient distribution of investments in liquid, short-term instruments. The maturities of the investments are distributed such that there is a continuing stream of securities maturing at frequent intervals.

Under normal operating conditions, TexPool seeks to remain fully invested. At the end of each business day, cash is primarily swept into repurchase agreements and/or an eligible money market fund

4. Returns

After consideration of safety and liquidity, TexPool assets are invested with the goal of achieving a competitive rate of return that meets or exceeds the yield on money market mutual funds with similar investment authority. TexPool is structured to benefit from anticipated market conditions and to achieve a reasonable return.

F. DISTRIBUTION OF GAINS AND LOSSES

All gains or losses from the sale of securities are distributed among TexPool participants, and will be amortized over the remaining term to maturity of the liquidated securities.

II. AUTHORIZED INVESTMENTS

The Act governs the investment of TexPool. The Act sets out a number of authorized investments. TexPool funds may be invested only in the following authorized investments:

A. GOVERNMENT SECURITIES (section 2256.009(a)(1) of the Act)

1. Statutory Requirements

Obligations of the United States, its agencies, or instrumentalities, including the Federal Home Loan Banks, and **EXCLUDING** the following:

- Obligations whose payment represents the coupon payments on the outstanding principal balance of the underlying mortgage-backed security collateral and pays no principal;
- Obligations whose payment represents the principal stream of cash flow from the underlying mortgage-backed security collateral and bears no interest;
- Collateralized mortgage obligations that have a stated final maturity date of greater than 10 years; and
- Collateralized mortgage obligations the interest rate of which is determined by an index that adjusts opposite to the changes in a market index.

2. Policy Guidelines

Portfolio Composition: Up to 100% of TexPool assets may be invested in government obligations of the United States, its agencies, or instrumentalities. However, no more than 60% of the portfolio may be invested in variable rate notes.

Maturity Limits: The maximum final stated maturity of a security may not exceed 397 days, other than for floating or variable rate government obligations of the United States, its agencies, or instrumentalities.

B. REPURCHASE AGREEMENTS (section 2256.011 of the Act)

1. Statutory Requirements

Fully collateralized repurchase agreements or reverse repurchase agreements (i) with defined termination dates, (ii) secured by obligations of the United States, its agencies, or its instrumentalities, including certain mortgage-backed securities, (iii) that require purchased securities to be pledged to the investing entity, in the entity's name, and deposited at the time of investment with the investing entity or a third party, and (iv) that are placed through primary government securities dealers, as defined by the Federal Reserve, or a financial institution doing business in the State of Texas.

The term of a reverse repurchase agreement may not exceed 90 days after the date of delivery. Money received under a reverse repurchase agreement may be used to acquire additional authorized investments provided such investments mature not later than the expiration date stated in the reverse repurchase agreement.

2. Policy Guidelines

a. Repurchase Agreements

Portfolio Composition:

Direct Repurchase Agreements: Up to 100% of TexPool assets may be invested in repurchase agreements.

Term Repurchase Agreements: A term repurchase agreement refers to any repurchase agreement with more than 7 calendar days remaining to maturity or more than 7 calendar days to the next put option that allows TexPool to liquidate the position at par (principal plus accrued interest.)

Maturity Limits: The maximum final maturity on repurchase agreements may not exceed 365 days. For purposes of calculating the weighted average maturity of the portfolio, the maturity date of a term repurchase agreement will be equal to the put option notice period.

Margin Requirement: Collateral must be equal to at least 102% of the total market value of the repurchase agreement, including accrued interest.

b. Reverse Repurchase Agreements

Portfolio Composition:

TexPool may enter into reverse repurchase agreements for up to one third (1/3) of the value of TexPool assets.

c. Repurchase Agreements and Reverse Repurchase Agreements

Documentation: All repurchase transactions are governed by a Bond Market Association (BMA) or Securities Industry and Financial Markets Association (SIFMA) approved Master Repurchase Agreement and Master Reverse Repurchase Agreement.

Custody: If collateral is to be held by a third party, the third party must have been previously approved by the Trust Company or the Investment Manager.

C. MONEY MARKET MUTUAL FUNDS (section 2256.014 of the Act)

1. Statutory and Other Requirements

No-load money market mutual fund that (i) is registered with and regulated by the Securities and Exchange Commission, (ii) provides a prospectus and other information required by the Securities Exchange Act of 1934 or the Investment Company Act of 1940, (iii) complies with federal Securities and Exchange Commission rule 2a-7, as promulgated under the Investment Company Act of 1940, (iv) is a permissible investment, and (v) includes in its investment objectives the maintenance of a stable net asset value of \$1.00 for each share.

2. Policy Guidelines

Portfolio Composition: TexPool assets may be invested in approved money market mutual funds. The Investment Manager may utilize affiliated money market funds for this purpose provided the Investment Manager waives its management fee equal to the relevant affiliated fund's net management fee, and provides an annual accounting of such waivers to the Trust Company.

Concentration Limits: No more than 10% of the TexPool assets may be invested in a single money market fund.

Rating: The money market mutual fund must be rated AAA or its equivalent by at least one NRSRO.

D. SECURITIES LENDING (section 2256.0115 of the Act)

1. Statutory Requirements

TexPool may engage in a securities lending program that complies with the following:

- a. the value of the securities loaned, including accrued interest, must be fully collateralized by:
 - (i) government securities,
 - (ii) irrevocable letters of credit issued by a bank organized under U.S. or state law and continuously rated at least A or its equivalent by at least one NRSRO, or
 - (iii) cash invested in government securities, commercial paper, mutual funds, or investment pools authorized by the Act;
- b. the loan must be terminable at any time;
- c. the loan terms must require that the collateral be pledged to the investing entity, held in its name, and deposited with the investing entity or a third party selected and approved by the investing entity;
- d. the loan must be placed through primary dealers or financial institutions doing business in the state; and
- e. the loan agreement must have a term of one year or less.

2. Policy Guidelines

Cash received under securities lending agreements must be used to acquire obligations authorized under this investment policy, provided that the average life of the obligations cannot exceed the average life of the securities lending agreements.

III. PROHIBITED INVESTMENTS

A. STATUTORY

As required by section 2256.009 of the Act, TexPool cannot invest in the following:

- Obligations whose payment represents the coupon payments on the outstanding principal balance of the underlying mortgage-backed security collateral and pays no principal;
- Obligations whose payment represents the principal stream of cash flow from the underlying mortgage-backed security collateral and bears no interest;
- Collateralized mortgage obligations that have a stated final maturity date of greater than 10 years; and
- Collateralized mortgage obligations the interest rate of which is determined by an index that adjusts opposite to the changes in a market index.

B. POLICY

1. Derivatives

TexPool will not invest in “derivatives.” For the purposes of this Investment Policy, “derivatives” means instruments with embedded features that alter their characteristics or income stream or allow holders to hedge or speculate on a market or spreads between markets that are external to the issuer, or are not directly correlated on a one-to-one basis to the associated index or market. Derivatives include, but are not limited to, the following:

- Arrangements in which an investor has swapped the natural cash flows or some portion of the natural cash flows of an instrument for a different set of cash flows. (*i.e.*, interest rate swaps).
- Over-the-counter/exchange traded options or futures (*i.e.*, option contracts, futures contracts).
- Collateralized mortgage obligations, inverse floating rate notes, range index notes, non-money market index-based notes, dual index notes, index amortizing notes, inverse multi-index bonds, stepped inverse index bonds, inverse index bonds.

Securities that are **not** considered derivatives and that are authorized investments for TexPool include the following:

Treasury Bills, Treasury Notes, Treasury Bonds, Treasury Strips, repurchase agreements, reverse repurchase agreements, U.S. agency notes with a defined maturity and fixed coupon rate, U.S. agency discount notes, money market index Treasury and agency variable rate notes (*i.e.*, floating rate notes tied to money market indices such as three and six month Treasury Bills; one, three, and six month London Interbank Offering Rate [LIBOR]; the Secured Overnight Financing Rate [SOFR]; Fed Funds; one year Constant Maturity Treasury; prime rate; and Commercial paper composite); U.S. agency step- up notes and any authorized investment that is callable prior to its final maturity.

2. Commercial Paper

While an authorized investment under the Act, TexPool will not invest in commercial paper.

3. Certificates of Deposit

While an authorized investment under the Act, TexPool will not invest in certificates of deposit.

IV.**ADMINISTRATIVE GUIDELINES****A. COMPETITIVE BIDDING**

TexPool trades, purchases, and sales are done on a best execution basis through a documented competitive bidding process. The broker/dealers used for TexPool are those approved by the Comptroller and the Trust Company and in compliance with the Comptroller rules.

B. SAFEKEEPING

All eligible book-entry securities whether purchased outright or under repurchase agreements, are held in a separate custodial account at the Federal Reserve Bank in the name of the TexPool Portfolios or in an independent third party institution designated by the Investment Manager on behalf of the TexPool Portfolios. All securities not held in book entry form are held at an independent third-party institution designated by the Investment Manager on behalf of the TexPool Portfolios. Third party institutions must issue original safekeeping receipts to the Investment Manager.

C. AUTHORIZED PERSONNEL

The Investment Manager personnel authorized to buy and sell investment instruments, send and receive securities, and make fund transfers and other types of related investment transactions are directly supervised by senior investment management personnel in the Investment Manager's Investment Management Group.

D. DOCUMENTATION

Complete documentation and audit trails are maintained for all investment transactions.

E. MONITORING MARKET PRICE

State Street Bank and Trust, the custodian designated by the Investment Manager (the "Custodian") provides fund accounting services for TexPool and is responsible for marking-to-market the portfolio holdings of TexPool on a daily basis. The Custodian receives electronic transmissions from various pricing vendors in order to determine the individual market price of each security held in TexPool. These electronic transmissions are checked daily for current data and validity of information. The Custodian also performs a reasonability test to determine whether the prices received are within a set tolerance range. In the event that any of the prices fall outside of the range, then these prices are investigated against secondary pricing sources. As a further check, the Investment Manager also monitors the prices of securities held in TexPool, in order to independently determine reasonableness and validity.

The shadow price is the net asset value per share of TexPool, calculated using total investments measured at fair value at the calculation date. TexPool's shadow price is calculated daily.

F. PARTICIPATION AGREEMENTS

Each participant must have a fully executed participation agreement on file with the Trust Company before participating in TexPool.

G. DEPOSIT AND WITHDRAWAL DEADLINES

See separate TexPool Operating Procedures for detailed deposit and withdrawal deadlines.

H. REPORTING AND DISCLOSURE

The Act requires that public fund investment pools provide basic information regarding the pool's investments and operations. The pool is to provide the investment officer, or other authorized representative of a participating entity, disclosure information in an Information Statement. The required disclosure items are listed in the Act. This information is provided to all participants. Further, to maintain eligibility to receive funds from and invest funds on behalf of the pool's participants, TexPool must furnish investment confirmations and a monthly report disclosing certain information. Finally, the Comptroller requires that TexPool be audited annually by an independent auditor.

I. AUTHORIZED DEALERS

The Comptroller maintains a list of approved dealers and brokers (collectively, "dealers") authorized to provide investment services. All dealers who desire to become qualified bidders for investment transactions for TexPool must be on the approved list. The Comptroller annually reviews the financial condition and registration of the qualified dealers and revises the approved list as needed.

J. ETHICS AND CONFLICT OF INTEREST

The Comptroller requires the Investment Manager and its staff that are involved with making investment decisions for or executing trades on behalf of TexPool to disclose any personal or business relationship with a broker/dealer seeking to sell investments to TexPool. These employees are also required to refrain from personal business activity that could conflict with the proper execution and management of the investment program or that could impair their ability to make impartial decisions. The Investment Manager's Compliance Officer is required to file a quarterly statement with the Trust Company evidencing compliance with foregoing matters by the Investment Manager and its employees.

Moreover, agents, advisors, and contractors providing services in connection with the custody, management, and investment of public funds under a contract with the Comptroller are required to at all times avoid any actual or apparent conflict of interest with respect to the custody, management, and investment of public funds. For purposes of this investment policy, a conflict of interest refers to any circumstances in which an agent, advisor, or contractor who, in the context of duties under its contract with the Comptroller, has interests that are or may become inconsistent with the interests of the agent, advisor, or contractor with respect to other duties, contractual or otherwise.



TexPool *Prime* Information Statement

Texas Local Government
Investment Pool

April 2019

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No person or entity has been authorized to give any information, or to make any representations other than those contained in this Information Statement, and, if given or made, such other information or representations must not be relied upon as having been authorized by the Texas Treasury Safekeeping Trust Company, the Texas Comptroller of Public Accounts, or Federated Investors, Inc. The attachments included herein are part of this Information Statement. The information contained in this document is subject to change without notice.

If you have any questions regarding this material, please contact:

TexPool Participant Services
C/O Federated Investors, Inc.
Attn: Office Manager
1001 Texas Avenue, Suite 1150
Houston, Texas 77002

1-866-839-7665 (1-866-TEX-POOL)

I. Organization and Structure

The Texas Local Government Investment Pools (the “TexPool Portfolios”) have been organized in conformity with the Interlocal Cooperation Act, Chapter 791 of the Texas Government Code, and the Public Funds Investment Act, Chapter 2256 of the Texas Government Code. These two acts provide for the creation of public funds investment pools and permit eligible governmental entities to jointly invest their funds in authorized investments.

The Comptroller of Public Accounts (the “Comptroller”) is the sole officer, director and shareholder of the Texas Treasury Safekeeping Trust Company (the “Trust Company”), which is authorized to operate the TexPool Portfolios. Pursuant to the TexPool Participation Agreement, administrative and investment services to the TexPool Portfolios are provided by Federated Investors, Inc. (“Federated”), under an agreement with the Comptroller, acting on behalf of the Trust Company. The TexPool Portfolios are comprised of two investment alternatives: TexPool Prime and TexPool. This Information Statement relates only to TexPool Prime. TexPool Prime may invest in commercial paper and certificates of deposit, as well as obligations of the United States Government or its agencies and instrumentalities, and repurchase agreements.

The Comptroller maintains oversight of the services provided to the TexPool Portfolios by Federated. In addition, the TexPool Advisory Board advises on the Investment Policies for the TexPool Portfolios and approves any fee increases. As required by the Public Funds Investment Act, the Advisory Board is composed equally of participants in the TexPool Portfolios and other persons who do not have a business relationship with the TexPool Portfolios who are qualified to advise the TexPool Portfolios.

II. Public Funds Investment Act Disclosure Items

The Public Funds Investment Act requires investment pools to provide an information statement to the investment officer or other authorized representative of an investing entity. This section provides the specific information items required by Section 2256.016 of the Public Funds Investment Act as it relates to an investment in TexPool Prime.

1. Types of Investments Authorized for TexPool Prime. The investment policies and composition guidelines for TexPool Prime are summarized below. Although the Public Funds Investment Act permits investment in a variety of investment types, the TexPool Prime Investment Policy restricts investment to the following investments:

Authorized Investments:

- A. Obligations of the United States Government or its agencies and instrumentalities with a maximum final maturity of 397 days for fixed rate securities other than for floating or variable rate government obligations of the United States, its agencies, or instrumentalities.
- B. Fully collateralized repurchase agreements or reverse repurchase agreements (i) with defined termination dates, (ii) secured by obligations of the United States, its agencies or its instrumentalities, including mortgage-backed securities, (iii) that require purchased securities to be pledged to the investing entity or a third party, and (iv) that are placed through primary government securities dealers or a financial institution doing business

in the State of Texas. The term of a reverse repurchase agreement may not exceed 90 days after the date of delivery. Money received under a reverse repurchase agreement may be used to acquire additional authorized investments provided such investments mature not later than the expiration date stated in the reverse repurchase agreement.

- C. No-load money market mutual funds that (i) are registered with and regulated by the Securities and Exchange Commission, (ii) provide a prospectus and other information required by the Securities Exchange Act of 1934 or the Investment Company Act of 1940, and (iii) comply with federal Securities and Exchange Commission rule 2a-7, as promulgated under the Investment Company Act of 1940. The money market mutual fund must be rated AAA or its equivalent by at least one NRSRO.
- D. Certificates of deposit issued by a state or national bank, savings bank, or a state or federal credit union that has its main office or a branch office in Texas that are (a) guaranteed or insured by the FDIC or the National Credit Union Share Insurance Fund; (b) secured by obligations of the United States, its agencies, or its instrumentalities, including certain mortgage backed securities that have a market value at least equal to the principal amount of the certificates; or (c) secured in accordance with Chapter 2257 of the Texas Government Code or in any manner and amount provided by other law for deposits of the investing entity
- E. Commercial paper that matures in 270 days or less from the date of its issuance. The commercial paper must be rated at least A-1 or P-1 (or the equivalent thereof) by (i) two NRSROs or (ii) one NRSRO and fully secured by an irrevocable letter of credit by a national or state bank.
- F. Securities lending programs that comply with various limitations.

Prohibited Investments:

- A. TexPool Prime *will not* invest in derivatives. The definition of derivatives includes instruments which have embedded features that alter their character or income stream or allow holders to hedge or speculate on a market or spreads between markets that are external to the issuer or are not correlated on a one-on-one basis to the associated index or market.

Diversification Guidelines:

Specific portfolio diversification limitations govern the TexPool Prime portfolio:

- A. 100% of the portfolio may be invested in obligations of the United States.
 - B. 100% of the portfolio may be invested in direct repurchase agreements.
 - C. Reverse repurchase agreements may be used within a limitation of up to one-third (1/3) of total portfolio assets.
 - D. No more than 10% of the portfolio may be invested in approved money market mutual funds.
 - E. 75% of the portfolio may be invested in certificates of deposits.
 - F. 100% of the portfolio may be invested in commercial paper.
2. Maximum Average Dollar-Weighted Maturity. The portfolio should maintain a weighted average maturity of 60 days or less.
 3. Maximum Stated Maturity Date. The maximum maturity for any individual security in the portfolio is limited to 397 days than for floating or variable rate government obligations of the United States, its agencies, or instrumentalities
 4. Objectives of TexPool Prime. The primary objectives of TexPool Prime are preservation and safety of principal; liquidity; and yield. There is no sales charge and no investment minimum. TexPool Prime will invest only in investments that are authorized under both the Public Funds Investment Act and the TexPool Prime Investment Policy. See Item 1 of this section for a description of authorized TexPool Prime investments.
 5. Size of the Pool. The current size of TexPool Prime is provided in TexPool Prime's monthly newsletter to Participants or by calling TexPool Participant Services at 1-866-839-7665. A copy of the most recent newsletter, which contains the historical average monthly balance, should be obtained in connection with this Information Statement.
 6. TexPool Advisory Board. Section 2256.016(g)(1) of the Public Funds Investment Act requires TexPool to establish and maintain an advisory board composed equally of participants in the TexPool Portfolios and other persons who do not have a business relationship with the TexPool Portfolios. The TexPool Advisory Board advises on TexPool Prime's Investment Policy and approves any fee increases. The TexPool Advisory Board members serve at the will of the Comptroller. A current list of the TexPool Advisory Board members is included in the TexPool newsletter, which is mailed monthly to each participant and is also posted on the TexPool website, www.texpool.com, under the Newsletter link.
 7. Custodian for TexPool. State Street Bank serves as custodian to TexPool Prime.
 8. Net Asset Value. TexPool Prime seeks to maintain a net asset value of \$1.00 and is designed to be used for investment of funds which may be needed at anytime.

9. **Source of Payment.** The only source of payment to Participants are the assets of TexPool Prime. There is no secondary source of payment for TexPool Prime, such as insurance or guarantees.
10. **Independent Auditor.** TexPool is subject to annual review by an independent auditor consistent with the Public Funds Investment Act. RSM US LLP, 811 Barton Springs Road Suite 500, Austin, Texas 78704, performed TexPool audits for each year beginning with the accounting periods September 1, 2015 through August 31, 2018. Beginning in the audit period September 1, 2012 through each twelve-month period ending August 31, 2015, Padgett Stratemann & Co., LLP, 811 Barton Springs Road, Suite 550, Austin, Texas 78704 performed auditing services. In addition, TexPool is subject to review by the State Auditor's Office and by the internal auditors of the Trust Company and Comptroller's Office.
11. **Operating Procedures.** Deposits and withdrawals may be made by wire transfer or automated clearinghouse (ACH) transfer according to established operating procedures. The requirements for TexPool Prime deposits and withdrawals, deadlines, and other operating procedures are summarized under the section entitled "Summary of Operating Procedures" later in this Information Statement.
12. **Performance History.** The performance history, including yield, weighted average maturity, expense ratios and average balance is provided on a monthly basis on the TexPool website, www.texpool.com, under the Rate Information link and in the monthly TexPool newsletter which is mailed to each participant and posted on the website under the Newsletters link.

III. Understanding the Risks Associated with Investing in TexPool Prime

Before making an investment decision, each participant should consider two types of risks in determining whether any investment, including TexPool Prime, is appropriate: credit risk and market risk.

Credit Risk. Credit risk is the possibility that an issuer will default on a security by failing to pay interest or principal when due. If an issuer defaults, TexPool Prime will lose money. TexPool Prime tries to minimize this risk by purchasing high quality securities.

Many fixed income securities receive credit ratings from NRSROs such as Standard & Poor's and Moody's Investors Service. These NRSROs assign ratings to securities by assessing the likelihood of issuer default. Lower credit ratings correspond to higher perceived credit risk and higher credit ratings correspond to lower perceived credit risk.

Credit risk includes the possibility that a party to a transaction involving TexPool Prime will fail to meet its obligations. This could cause TexPool Prime to lose the benefit of the transaction or prevent the Fund from selling or buying other securities to implement its investment strategy.

Market Risk. Prices of fixed income securities rise and fall in response to changes in the interest rate paid by similar securities. Generally, when interest rates rise, prices of fixed income securities fall. However, market factors, such as demand for particular fixed income securities, may cause the price of certain fixed income securities to fall while the prices of other securities rise or remain unchanged.

Interest rate changes have a greater effect on the price of fixed income securities with longer maturities. TexPool Prime tries to minimize this risk by purchasing short-term securities and maintaining a weighted average portfolio maturity of sixty (60) days or less.

IV. Administration of TexPool Prime

By executing the Participation Agreement, the Participant has delegated the authority to the Comptroller, or the comptroller's designee, to hold legal title as custodian and to make investments purchased with the Participant's funds deposited in TexPool Prime. The Participation Agreement permits the Trust Company to enter into an agreement with a third party investment manager to perform its obligations and services under the Participation Agreement with provision that TexPool Prime be managed according to the requirements of the Public Funds Investment Act, the TexPool Prime Investment Policy, and in a manner consistent with that directed by the Trust Company.

The Trust Company has signed an agreement with Federated to provide required services to the TexPool Portfolios. The agreement terminates December 31, 2024. The Trust Company has the right, in its sole discretion, to renew the agreement for one additional two-year period to December 31, 2026, and to extend the renewal period for six (6) months to June 30, 2026. The Comptroller maintains control of TexPool Prime through a series of daily, weekly, and monthly reporting requirements. Federated serves as investment manager and provides portfolio accounting, custodial, transfer agency, marketing and participant services to TexPool Prime.

- **Investment Management.** The Comptroller will provide Federated, TexPool Prime's Investment Manager, with a list of primary dealers and brokers authorized to provide investment services. All dealers and brokers who desire to become qualified bidders for investment transactions must supply to the Trust Company a completed broker/dealer questionnaire, proof of registration with the Texas State Securities Board, proof of National Association of Securities Dealers (NASD) certification, audited financial statements, and written acknowledgment that the entity has read the TexPool Prime Investment Policy and has reasonable procedures and controls to preclude imprudent investment activities arising out of investment transactions conducted between the entity and TexPool Prime. Federated will review the financial condition of brokers and dealers with whom it executes investment transactions.
- **Ratings.** To comply with Section 2256.016(h) of the Public Funds Investment Act, TexPool Prime will maintain a AAA or equivalent rating from at least one NRSRO. TexPool Prime is currently rated AAAM by Standard and Poor's. An explanation of the significance of such rating may be obtained from Standard & Poor's at 1221 Avenue of the Americas, New York, New York 10020.
- **Calculation of Yields and Net Asset Value.** Each day, TexPool Prime determines the net interest income for that day. The net interest income is determined by adjusting TexPool Prime's accrued interest for that day by the amortization of any premiums and/or the accretion of any discounts, daily service fee, and any gains or losses from the sale of securities. TexPool Prime's daily interest rate will be determined by dividing the net interest income for that day by the total investable balance of TexPool Prime for that day. The resulting rate will then be used to determine the amount of interest income to distribute to each Participant's account. Interest income accrued during the month is credited to each Participant's account at the end of the month and is reinvested unless the Participant provides for its withdrawal or transfer.
- **Valuation of TexPool Prime Assets.** All investments are stated at amortized cost, which in most cases approximates the market value of the securities. The objective of

TexPool Prime is to maintain a stable \$1.00 net asset value; however, the \$1.00 net asset value is not guaranteed or insured by the State of Texas. All TexPool Prime securities will be marked to market daily. If the ratio of the market value of TexPool Prime's portfolio securities divided by the book value of such securities is less than 0.995 or greater than 1.005, TexPool Prime will sell portfolio securities, as required, to maintain the ratio between 0.995 and 1.005. All gains or losses from the sale of securities will be distributed among TexPool Prime Participants over a period of up to thirty (30) days from the date of which the gain or loss is realized.

- **Ethics and Conflicts of Interest.** The Comptroller requires Federated and its staff that are involved with making investment decisions for or executing trades on behalf of TexPool to disclose any personal or business relationship with a broker/dealer seeking to sell investments to TexPool. These employees are also required to refrain from personal business activity that could conflict with the proper execution and management of the investment program or that could impair their ability to make impartial decisions. Federated's Compliance Officer is required to file a quarterly statement with the Trust Company evidencing compliance with foregoing matters by Federated and its employees.
- **Fees and Expenses.** The TexPool Prime service fee is 5.5 basis points annually, calculated daily on the TexPool Prime balance. The TexPool Prime fee is deducted from the gross interest earned. There is no direct reduction to the Participant's account; thus only the net income is credited to the Participant's account. All TexPool Prime rates are quoted net of fees. There are no hidden costs or additional reductions to Participants' accounts. Under the current contract with Federated, the fee may not be raised for the duration of the contract. The contract's initial term ends December 31, 2024, and it is renewable for an additional two years to December 31, 2026 which may be extended to June 30, 2026 in the sole discretion of the Trust Company.
- **Liability.** Any liability of the Comptroller, the Comptroller's Office, the Trust Company, representatives or agents or the Trust Company, any Comptroller or Trust Company employee, or any member of the Board for any loss, damage or claim, including losses from investments and transfers, to the Participant shall be limited to the full extent allowed by applicable laws. The Trust Company's responsibilities under the Participation Agreement are limited to the management and investment of TexPool Prime and the providing of reports and information required.

V. Participating in TexPool Prime

Participation in TexPool Prime is limited to those eligible governmental entities that have executed a Participation Agreement with the Comptroller. Participants' assets in TexPool Prime are represented by units. Assets in TexPool Prime will be invested in accordance with such investment objectives, limitations, and other policies established by the Comptroller. The TexPool Prime Investment Policy is summarized in the Information Statement. A complete copy of the Investment Policy may be obtained from TexPool Participant Services.

- **Eligibility to Invest.** Each governing body of a local government or a state agency subject to the Public Funds Investment Act may approve by resolution execution of a Participation Agreement, consistent with the provisions of the entity's approved investment policy.
- **Establishment of Accounts.** To open an initial TexPool Prime account, the Participant must execute the Participation Agreement and provide a Resolution authorizing participation in TexPool Prime and follow the procedures for designating "Authorized Participant Representatives" on TexPool Portfolios. Designated Authorized Participant Representatives are authorized to transfer funds for investment in the TexPool Portfolios and are further authorized to withdraw funds from time to time, to issue letters of instructions, and take all other actions deemed necessary or appropriate for the investment of local funds. A Participant must also provide a separate Bank Information Sheet for each account signed by two Authorized Participant Representatives. The Operating Procedures describe in detail the procedures required for the establishment of accounts, deposits to and withdrawals from TexPool Prime, and related information. A copy of the Operating Procedures may be obtained from TexPool Participant Services or through the TexPool website @ www.texpool.com
- **Amendments.** The Trust Company shall advise the Participant in writing of any amendments to the Participation Agreement no less than 45 days prior to the effective date of such amendment. The Participant may ratify the proposed amendment of the Agreement by letter to the Trust Company. In the event the Participant elects not to ratify the amendment, the Participant may terminate the Agreement in accordance with the applicable Agreement provision. In the event the Participant fails to respond in writing to a notice of amendment prior to the effective date of such amendment, the Agreement shall be deemed amended.

The Operating Procedures may be periodically revised from time to time as necessary for the efficient operation of TexPool Prime. Transactions subsequent to the effective date of a revision in Operating Procedures should be conducted according to the revised procedure.

VI. Summary of Operating Procedures

Deposits and withdrawals to TexPool Prime may be made by wire transfer or automated clearinghouse (ACH) transfer according to established operating procedures. Excerpts from the current operating procedures are provided below.

- **Wire Transfers.** Wire transfer transactions will be executed on the same day as initiated. TexPool Prime Participant Services must be notified by 2:00 p.m. (Central Time) for all wire transfer activity. Outgoing wire transfers from TexPool Prime will be sent through the FED by the close of business (5:00 p.m. CST). Wire transfer deposits will not be accepted into TexPool Prime after the trade cutoff.
- **Automated Clearing House (“ACH”) Transfers.** ACH transactions will be executed on the business day following the date the transaction was initiated. TexPool Prime must be notified by 2:00 p.m. (Central Time) for all ACH transfer activity one day prior to the actual settlement of the funds. ACH transfer withdrawals are sent in accordance with the prearranged information as provided on the Bank Information Sheet corresponding to that specific TexPool Prime account. In the event of an ACH rejection, TexPool will contact the Participant to confirm the rejection. TexPool Prime will credit/debit the Participant’s account accordingly including any interest earned from the date of the ACH rejection.
- **Methods of Notification to TexPool Prime of wire transfer or ACH activity:**
 - a. TexConnect Online;
 - b. Verbal notification (on a recorded phone line) to a TexPool Participant Services representative. Participant’s TexConnect PIN number must be provided at the point of call. A confirmation for each transaction is generated daily and mailed to the Participant the following business day, provided it is not a bank holiday.

Reports. Participants will be mailed a monthly statement within the first five (5) business days of the succeeding month. The monthly statement will include a detailed listing of the balance in the Participant’s accounts as of the date of the statement; all account activity, including deposits and withdrawals; and any special fees and expenses charged. Additionally, copies of the Participant’s reports in physical or electronic form will be maintained for a minimum of three prior fiscal years. A complete copy of the TexPool Operating Procedures may be obtained by contacting TexPool Participant Services or through the TexPool website @ www.texpool.com



TexPool Prime Investment Policy

Texas Local Government
Investment Pool

Revised August 2020

I. PURPOSE AND OBJECTIVES STATEMENT

A. TEXPOOL PRIME

The Interlocal Cooperation Act, chapter 791 of the Texas Government Code, and the Public Funds Investment Act, chapter 2256 of the Texas Government Code (the “Act”), provide for the creation of public funds investment pools through which political subdivisions and other entities may invest public funds.

TexPool Prime will use amortized cost to value portfolio assets and follow the criteria established by Governmental Accounting Standards Board (“GASB”) Statement No. 79 for use of amortized cost. This Investment Policy shall be interpreted and applied in a manner consistent with GASB guidance on external investment pools that use amortized cost to value all portfolio assets.

Pursuant to subchapter G of chapter 404, the Comptroller of Public Accounts (the “Comptroller”) administers the Texas Local Government Investment Pools (the “TexPool Prime Portfolios”) as public funds investment pools through the Texas Treasury Safekeeping Trust Company (the “Trust Company”). The Trust Company is a special-purpose trust company authorized to receive, transfer, and disburse money and securities as provided by statute or belonging to the state, agencies, and local political subdivisions and other organizations created on behalf of the state or agency or political subdivision of the state. The Comptroller is the sole officer, director, and shareholder of the Trust Company.

The Comptroller and the Trust Company have contracted with an administrator and investment manager (“Investment Manager”) for the TexPool Portfolios. The TexPool Portfolios comprise two investment alternatives: TexPool and TexPool Prime. This Investment Policy relates only to TexPool Prime. TexPool Prime invests in U.S. Treasury and government agency securities, repurchase agreements, certain mutual funds, commercial paper, and certificates of deposit.

In accordance with the Act, the Comptroller has appointed the TexPool Prime Investment Advisory Board (the “Board”) to advise with respect to TexPool Prime. The Board is composed equally of participants in the TexPool Prime Portfolios and other persons who do not have a business relationship with the TexPool Prime Portfolios and are qualified to advise the TexPool Portfolios.

B. PURPOSE

The purpose of TexPool Prime is to offer a safe, efficient, and liquid investment alternative to local governments in the State of Texas. The expectation is that local governments will benefit from the receipt of higher investment returns as a result of economies of scale and the investment expertise and management oversight of the Comptroller and the Trust Company. Investments are made in accordance with this investment policy (the “TexPool Prime Investment Policy”) established by the Trust Company and approved by the Comptroller. The TexPool Prime Investment Policy’s investment parameters are more conservative than those contained in the Act. The TexPool Prime Investment Policy is reviewed annually and revised as necessary.

C. OBJECTIVES

As required by the Act, the investment objectives of TexPool Prime in order of priority are:

- preservation and safety of principal;
- liquidity; and
- yield

TexPool Prime's additional objective is to maintain a stable \$1.00 price per unit. In accordance with the Act, TexPool Prime securities are marked to market daily, and if the ratio of the market value of the portfolio divided by the book value of the portfolio is less than 0.995 or greater than 1.005, TexPool Prime will take any appropriate action necessary to maintain the ratio between 0.995 and 1.005. However, the \$1.00 price is not guaranteed or insured by the State of Texas.

D. STANDARD OF CARE

As also required by the Act, TexPool Prime investments are made subject to the "prudent person" standard of care. Accordingly, the Investment Manager must make investment decisions:

"with [the] judgment and care, under prevailing circumstances, that a person of prudence, discretion, and intelligence would exercise in the management of the person's own affairs, not for speculation, but for investment, considering the probable safety of capital and the probable income to be derived."

E. STRATEGIES

1. Portfolio Composition

The TexPool Prime portfolio is designed and managed to ensure that it maintains its AAAM rating (or the equivalent) by a nationally recognized statistical rating organization ("NRSRO").

The following guidelines shall be followed by the Investment Manager to maintain the portfolio maturity consistent with a stable net asset value per share:

- The maximum remaining maturity of any security or other investment acquired for the portfolio shall be 397 calendar days or less.
- The portfolio should maintain a weighted average maturity of 60 days or less.
- The portfolio should maintain a weighted average life of 120 days or less.

Maturity limits are applied as defined in GASB 79.

A cure period of not more than 10 business days shall be permitted in the event that the weighted average maturity of the portfolio exceeds these limits, consistent with NRSRO guidelines.

2. Risk Management

Principal is protected and market and credit risks minimized by investing in a diversified pool of assets of high credit quality. Actual risks are minimized by adequate collateralization and use of delivery versus payment procedures.

The following procedure shall be followed by the Investment Manager to monitor investment rating changes:

- Perform ongoing monitoring of the credit risks of all securities.
- Create and update, as necessary, an approved list of issuers and securities.

- Maintain the approved list in the Investment Manager's trading and compliance system and utilize the system to monitor the credit risk on a pre-trade compliance basis.
- Note any changes in the rating of a security and determine whether such change is in compliance with the Act.
- If an investment is downgraded such that it is not in compliance with the Act, liquidate the security as required by the Act.

3. Liquidity

Cash needs and cash expectations take priority in the design and structure of TexPool Prime. Income and expenditure history are developed and continuously updated to determine the liquidity needs of TexPool Prime. Reports of anticipated cash flow needs are used to develop the maturity structure of the portfolio to provide liquidity to all participants. To meet the anticipated liquidity needs, TexPool Prime is invested to ensure sufficient distribution of investments in liquid, short-term instruments. The maturities of the investments are distributed such that there is a continuing stream of securities maturing at frequent intervals.

Under normal operating conditions, TexPool Prime seeks to remain fully invested. At the end of each business day, cash is primarily swept into repurchase agreements and/or an eligible money market fund.

4. Returns

After consideration of safety and liquidity, TexPool Prime assets are invested with the goal of achieving a competitive rate of return that meets or exceeds the yield on money market mutual funds with similar investment authority. TexPool Prime is structured to benefit from anticipated market conditions and to achieve a reasonable return.

F. DISTRIBUTION OF GAINS AND LOSSES

All gains and losses from the sale of securities are distributed among TexPool Prime participants and will be amortized over the remaining term to maturity of the liquidated securities.

II. AUTHORIZED INVESTMENTS

The Act governs the investment of TexPool Prime. The Act sets out a number of authorized investments. TexPool Prime funds may be invested only in the following authorized investments:

A. GOVERNMENT SECURITIES (section 2256.009(a)(1) of the Act)

1. Statutory Requirements

Obligations of the United States, its agencies, or instrumentalities, including the Federal Home Loan Banks, and **EXCLUDING** the following:

- Obligations whose payment represents the coupon payments on the outstanding principal balance of the underlying mortgage-backed security collateral and pays no principal;
- Obligations whose payment represents the principal stream of cash flow from the underlying mortgage-backed security collateral and bears no interest;
- Collateralized mortgage obligations that have a stated final maturity date of greater than 10 years; and
- Collateralized mortgage obligations the interest rate of which is determined by an index that adjusts opposite to the changes in a market index.

2. Policy Guidelines

Portfolio Composition: Up to 100% of TexPool Prime assets may be invested in government obligations of the United States, its agencies, or instrumentalities. However, no more than 60% of the portfolio may be invested in variable rate notes.

Maturity Limits: The maximum final stated maturity of a security may not exceed 397 days, other than for floating or variable rate government obligations of the United States, its agencies, or instrumentalities. The final stated maturity of securities that are not obligations of the United States, its agencies or instrumentalities, is the earlier of the contractual final maturity date or the next date on which full repayment of principal can be obtained through exercise of a demand feature.

B. REPURCHASE AGREEMENTS (section 2256.011 of the Act)

1. Statutory Requirements

Fully collateralized repurchase agreements or reverse repurchase agreements (i) with defined termination dates, (ii) secured by obligations of the United States, its agencies, or its instrumentalities, including certain mortgage-backed securities, (iii) that require purchased securities to be pledged to the investing entity, in the entity's name, and deposited at the time of investment with the investing entity or a third party, and (iv) that are placed through primary government securities dealers, as defined by the Federal Reserve, or a financial institution doing business in the State of Texas.

The term of a reverse repurchase agreement may not exceed 90 days after the date of delivery. Money received under a reverse repurchase agreement may be used to acquire additional authorized investments provided such investments mature not later than the expiration date stated in the reverse repurchase agreement.

2. Policy Guidelines

a. Repurchase Agreements

Portfolio Composition:

Direct Repurchase Agreements: Up to 100% of TexPool Prime assets may be invested in repurchase agreements.

Term Repurchase Agreements : A term repurchase agreement refers to any repurchase agreement with more than 7 calendar days remaining to maturity or more than 7 calendar days to the next put option that allows TexPool Prime to liquidate the position at par (principal plus accrued interest.)

Maturity Limits: The maximum final maturity on repurchase agreements may not exceed 365 days. For purposes of calculating the weighted average maturity of the portfolio, the maturity date of a term repurchase agreement will be equal to the put option notice period.

Margin Requirement: Collateral must be equal to at least 102% of the total market value of the repurchase agreement, including accrued interest.

b. Reverse Repurchase Agreements

Portfolio Composition: TexPool Prime may enter into reverse repurchase agreements for up to one third (1/3) of the value of TexPool Prime assets.

c. Repurchase Agreements and Reverse Repurchase Agreements

Documentation: All repurchase transactions are governed by a Bond Market Association (BMA) or Securities Industry and Financial Markets Association (SIFMA) approved Master Repurchase Agreement and Master Reverse Repurchase Agreement.

Custody: If collateral is to be held by a third party, the third party must have been previously approved by the Trust Company or the Investment Manager.

C. MONEY MARKET MUTUAL FUNDS (section 2256.014 of the Act)

1. Statutory and Other Requirements

No-load money market mutual fund that (i) is registered with and regulated by the Securities and Exchange Commission, (ii) provides a prospectus and other information required by the Securities Exchange Act of 1934 or the Investment Company Act of 1940, and (iii) complies with federal Securities and Exchange Commission rule 2a-7, as promulgated under the Investment Company Act of 1940.

TexPool Prime may not acquire shares of a money market mutual fund that represent more than 10% of the outstanding shares of that fund at the time of purchase.

2. Policy Guidelines

Portfolio Composition: TexPool Prime assets may be invested in approved money market mutual funds. The Investment Manager may utilize affiliated money market funds for this purpose provided the Investment Manager waives its management fee equal to the relevant affiliated fund's net management fee, and provides an annual accounting of such waivers to the Trust Company.

Concentration Limits: No more than 15% of the TexPool Prime assets may be invested in money market mutual funds that do not seek to maintain a stable net asset value per share.

Rating: The money market mutual fund must be rated AAA or its equivalent by at least one NRSRO.

D. SECURITIES LENDING (section 2256.0115 of the Act)

1. Statutory Requirements

TexPool Prime may engage in a securities lending program that complies with the following:

- a. the value of the securities loaned, including accrued interest, must be fully collateralized by:
 - (i) government securities,
 - (ii) irrevocable letters of credit issued by a bank organized under U.S. or state law and continuously rated at least A or its equivalent by at least one NRSRO, or
 - (iii) cash invested in government securities, commercial paper, mutual funds, or investment pools authorized by the Act;
- b. the loan must be terminable at any time;
- c. the loan terms must require that the collateral be pledged to the investing entity, held in its name, and deposited with the investing entity or a third party selected and approved by the investing entity;
- d. the loan must be placed through primary dealers or financial institutions doing business in the state; and
- e. the loan agreement must have a term of one year or less.

2. Policy Guidelines

Cash received under securities lending agreements must be used to acquire obligations authorized under this investment policy, provided that the average life of the obligations cannot exceed the average life of the securities lending agreements.

E. CERTIFICATES OF DEPOSIT (section 2256.010 of the Act)

1. Statutory Requirements

Certificates of deposit issued by a state or national bank, savings bank, or a state or federal credit union that has its main office or a branch office in Texas that are (a) guaranteed or insured by the FDIC or the National Credit Union Share Insurance Fund; (b) secured by obligations of the United States, its agencies, or its instrumentalities, including certain mortgage-backed securities that have a market value at least equal to the principal amount of the certificates; or (c) secured in accordance with Chapter 2257 of the Texas Government Code or in any manner and amount provided by other law for deposits of the investing entity.

2. Policy Guidelines

Up to 75% of TexPool Prime assets may be invested in certificates of deposit.

F. COMMERCIAL PAPER (section 2256.013 of the Act)

1. Statutory Requirements

Commercial paper (a) with a stated maturity of 365 days or fewer from the date of issuance; and (b) that is rated at least A-1 or P-1 or an equivalent rating by at least two NRSROs or one NRSRO and fully secured by an irrevocable letter of credit by a national or state bank.

2. Policy Guidelines

Portfolio Composition: Up to 100% of TexPool Prime assets may be invested in commercial paper. However, no more than 25% of TexPool Prime assets may be invested in a single industry or business sector, provided that this limitation does not apply to securities issued or guaranteed by companies in the financial services industry.

Concentration Limits: No more than 5% of TexPool Prime assets may be invested in a single corporate entity. A 10 business day cure period shall be permitted in the event that the portfolio exceeds this limit, consistent with NRSRO guidelines.

III. PROHIBITED INVESTMENTS

A. STATUTORY

As required by section 2256.009 of the Act, TexPool Prime cannot invest in the following:

- Obligations whose payment represents the coupon payments on the outstanding principal balance of the underlying mortgage-backed security collateral and pays no principal;
- Obligations whose payment represents the principal stream of cash flow from the underlying mortgage-backed security collateral and bears no interest;
- Collateralized mortgage obligations that have a stated final maturity date of greater than 10 years; and
- Collateralized mortgage obligations the interest rate of which is determined by an index that adjusts opposite to the changes in a market index.

B. POLICY

1. Derivatives

TexPool Prime will not invest in “derivatives.” For the purposes of this Investment Policy, “derivatives” means instruments with embedded features that alter their characteristics or income stream or allow holders to hedge or speculate on a market or spreads between markets that are external to the issuer, or are not directly correlated on a one-to-one basis to the associated index or market. Derivatives include, but are not limited to, the following:

- Arrangements in which an investor has swapped the natural cash flows or some portion of the natural cash flows of an instrument for a different set of cash flows. (*i.e.*, interest rate swaps).
- Over-the-counter/exchange traded options or futures (*i.e.*, option contracts, futures contracts).
- Collateralized mortgage obligations, inverse floating rate notes, range index notes, non-money market index based notes, dual index notes, index amortizing notes, inverse multi-index bonds, stepped inverse index bonds, inverse index bonds.

Securities that are **not** considered derivatives and that are authorized investments for TexPool Prime include the following:

Treasury Bills, Treasury Notes, Treasury Bonds, Treasury Strips, repurchase agreements, reverse repurchase agreements, U.S. agency notes with a defined maturity and fixed coupon rate, U.S. agency discount notes, money market index Treasury and agency variable rate notes (*i.e.*, floating rate notes tied to money market indices such as three and six month Treasury Bills; one, three, and six month London Interbank Offering Rate [LIBOR]; the Secured Overnight Financing Rate [SOFR]; Fed Funds; one year Constant Maturity Treasury; prime rate; and commercial paper composite); U.S. agency step-up notes and any authorized investment that is callable prior to its final maturity.

IV. ADMINISTRATIVE GUIDELINES

A. COMPETITIVE BIDDING

TexPool Prime trades, purchases, and sales are done on a best execution basis through a documented competitive bidding process. The broker/dealers used for TexPool Prime are those approved by the Comptroller and the Trust Company and in compliance with the Comptroller rules.

B. SAFEKEEPING

All eligible book-entry securities whether purchased outright or under repurchase agreements, are held in a separate custodial account at the Federal Reserve Bank in the name of the TexPool Portfolios or in an independent third party institution designated by Federated on behalf of the TexPool Portfolios. All securities not held in book entry form are held at an independent third-party institution designated by Federated on behalf of the TexPool Portfolios. Third party institutions must issue original safekeeping receipts to the Investment Manager.

C. AUTHORIZED PERSONNEL

The Investment Manager personnel authorized to buy and sell investment instruments, send and receive securities, and make fund transfers and other types of related investment transactions are directly supervised by senior investment management personnel in the Investment Manager's Investment Management Group.

D. DOCUMENTATION

Complete documentation and audit trails are maintained for all investment transactions.

E. MONITORING MARKET PRICE

State Street Bank and Trust, the custodian designated by the Investment Manager (the "Custodian") provides fund accounting services for TexPool Prime and is responsible for marking-to-market the portfolio holdings of TexPool Prime on a daily basis. The Custodian receives electronic transmissions from various pricing vendors in order to determine the individual market price of each security held in TexPool Prime. These electronic transmissions are checked daily for current data and validity of information. The Custodian also performs a reasonability test to determine whether the prices received are within a set tolerance range. In the event that any of the prices fall outside of the range, then these prices are investigated against secondary pricing sources. As a further check, the Investment Manager also monitors the prices of securities held in TexPool Prime, in order to independently determine reasonableness and validity.

The shadow price is the net asset value per share of TexPool Prime, calculated using total investments measured at fair value at the calculation date. TexPool Prime's shadow price is calculated daily.

F. PARTICIPATION AGREEMENTS

Each participant must have a fully executed participation agreement on file with the Trust Company before participating in TexPool Prime.

G. DEPOSIT AND WITHDRAWAL DEADLINES

See separate TexPool Prime Operating Procedures for detailed deposit and withdrawal deadlines.

H. REPORTING AND DISCLOSURE

The Act requires that public fund investment pools provide basic information regarding the pool's investments and operations. The pool is to provide the investment officer, or other authorized representative of a participating entity, disclosure information in an Information Statement. The required disclosure items are listed in the Act. This information is provided to all participants. Further, to maintain eligibility to receive funds from and invest funds on behalf of the pool's participants, TexPool Prime must furnish investment confirmations and a monthly report disclosing certain information. Finally, the Comptroller requires that TexPool Prime be audited annually by an independent auditor.

F. AUTHORIZED DEALERS

The Comptroller maintains a list of approved dealers and brokers (collectively, "dealers") authorized to provide investment services. All dealers who desire to become qualified bidders for investment transactions for TexPool Prime must be on the approved list. The Comptroller annually reviews the financial condition and registration of the qualified dealers and revises the approved list as needed.

G. ETHICS AND CONFLICT OF INTEREST

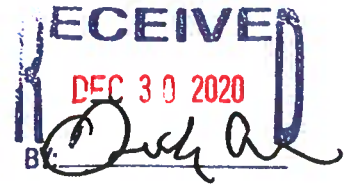
The Comptroller requires the Investment Manager and its staff that are involved with making investment decisions for or executing trades on behalf of TexPool Prime to disclose any personal or business relationship with a broker/dealer seeking to sell investments to TexPool Prime. These employees are also required to refrain from personal business activity that could conflict with the proper execution and management of the investment program or that could impair their ability to make impartial decisions. The Investment Manager's Compliance Officer is required to file a quarterly statement with the Trust Company evidencing compliance with foregoing matters by the Investment Manager and its employees.

Moreover, agents, advisors, and contractors providing services in connection with the custody, management, and investment of public funds under a contract with the Comptroller are required to at all times avoid any actual or apparent conflict of interest with respect to the custody, management, and investment of public funds. For purposes of this investment policy, a conflict of interest refers to any circumstances in which an agent, advisor, or contractor who, in the context of duties under its contract with the Comptroller, has interests that are or may become inconsistent with the interests of the agent, advisor, or contractor with respect to other duties, contractual or otherwise.

Exhibit B

Section 6.02. Policy of Securing Deposits of District Funds

**Assurance that FDIC insurance is available for District Funds Deposited
BancorpSouth**



888-797-7711

<https://www.bancorpsouth.com/FDIC>

FDIC Deposit Insurance Coverage

The Federal Deposit Insurance Corporation (FDIC) is an independent agency of the United States government that protects the funds depositors place in banks and savings associations. FDIC insurance is backed by the full faith and credit of the United States government. Since the FDIC was established in 1933, no depositor has ever lost a single penny of FDIC-insured funds.

FDIC insurance covers all deposit accounts, including checking and savings accounts, money market deposit accounts and certificates of deposit. FDIC insurance does not cover other financial products and services that banks may offer, such as stocks, bonds, mutual fund shares, life insurance policies, annuities or securities.

The standard insurance amount is \$250,000 per depositor, per insured bank, for each account ownership category.

The FDIC provides separate coverage for deposits held in different account ownership categories. Depositors may qualify for more coverage if they have funds in different ownership categories and all FDIC requirements are met. (For details on the requirements, go to www.fdic.gov/deposit/deposits.)

Notice of Expiration

NOTICE OF EXPIRATION OF THE TEMPORARY FULL FDIC INSURANCE COVERAGE FOR NONINTEREST-BEARING TRANSACTION ACCOUNTS

By operation of federal law, beginning January 1, 2013, funds deposited in a noninterest-bearing transaction account (including an Interest on Lawyer Trust Account) no longer will receive unlimited deposit insurance coverage by the Federal Deposit Insurance Corporation (FDIC). Beginning January 1, 2013, all of a depositor's accounts at an insured depository institution, including all noninterest-bearing transaction accounts, will be insured by the FDIC up to the standard maximum deposit insurance amount (\$250,000), for each deposit insurance ownership category.

For more information about FDIC insurance coverage of noninterest-bearing transaction accounts, visit: <http://www.fdic.gov/deposit/deposits/unlimited/expiration.html>

Please visit [fdic.gov](http://www.fdic.gov) for additional information regarding FDIC insurance.

FDIC Insured