Texas Commission on Environmental Quality

Notice of Application and Preliminary Decision for Municipal Solid Waste Permit Amendment

Proposed Permit No. 1522B

Application and Preliminary Decision. The City of Victoria, 700 Main Center, Suite 124, Victoria, Texas 77902, in Victoria County, has applied to the Texas Commission on Environmental Quality (TCEQ) for a permit amendment to authorize the lateral and vertical expansion of the landfill, including the option for below-grade disposal of Class 1 Non-Hazardous Industrial Solid Waste with the lateral expansion. This application will extend the life of the existing landfill. The facility is located at 18545 FM 1686, Victoria, Texas, 77905 in Victoria County, Texas. The following link to an electronic map of the site or facility's general location is provided as a public courtesy and is not part of the application or notice: https://arcg.is/1uOq00. For exact location, refer to application.

The TCEQ Executive Director has reviewed this action for consistency with the goals and policies of the Texas Coastal Management Program (CMP) in accordance with the regulations of the Coastal Coordination Council and has determined that the action is consistent with the applicable CMP goals and policies.

The TCEQ Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, Executive Director's preliminary decision, and draft permit are available for viewing and copying at the Victoria Public Library, 302 North Main Street, Victoria, Texas 77901, in Victoria County. The permit application may be viewed online at https://info.burnsmcd.com/tceq-permits-city-of-victoria-landfill.

Public Comment/Public Meeting. You may submit public comments or request a public meeting about this application. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. TCEQ holds a public meeting if the Executive Director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

Opportunity for a Contested Case Hearing. After the deadline for submitting public comments, the Executive Director will consider all timely comments and prepare a response to all relevant and material, or significant public comments. **Unless the application is directly referred for a contested case hearing, the response to comments and the Executive Director's decision on the application will be mailed to everyone who submitted public comments and to those persons who are on the mailing list for this application. If comments**

are received, the mailing will also provide instructions for requesting a contested case hearing or reconsideration of the Executive Director's decision. A person who may be affected by the proposed facility is entitled to request a contested case hearing from the commission. A contested case hearing is a legal proceeding similar to a civil trial in a state district court.

To Request a Contested Case Hearing, You Must Include The Following Items in Your Request: your name, address, phone; applicant's name and permit number; the location and distance of your property/activities relative to the facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; a list of all disputed issues of fact that you submit during the comment period; and the statement " [I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify by name and physical address an individual member of the group who would be adversely affected by the facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are relevant to the group's purpose.

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting. The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn.

If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law that are relevant and material to the Commission's decision on the application submitted during the comment period.

Executive Director Action. The Executive Director may issue final approval of the application unless a timely contested case hearing request or request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the Executive Director will not issue final approval of the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

Mailing List. If you submit public comments, a request for a contested case hearing, or a reconsideration of the Executive Director's decision, you will be added to the mailing list for this application to receive future public notices mailed by the Office of the Chief Clerk. In addition, you may request to be placed on: (1) the permanent mailing list for a specific applicant name and permit number; and/or (2) the mailing list for a specific county. To be placed on the permanent and/or the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

Information Available Online. For details about the status of the application, visit the Commissioners' Integrated Database (CID) at www.tceq.texas.gov/goto/cid. Once you have access to the CID using the above link, enter the permit number for this application, which is provided at the top of this notice.

Agency Contacts and Information. All public comments and requests must be submitted within 30 days from the date of newspaper publication of this notice either electronically at www14.tceq.texas.gov/epic/eComment/ or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name,

phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the TCEQ's Public Education Program, Toll Free, at 800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en español, puede llamar al 800-687-4040.

Further information may also be obtained from the City of Victoria at the address stated above or by calling Mr. Darryl Lesak, Director of Environmental Services at (361) 485-3381.

Issued Date: September 5, 2023

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PROGRAMS

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- GROUNDWATER RESOURCE PLANNING (/GROUNDWATER-RESOURCE-PLANNING)

Groundwater Conservation

The District promotes conservation and preservation of the water resources within its jursidiction through the Groundwater Conservation Program. The District promotes activities such as rainwater harvesting, efficient use of groundwater, conjunctive use of groundwater and surface water, prevention of subsidence, prevention of waste, brush management, recharge enhancement through the completion of related projects during each fiscal year.

The Management Plan of the District defines groundwater conservation as "the activity and practice of seeking to use a groundwater resource in a manner that appropriately balances the impacts associated with consuming the resource and preserving the resource for the future." The District under takes many activities to achieve the "appropriate balance" between

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groundwater use and groundwater preservation including 1) establishing conservative desired future conditions for the relevant aquifers within the jurisdiction of the District , 2) adopting rules that allow for limited groundwater production, 3) monitoring water levels and water quality of groundwater resources within the jurisdiction of the District, and 4) evaluating aquifer conditions using scientifically-credible methods.

Contact Tim Andruss, General Manager to discuss matters related to groundwater conservation at:

- phone: (361) 579-6863
- email: tim.andruss@vcgcd.org

Information regarding ways to conserve groundwater can be accessed at the following web address:

- Groundwater Foundation: https://www.groundwater.org/action/home/conserve.html (https://www.groundwater.org/action/home/conserve.html);
- Texas Water Development Board: https://www.twdb.texas.gov/conservation/index.asp (https://www.twdb.texas.gov/conservation/index.asp);

Promotion of Rainwater Harvesting: the District encourages all water users to investigate rainwater harvesting as a means of developing alternate water supplies. Additional information regarding rainwater harvesting can be viewed at the following website of the Texas A&M Agrilife Extension:
rainwaterharvesting.tamu.edu/rainwater-basics/ (https://rainwaterharvesting.tamu.edu/rainwater-basics/).

Promotion of Efficient Use of Groundwater: the District encourages all users of groundwater to investigate methods of increasing water usage efficiency. Additional information regarding water efficiency opportunities can be viewed at the following website of the Office of Energy Efficiency and Renewable Energy:
www.energy.gov/eere/femp/water-efficient-technology-opportunity-sprinkler-automatic-shut-devices (https://www.energy.gov/eere/femp/water-efficient-technology-opportunity-sprinkler-automatic-shut-devices).

Promotion of Conjunctive Use of Groundwater and Surface Water: the District encourages water users to examine conjunctive use practices when considering the development of water supply projects that involve groundwater resources. The combined use of groundwater

resources with surface water may optimize the beneficial characteristics of each source and conserve and preserve groundwater resources. Additional information regarding innovative water technologies related to conjunctive use can be viewed at the following website of the Texas Water Development Board:
www.twdb.texas.gov/innovativewater/ (https://www.twdb.texas.gov/innovativewater/)

Promotion of Subsidence Prevention: the District encourages groundwater producers to investigate causes of subsidence, the vulnerability of areas within the District to subsidence caused by groundwater production, and methods of developing groundwater resources to prevent subsidence caused by or contributed to by their groundwater production. Additional information regarding subsidence can be viewed at the following website of the Texas Water Development Board:
ww.twdb.texas.gov/groundwater/models/research/subsidence/subsidence.asp (https://www.twdb.texas.gov/groundwater/models/research/subsidence/subsidence.asp)

Promotion of Brush Management: the District encourages landowners to investigate the brush management as a means of potentially enhancing recharge of groundwater resources. Additional information regarding brush management can be viewed at the following website of the Texas State Soil and Water Conservation Board:
https://www.tsswcb.texas.gov/programs/water-supply-enhancement-program (https://www.tsswcb.texas.gov/programs/water-supply-enhancement-program)

Additional information regarding brush management and the effect on water resources can be viewed at the following website of the United States Geological Survey:
www.usgs.gov/centers/ot-water/science/effects-huisache-removal-evapotranspiration?qt-science_center_objects=0#qt-science_center_objects (https://www.usgs.gov/centers/ot-water/science/effects-huisache-removal-evapotranspiration?qt-science_center_objects=0#qt-science_center_objects)

Promotion of Recharge Enhancement: the District encourages large-scale groundwater producers to investigate strategies to enhance recharge, including aquifer storage and recovery projects, as a means of conserving and preserving groundwater resources through conjunctive use. Additional information regarding aquifer storage and recovery can be viewed at the following website of the Texas Water Development Board:
www.twdb.texas.gov/innovativewater/asr/index.asp (https://www.twdb.texas.gov/innovativewater/asr/index.asp)

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October 16, 2023

Dear Board of Directors, Victoria County Groundwater Conservation District,

I am writing to express our deepest gratitude for your generous sponsorship of our recent field trips held on September 28th and 29th at the Invista Wetlands. Thanks to your support, 53 students from 4th grade and 56 students from 5th grade at Torres Elementary were able to participate in this enriching educational experience.

During the trip, our students engaged in a series of activities aligned to the TEKS related to water conservation. Specifically, the students participated in the Aquatic life Zooplankton and Protists activity, where they used nets to collect aquatic life forms, examined pond water under microscopes, identified organisms, and illustrated their findings with colored pencils. Additionally, they took part in the Soil Permeability Activity, testing various types of soil for percolation times, properties such as texture, and capacity to retain water. These activities directly supported the following TEKS:

4.7(A): Examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants.

4.7(C): Identify and classify Earth's renewable resources, including air, plants, water, and animals, and nonrenewable resources, including coal, oil, and natural gas, emphasizing the importance of conservation.

4.8(B): Describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process

I also wanted to take a moment to commend Mr. John Snyder, our wetlands specialist, for his outstanding work with our students. His expertise and dedication significantly enhanced our students' understanding of the Science TEKS. His vast knowledge will make a lasting impression on our students, and we are truly fortunate to have him as part of our educational community.

Thank you,
Jamie Mills
Torres Elementary Instructional Coach

To: Board of Directors, Victoria County Groundwater Conservation District
RE: Invista Wetlands Field Trip Sponsorship

Date of trip: September 7, 2023 & September 8, 2023
Campus: Schorlemmer Elementary
Grade Levels: 4th & 5th Grade Students
Number of Students in Attendance: 127 students total

Activities:
Students were led around the property where the presenter helped them identify various plants and animals. Students also learned about the wetlands as a habitat for various animals and plants. Additionally, the presenter shared with students how the wetlands conserve the water from the water cycle and use it in the ponds/rivers on site. Students participated in a soil lab that gave them a deeper understanding of how important i is for plant life as well as animal life to thrive in an environment.

TEKS Connection:
We are pleased to report that the recent field trip undertaken by our students strongly supported the appropriate Texas Essential Knowledge and Skills (TEKS) related to water conservation, with a specific tie-in to groundwater as outlined in TEKS standards 4.7(C) and 4.8(B).

During the excursion, students actively engaged in activities that allowed them to identify and classify Earth's renewable resources, including air, plants, and water, emphasizing the critical importance of conservation, as highlighted in TEKS standard 4.7(C). Furthermore, the students had the opportunity to explore the continuous movement of water above and on the surface of Earth through the water cycle, as well as to comprehend the pivotal role of the Sun as a major source of energy driving this process, aligning with TEKS standard 4.8(B).

Through hands-on experiences and interactive learning, our students gained a profound understanding of the significance of groundwater conservation and its interconnectedness with Earth's natural systems. This field trip not only met the prescribed TEKS requirements but also inspired our students to appreciate the importance of responsible water usage and conservation in their daily lives. The activities conducted during the trip effectively reinforced the concepts outlined in the TEKS standards, enhancing the overall educational experience for our students.

Teacher Comments:
Mr. Snyder was very well informed about the wildlife and plant life at the wetlands. He was very kind and patient with all of our students which allowed for students to feel comfortable asking questions and interacting with each other throughout the visit.

We all enjoyed Mr. Schnyder and his patients with the students. He is so wonderful and knowledgeable and made the experience so fun. You can really tell that his many years of experience have him so prepared for when the students come to see him.

Again, a huge thanks for the support. Your generosity provided a transformative educational experience, fostering a deeper understanding of environmental conservation. Thank you for enriching the lives of our students and supporting their learning journey.

Thanks again,
Schorlemmer Elementary

PROPOSAL

Technical Services for Development and Adoption of Desired Future Conditions for Aquifers within Groundwater Management Area 15

Prepared for: GMA 15 **Joint Planning Committee**

Prepared by: INTERA

SEPTEMBER 15, 2023

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FIGURES

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1.0 Introduction

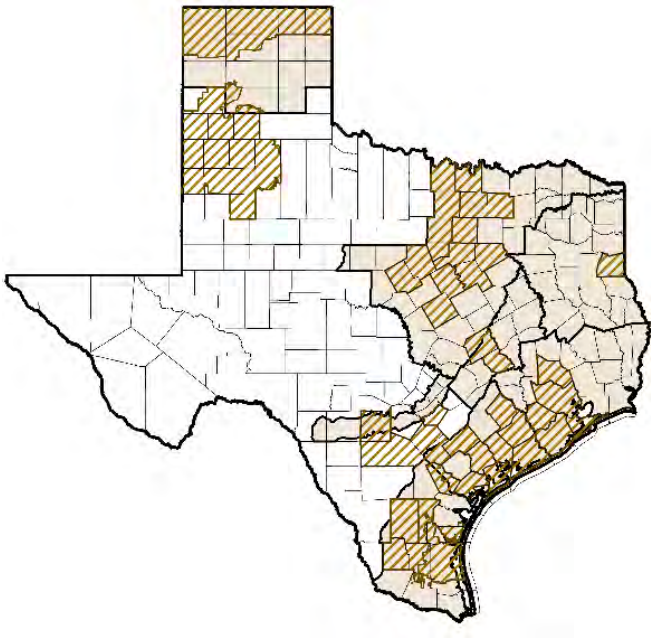
1.0 Introduction

Groundwater Management Area 15 (GMA 15) is a joint planning entity, consisting of 14 groundwater conservation districts (GCDs), that serves all or parts of Aransas, Bee, Calhoun, Colorado, DeWitt, Fayette, Goliad, Jackson, Karnes, Lavaca, Matagorda, Refugio, Victoria, and Wharton counties in Texas. GMA 15 was created to provide for the conservation, preservation, and protection of groundwater resources and to control subsidence caused by the withdrawal of groundwater within its boundaries. GMA 15 is organized and operates under authority established in HB 1763, 79th Texas Legislature, and Chapters 35 and 36 of the Texas Water Code (TWC).

GMA 15 is seeking a highly qualified consultant to assist its Joint Planning Committee in all activities related to the development, evaluation, adoption, and defense of desired future conditions (DFCs) for aquifers within its boundaries. As described in the Request for Proposals (RFP), these activities include: adjusting and running the numerical groundwater model relevant to the GMA 15 area, which is the Texas Water Development Board (TWDB) groundwater availability model (GAM); evaluating and documenting the factors to be considered when adopting DFCs; developing an explanatory report detailing the above analyses; and providing any required technical support if any of the DFCs are challenged by petition to the TWDB.

INTERA provides the expertise and experience needed to assist GMA 15 in joint planning. Originally established in 1974 as a technology-based consulting firm specializing in hydrogeologic modeling, INTERA is a Texas corporation headquartered in Austin, Texas. Our Water Resources Group has played an integral role in developing GAMs for the TWDB and performing hydrogeologic studies and other technical analyses to assist the planning efforts of Texas GCDs and GMAs. INTERA offers GMA 15 several key assets that will enable us to not only provide the highest-quality technical services and products but do so in a cost-effective manner in accordance with all schedule requirements. These assets are introduced below and described in more detail throughout our proposal.

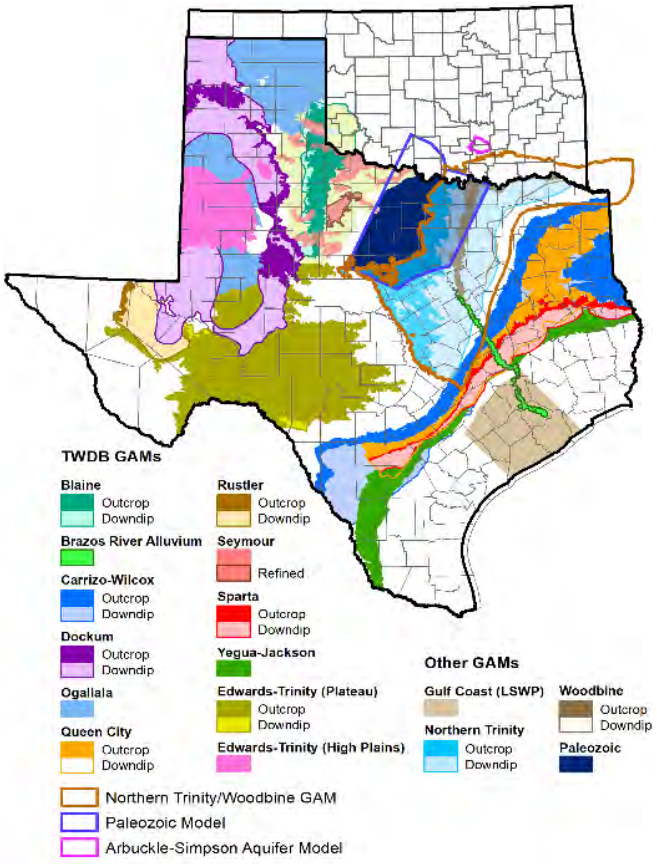
- **Proven Expertise and Experience in all Support Areas Required by GMA 15.** Over the last 15 years, INTERA has provided technical support services to GCDs and similar organizations across Texas, including 16 that manage the Gulf Coast Aquifer. For these districts, our services have included: preparing management plans, groundwater rules, and guidance documents; designing monitoring well networks; providing GCD representation during GMA meetings; reviewing application permits; developing groundwater databases; organizing and conducting public meetings; directing and implementing field studies/well construction; evaluating alternative DFCs; responding to GMA petitions; and conducting technical and public workshops. INTERA's experience supporting GMAs includes the development, evaluation, adoption, defense, and documentation of DFCs for GMA 15 during the previous planning cycle; technical and joint planning support for seven other GMAs; and DFC development and adoption support for GMA 14 for the current planning session. INTERA's modeling expertise and experience in Texas is unmatched. We have been selected by TWDB to lead the development of more models under their Groundwater Availability Modeling Program than any other firm or organization. We also conducted a 3-year study to re-interpret and re-define the Gulf Coast Aquifer System hydrostratigraphy from the Rio Grande into western Louisiana. As part of the Lower Colorado River Authority (LCRA) – San Antonio Water System (SAWS) Water Project (LSWP), our personnel performed a detailed review of the field data and conceptualization of the Gulf Coast Aquifer used to develop and calibrate the GAMs for the southern, central, and northern portions of the aquifer. This review supported development of the LSWP model, and included a detailed comparison of the construction, calibration, and predictive capabilities of all the Gulf



The experience of INTERA's personnel in providing technical services for a number of GCDs and GMAs, shown on the map above, to support their efforts in managing regional water resources and participating in the joint planning process makes us well suited to provide technical consulting services for GMA 15.

Coast Aquifer models. Dr. Steve Young, our proposed Project Manager for this work with GMA 15, led the development of the LSWP model with key support from several additional INTERA personnel. Through all of this experience, we bring the expertise and capabilities to meet the scope of work requirements identified by GMA 15. Additional details on INTERA's experience relevant to this work with GMA 15 are provided in Sections 3.0 and 4.0 of our proposal.

- **An Outstanding Team of Management and Technical Personnel.** INTERA's work for GMA 15 will be led by Steve Young, PhD, PE, PG. Dr. Young is a Principal Hydrogeologist at INTERA with 35 years of experience in the groundwater industry that includes managing a wide range of water resource projects throughout Texas. He was the project manager for an INTERA team that assisted GMA 15 through the 2nd Joint Planning Cycle, and he was the primary author of the GMA 15 explanatory report. On behalf of Post Oak Savannah GCD, Dr. Young also managed the preparation of GMA 12's explanatory report. He is also the senior technical advisor for the INTERA team that has been retained by GMA 14 to assist with joint planning and to write the explanatory report for the 2020 planning cycle. Over the past five years, Dr. Young has also managed a TWDB HB30 study of brackish groundwater in the Gulf Coast Aquifer, separate land subsidence studies for GCDs in GMAs 15 and 16, and studies of a brackish groundwater and land subsidence for the subsidence districts in GMA 14. Our proposed project team also includes technical specialists like Matt Uliana, PhD, PG, Jevon Harding, PG, and Tingting Yan. Collectively, these staff bring over 35 years of experience in conducting geologic and hydrogeologic studies and modeling analyses to support groundwater resource development, management, and protection in Texas. Additional details on the expertise and experience of the INTERA Team's proposed personnel are provided in Section 3.0.
- **Cost Efficiency Through Effective Resource Utilization.** Technical support under this contract with GMA 15 will be provided on a task-by-task basis. INTERA has been working under similar task-order based contracts for over 40 years. To deliver services under these contracts, we have developed effective project control systems and processes that ensure work is performed on schedule and at, or below, the agreed-upon budget. We understand that every dollar spent must provide value in meeting GMA 15's duties and overall mission of effectively managing and protecting groundwater resources. In addition to working directly as GMA 15's consultant during the second planning cycle, INTERA has performed work for 12 GCDs in GMA 15. Our experience and expertise in GMA 15 will help us to work cost efficiently.



As shown on the map above, INTERA's modeling expertise has been put to work in developing multiple aquifer GAMs under the TWDB's Groundwater Availability Modeling Program and for other water resource projects.

Perhaps most importantly, INTERA and all our proposed personnel are firmly committed to making this work for GMA 15 a top priority. We are confident that the Joint Planning Committee's review of our proposal will confirm INTERA's exemplary skills, capacity, and desire to deliver high quality and timely professional services to support the development and adoption of DFCs.

2.0 Approach to Completing Scope of Work

INTERA

2.0 Approach to Completing Scope of Work

GMA 15 is seeking a technical consultant to assist in developing reasonable and defensible DFC(s) and the MAG for the aquifers within the GMA boundaries. INTERA's approach for assisting GMA 15 to accomplish the statutory requirements of Chapter 36 TWC include: (1) a project coordination meeting with both GMA 15 and the TWDB with a specific goal of having the TWDB develop a baseline future scenario simulation using the newly developed GAM for GMAs 15 and 16, (2) presenting information regarding the nine factors listed in the Texas Water Code (TWC) §36.108(d) that need to be considered when adopting a DFC; (3) facilitating discussions on achieving the "balance test" between the highest practicable level of groundwater production and the conservation and protection of groundwater; (4) performing GAM simulations; and (5) preparing the DFC explanatory report consistent with Chapter 36 TWC. We are committed to providing services in a cost-effective manner, and wherever possible, we will coordinate with GCDs and TWDB to provide necessary information (as opposed to us having to locate and assimilate data).

2.1 Project Coordination and Management

INTERA will schedule and conduct a project coordination meeting with GMA 15 to establish the goals and priorities for the work, the general procedures for communications, the roles and responsibilities of the GMA 15 member GCDs and project personnel, modeling strategy, methods used to perform and analyze model runs, approximate budgets, and estimated deliverable timelines. We propose that the kickoff meeting cover the following four issues: project management tasks, evaluation and application of the new GAM for GMA 15 and 16, project technical tasks, and ways to minimize project costs. INTERA recommends that the kickoff meeting occurs after the TWDB has provided GMA 15 with a MAG simulation using the updated GAM.

During the kickoff meeting, several project management topics will be discussed including the roles and responsibilities of INTERA and member GCDs, the guidelines for communicating project information, and the designation of primary contacts for all member GCDs. Additional items for discussion include goals and priorities for each GCD, tentative budgets, schedules, process for communicating with the public, and progress reports., and potential technical and financial implications associated with using the updated GAM (Shi and others, 2022).

Similarly, several technical topics will be discussed including evaluation of the updated GAM for future applications. Prior to finalizing the cost for performing the work for GMA 15, INTERA recommends that a revaluation of the differences between the old and updated GAM. In addition, INTERA wants to review the baseline run developed using GMA 15's current MAGs and the updated GAM.

Potential additional items for discussion include guidelines for addressing non-district areas, development of pumping distributions, tools used for processing model output (water levels and budgets), and documentation of model modifications and simulation results. To the maximum extent that is practical, the joint planning meetings and the explanatory report will be built from the information and reports developed during the last joint planning period.

2.2 Approach to Tasks

With the passage of Senate Bill 660 in the 82nd Texas Legislature, GMAs must develop comprehensive explanatory reports detailing a number of considerations when proposing DFCs for adoption. These considerations include (1) how groundwater uses and conditions vary across the aquifer, (2) the water supply needs and management strategies in the State Water Plan, (3) hydrological conditions including recoverable storage (provided by TWDB), average annual recharge, inflows, and discharge, (4) environmental impacts including spring flow and groundwater-surface water interaction, (5) possible subsidence impacts, (6) socioeconomic impacts, (7) impacts on private property rights, (8) the feasibility of achieving a particular DFC, and (9) any other relevant information.

Senate Bill 660 also requires that newly adopted DFCs 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." To assist GMA 15 in adopting a reasonable and defensible DFC, INTERA will coordinate with member GCD representatives to establish a broad range of potential DFCs and pumping scenarios to consider. Using an updated model, we will then develop and document the interrelationships among pumping, the impacts on the aquifer such as drawdown, and the required considerations listed above. This analysis will be included in the final explanatory report required once the DFC is formally adopted.

Consistent with the level of legal review desired by GMA 15, established during the project coordination meeting, the explanatory report and DFC resolution may be reviewed through meeting with TWDB and attorneys representing GCDs in GMA 15. Once the DFC is formally adopted, this report, along with all relevant GAM files, will be provided to GMA 15 for submission to TWDB and use in developing MAG.

During the 3rd planning cycle, INTERA led a team of consultants in preparing the explanatory reports for GMA 16, GMA 14, GMA 12 and GMA 1. INTERA was the sole author of the explanatory report for GMAs 16 and 14. In preparing the explanatory reports, we worked closely with other state agencies such as the TWDB to streamline the data collection and analysis required for preparing the explanation report. Below, we describe our approaches, methods, and activities INTERA will employ to complete the 14 tasks that will help GMA 15 develop DFCs and an explanatory report.

Task 1 – Attend GMA 15 Meetings. In addition to the kick-off meeting and a meeting to discuss INTERA's evaluation of the updated GAM, we propose to attend up to seven GMA 15 meetings during the 4th Joint Planning Cycle. If GMA 15 desires INTERA to attend more than seven meetings, we will adjust our proposed cost for this task accordingly. At each meeting, we will present results of our analyses, any obstacles or issues encountered, and the planned activities for the next quarter. Prior to each meeting, INTERA will provide GMA 15 members with copies of our presentation materials. GMA 15 will be responsible for preparing minutes for all GMA 15 meetings Documentation of meetings will be consistent with Section 1.3 of the explanatory report developed for the most recent joint planning period that was approved by GMA 15-member districts.

Task 2 – Model Groundwater Availability Associated with Proposed DFCs. Our experience helping GMA 15 develop DFCs for the 2nd planning cycle, and our work with GMAs 14 and 16 during the 3rd planning cycle makes INTERA well-prepared to lead discussions on developing DFCs and to perform GAM simulations that are consistent with TWDB requirements. Following the results of Tasks 3, 4, and 5 (discussed below), INTERA will work with GMA 15 to develop pumping distributions using protocols and methods that we implemented for GMA 15 during the last planning cycle. Prior to using these protocols, we will coordinate with GMA 15 to streamline the process to help avoid potential problems. Our cost estimate for this task is based on performing up to five DFC runs that use not more than two new pumping files developed by GMA 15 that change the spatial distribution of pumping. Model runs that involve using multiplication factors for pumping will not be considered as a new pumping file. To generate a new pumping file with different well locations, each GCD member will be responsible for providing a Microsoft Excel (spreadsheet) file that assigns the pumping rate and schedule to a specific node in the updated GAM. For Districts that want to augment the locations of production wells in the TWDB's benchmark simulation, INTERA will provide the shapefile of the GAM grid (i.e., possible well locations). Results from this task will be documented for GMA 15 consistent with Sections 2.0, 3.0 and 4.0, respectively, of the explanatory report developed by INTERA for GMA 15 for the 2nd Joint Planning Cycle. Committee review comments on a draft will be incorporated into the final report.

Task 3 – Document Aquifer Uses and Conditions within GMA 15 (36.108(d)(1)). Tasks 3 through 11 pertain to each of the nine "factors" in Chapter 36 of the TWC that must be considered when proposing a DFC for adoption. For this task, we propose to evaluate uses and conditions across the Gulf Coast Aquifer in GMA 15 that are documented in the 2020 explanatory report for GMA 15 and in county and state reports. In addition, INTERA will solicit input from individual GCDs to fill data gaps and to address areas of particular interest to GMA 15. A goal of this task is to identify aquifer conditions or uses that substantially differ by geographic area. Results from this task will be documented for GMA 15 consistent with Section 5.1 and Appendices G and H of the explanatory report that INTERA developed for GMA 15 for the 2nd Joint Planning Cycle.

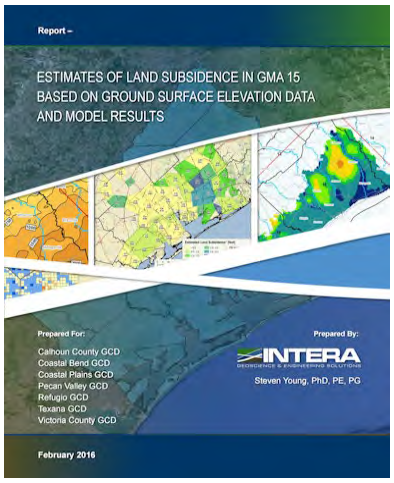
Task 4 – Document Water Supply Needs and Water Management Strategies in the State Water Plan (36.108(d)(2)). INTERA will use the information presented during the 3rd Joint Planning Cycle as a baseline for the 4th Joint Planning Cycle presentation and explanatory report. Where appropriate, we will augment the information with data from the most recent State Water Plan (SWP). As part of the SWP, water supplies and demands are identified along with management strategies for meeting any unmet demands. These needs and strategies, along with all other estimates developed as part of the planning process, are compiled in a database maintained by the TWDB. INTERA will acquire the most recent version of this database for the 2022 SWP and gather the water supply needs and water management strategies relevant to the groundwater resources of GMA 15 that must be considered when developing DFCs. Results from this task will be documented for GMA 15 consistent with Section 5.2 of the explanatory report developed by INTERA for GMA 15 for the 2nd Joint Planning Cycle.

Task 5 – Document Hydrological Conditions within GMA 15 (36.108(d)(3)). INTERA will use the information presented during the 3rd Joint Planning Cycle as a baseline for the 4th Joint Planning Cycle presentation and explanatory report . A basic understanding of the hydrological and hydrogeological conditions in an area is necessary to evaluate the capacity of an aquifer to support pumping and the likely impacts of the pumping. Conditions including proximity to surface water features such as rivers,

reservoirs, and springs, the presence or absence of confining units, and the suitability of the surface sediments to accept recharge from precipitation can all strongly influence the availability of groundwater. For this task, we will review the updated GAM for GMA 15 and 16 to update the hydrological and hydrogeological conditions for each county in GMA 15. We will also coordinate with the TWDB to confirm our approach and to acquire the estimated total recoverable storage for the aquifer, which the TWDB is required to provide as described in TWC §36.108(d)(3). Using this information, we will identify areas in each county and in GMA 15 as a whole where hydrological conditions differ substantively from other areas and describe the implications of these differences for aquifer management. Results will be documented for GMA 15 consistent with Section 5.3 and Appendix I of the explanatory report developed by INTERA for GMA 15 for the 2nd Joint Planning Cycle. Committee review comments on a draft will be incorporated into the final explanatory report.

Task 6 – Document Environmental Impacts of Proposed DFCs (36.108(d)(4)). INTERA will use information presented during the 3rd Joint Planning Cycle as a baseline for the 4th Joint Planning Cycle presentation and explanatory report. Although groundwater and surface water are regulated separately in Texas, they are interconnected as part of the larger hydrologic system. Groundwater commonly provides base flow to perennial streams and rivers while large reservoirs can change conditions in adjacent aquifers. Groundwater pumping can alter this relationship and lead to environmental impacts such as reduced flow from springs, reduced outflow to streams and rivers, and potentially induced flow into the aquifer from surface reservoirs. These dynamic relationships are one of the key reasons to model groundwater systems, as these interactions are very difficult to quantify using simpler methods. To accomplish this task, INTERA will use information from the GAM runs performed as part of Task 2 to evaluate the expected environmental impacts for the various DFCs under consideration. Results from this task will be documented for GMA 15 consistent with Section 5.4 of the explanatory report developed by INTERA for GMA 15 for the second planning cycle. Committee review comments on a draft will be incorporated into the final explanatory report.

Task 7 – Document Impacts on Subsidence of Proposed DFCs (36.108(d)(5)). INTERA will use the information presented during the 3rd Joint Planning Cycle as a baseline for the 4th Joint Planning Cycle presentation and explanatory report. We will build on the work related to subsidence previously conducted by INTERA for GCDs in the Texas Gulf Coast and the TWDB tool that calculates risk of subsidence for major and minor aquifers. Among the key expertise that INTERA offers is the work associated with conducting field measurements and predictions of land subsidence in GMA 15, completing two reports on land subsidence with subsidence districts in GMA 14, and predictions of land subsidence for hypothetical drawdowns in GMA 15 funded by four GCDs. Results from this task will be documented for GMA 15 consistent with Section 5.5 of the explanatory report developed by INTERA for GMA 15 for the second planning cycle. Committee review comments on a draft will be incorporated into the final explanatory report.



INTERA's experience in conducting and documenting a comprehensive study of land subsidence in GMA 15 will prove invaluable in documenting the impacts of proposed DFCs on subsidence during this cycle of joint planning.

Task 8 – Document Socioeconomic Impacts Reasonably Expected to Occur with the Adoption and Implementation of Proposed DFCs (36.108(d)(6)). INTERA will use the information presented during the 3rd Joint Planning Cycle as a baseline for the 4th Joint Planning Cycle presentation and explanatory report . As described above and in TWC §36.108(d-2), DFCs must balance the competing interests to use the groundwater to support local communities and the economy and conserve the groundwater for future use, minimize subsidence, and maintain springflows and base flows to rivers and streams. Stringent pumping restrictions can lead to near-term socioeconomic impacts related to unmet demand (including changes in population, school enrollment, regional income, and employment), while less restrictive access to groundwater can result in over-pumping and longer-term issues. To perform the socioeconomic analysis, we will review the analysis included in the current state water plan and modify the information where appropriate based on feedback and input from GCDs. INTERA will also prepare and distribute a "socioeconomic" questionnaire to GMA 15 GCDs to help fill data gaps and to provide additional information on topics of interest. Results from this task will be documented for GMA 15 consistent with Section 5.5 of the explanatory report developed by INTERA for GMA 15 for the 2nd planning cycle. Committee review comments on a draft will be incorporated into the final explanatory report.

Task 9 – Document Impacts on the Interests and Rights in Private Property by the Adoption and Implementation of Proposed DFCs (36.108(d)(7)). INTERA will use the information presented during the 3rd Joint Planning Cycle as a baseline for the 4th Joint Planning Cycle presentation and explanatory report. With the passage of S.B. 332 in 2011 by the 82nd Texas Legislature, groundwater is now clearly recognized as the real property of the landowner. As described in TWC Section 36.002, the landowner has the right to drill for and produce groundwater but is subject to regulation by a GCD, including well spacing requirements and, potentially, production limitations. The ownership of the groundwater, therefore, does not entitle the landowner to the right to produce a specific amount of groundwater (TWC 36.002(b)(1)). GCDs must consider the potential impacts of DFCs to private property rights, but must also recognize that, in many cases, the impacts to individuals, if any, will be more strongly driven by the implementation of GCD rules to achieve the DFCs than the DFCs themselves. If significant impacts are projected, we will solicit input from the local GCDs to determine and document the relevance of the potential impact given the different district's rules and management philosophy. Results from this task will be documented for GMA 15 consistent with Section 5.7 of the explanatory report developed by INTERA for GMA 15 for the 2nd planning cycle. They will also be used to augment the discussion of property rights in the explanatory report. Committee review comments on a draft will be incorporated into the final explanatory report.

Task 10 – Document Feasibility of Achieving Proposed DFCs (36.108(d)(8)). GCDs must consider the feasibility of achieving any proposed DFCs. The evaluation of feasibility should consider whether a DFC is physically possible, whether it is within the regulatory authority of the districts to implement rules and policies to achieve it, and whether there are potential practical barriers to achieving the DFCs. The physical possibility of a DFC is typically assessed using the GAM, Because GMA 15 will be using the GAM simulations to evaluate DFCs, any proposed DFCs based on model simulations will meet the requirement that it is physically possible. Results from this task will be documented for GMA 15 consistent with Section 5.8 of the explanatory report developed by INTERA for GMA 15 for the 2nd planning cycle. Committee review comments on a draft will be incorporated into the final explanatory report.

Task 11 – Document Other Information Relevant to Proposed DFCs (36.108(d)(9)). Chapter 36 of the TWC stipulates that GCDs must consider "any other information relevant to specific desired future conditions" not addressed in the factors described in Tasks 3 through 10 above. The level of effort for this task is inherently uncertain. However, we will identify and evaluate any other relevant information for consideration by GMA 15 and work closely with GMA 15 districts to define the analyses necessary to address these issues. Such issues could include management of droughts, distribution of brackish water in the GMA water budgets, addressing known deficiencies in the GAM, and/or uncertainty in the model predictions. Results from this task will be documented, and Committee review comments on a draft will be incorporated into the final explanatory report.

Task 12 – Document Comments and Proposed Revisions Received by Member Districts During Public Comment Period and Public Hearings (36.108(d-2)). Following the proposal of DFCs for adoption, which is tentatively identified as occurring during the 2nd quarter of 2026, GCDs must hold public hearings on the proposed DFCs and solicit public comments and proposed revisions to the DFCs (see TWC §36.108(d-2)). After a minimum 90-day public comment period, GCDs must develop reports summarizing relevant comments, proposed revisions, and the basis for the revisions. To accomplish this task, INTERA will compile the reports from each GCD into a single GMA 15-wide report that includes a table summarizing the types of concerns expressed by the public. This report will be provided to the Committee for review. Particular attention will be focused on the compatibility of proposed revisions to the DFCs and their impacts on the results of Tasks 3 through 11. We will provide technical guidance to GCDs during development of the summary reports. Following feedback by the Joint Planning Committee, the draft report will be finalized and presented to GMA 15.

Task 13 – Development of the DFC Explanatory Report (36.108(d-3)). Once GMA 15 reconvenes to review the public comments and proposed revisions to the DFCs, GMA 15 can formally adopt the DFCs. Following adoption, an explanatory report must be developed that (1) details each DFC, (2) gives the policy and technical justifications for each DFC, (3) documents that the factors in Tasks 3 through 12 were considered and a discusses of how the DFCs impact each factor, (4) tells other DFCs considered and why they were not selected, and (5) provides a summary of public comments and GMA 15's responses. Most of these items will have been thoroughly investigated and documented during completion of the previous tasks. To convey the policy and technical justifications clearly and accurately for the selection of some DFCs over others, we will conduct brief telephone interviews with GCD representatives to supplement the summary reports following public comment. Using this information, along with the results of the previous tasks, we will prepare a draft explanatory

report for review by the Committee that is consistent with the scope and detail presented in the Explanatory Report developed by INTERA for GMA 15 for the 2nd Joint Planning Cycle. After receiving feedback from the Committee on the draft report, we will make any necessary revisions and submit the final explanatory report, along with any updated electronic model files, to GMA 15 for submission to the TWDB.

Task 14 – Technical Support to Committee after Adoption of DFC. If the adopted DFC is petitioned, INTERA will provide technical assistance to the Committee. INTERA will, at no additional costs to GMA 15, evaluate the level of effort and suggest a strategy for responding to the petitions. If INTERA is requested to provide written testimony or perform analyses beyond those performed to prepare the explanatory report as part of GMA 15's response to the petition, then our contract with GMA 15 will need to be amended to include costs for the additional work.

2.3 Schedule, Cost, and Work to be Performed by Other Parties

The are several factors that can have a major impact on the schedule and cost of performing the 14 tasks described above. Perhaps the biggest factor is the updated GAM. Neither INTERA nor GMA 15 currently know how much different its predictions of DFCs will be from the previous GAM when using the MAGs developed during the 3rd round of joint planning. If the updated GAM predictions differ significantly from the previous GAM at different values of drawdown, then considerably more work will be required to develop DFCs. For this reason, INTERA is adding an additional task and meeting to the schedule. The additional task is to review the updated GAM after the TWDB provides a benchmark run using the updated GAM. The additional meeting will occur after INTERA's review of the updated GAM. The purpose of the meeting is to finalize the scope, schedule, and budget for INTERA's services.

INTERA's preliminary schedule for completing the tasks associated with developing and adopting DFCs for aquifers within GMA 15 is shown in **Figure 2-1**. Chapter 36.108 requires GMAs to have DFCs proposed for adoption by the 1st quarter of 2027. To meet this deadline, we are proposing a schedule that enables GMA 15 adoption of the DFCs no later than the 1st quarter of 2026. As the schedule shows, the majority of the work will be accomplished over a 21-month period starting in the 2nd quarter of 2024.

Table 2-1 summarizes the deliverable(s) for each project task, our estimated cost to complete each task, and the total cost for all project tasks. As the table shows, we anticipate that the cost to complete the 14 tasks described in Section 2.2 of our proposal and the additional task to review the updated GAM is $90.000.For the purpose of preparing a cost estimate and schedule, INTERA has made the following five assumptions.

1) The updated GAM will produce predictions for the DFCs based on the current MAGs that are similar to those produced by the previous GAM used in the 3rd planning cycle.
2) GMA 15 will not make major adjustments in the DFCs predicted by TWDB's benchmark DFC run using the updated GAM.
3) No legislation will be enacted during the 4th Joint Planning Cycle that will increase the amount of information and analysis that is required to construct an explanation report.
4) Work will begin in the 4th quarter of 2024 and, by no later than the 2nd quarter of 2026, GMA 15 will propose for adoption DFCs for the relevant aquifers within the management area.
5) GMA will adopt the DFCs no later than December of 2026.

Both Figure 2-1 and Table 2-1 include a task to review the updated GAM and the TWDB benchmark DFC run using the updated GAM. If the two GAMs predict significantly different drawdowns for the same MAG, additional work will likely be required to resolve these differences.

The responsibilities and requirements of other parties in completing the various project tasks, as well as the key assumptions that INTERA has made in developing our costs, are provided in **Table 2-2**. Implicit to the estimated costs for some of the tasks is that the procedure for applying the GAM to develop DFCs will be conducted in a manner similar to the approach and level of sophistication used by GMA 15 in the 2021 Joint Planning Process.

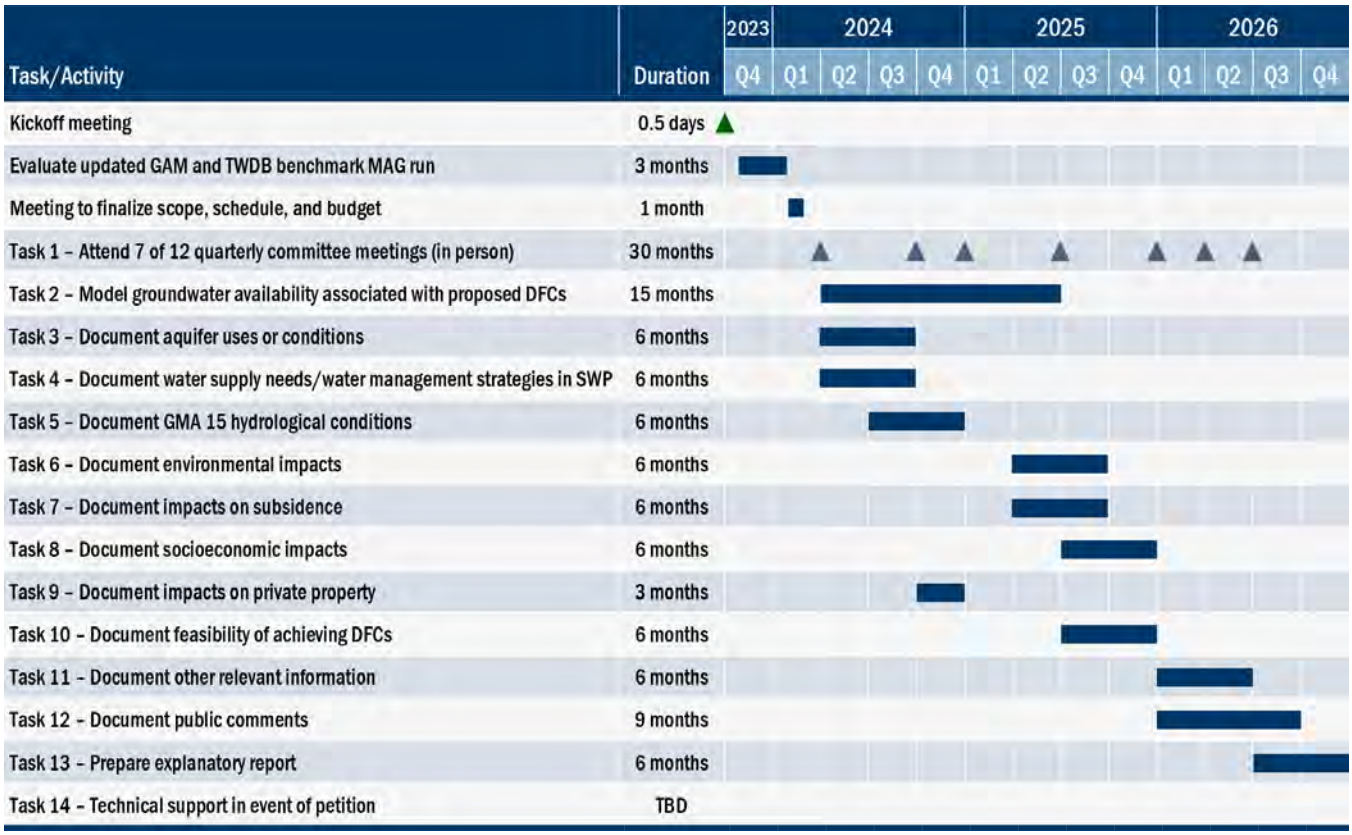


Figure 2-1. Preliminary schedule for developing and adopting DFCs for GMA 15 aquifers

Table 2-1-. Task Deliverables and Preliminary Costs

Task/Activity	Deliverables	Cost
Kickoff Meeting	Contract for GAM evaluation	$1,500
Evaluate Updated GAM and TWDB Benchmark Run with Current MAGs	Presentation of findings	$7,500
Meeting to Establish Final Scope, Schedule, and Budget	Contract for Joint Planning	$1,500
Task 1 – Attend quarterly Committee meetings	Written status reports and presentation	$9,000
Task 2 – Model groundwater availability associated with proposed DFCs	Draft and final report	$18,000
Task 3 – Document aquifer uses or conditions	Draft and final report	$4,000
Task 4 – Document water supply needs and water management strategies in SWP	Draft and final report	$3,500
Task 5 – Document GMA 15 hydrological conditions	Draft and final report	$5,000
Task 6 – Document environmental impacts	Draft and final report	$4,000
Task 7 – Document impacts on subsidence	Draft and final report	$4,000
Task 8 – Document socioeconomic impacts	Draft and final report	$6,000
Task 9 – Document impacts on private property	Draft and final report	$2,000
Task 10 – Document feasibility of achieving DFCs	Draft and final report	$3,000
Task 11 – Document other relevant information	Draft and final report	$3,000
Task 12 – Document public comments	Draft and final report	$4,000
Task 13 – Prepare explanatory report	Draft and final report	$14,000
Task 14 – Technical support in event of petition	To be determined	$0
	Total	$90,000

Table 2-2. Responsibilities of Other Parties and Assumptions Associated with Project Tasks

Task	Responsibilities of Other Parties and Assumptions
Kickoff Meeting	▪ Establish consensus on approach for evaluating the updated GAM ▪ Establish consensus on preliminary schedule and budget based on a favorable evaluation of the updated GAM
Evaluate Updated GAM and TWDB Benchmark Run with Current MAGs	▪ Review Model Conceptual Report and provide comments ▪ Review Numerical Model Report and provide comments ▪ Compare MAG simulations between updated GAM and original GAM ▪ Prepare letter documenting differences between the updated and original GAMs
Meeting to Finalize Scope, Schedule, and Budget	▪ Determine preference for using the updated or original GAM ▪ Finalize scope, schedule, and budget for accomplishing Tasks 1 through 14
Task 1 – Attend quarterly Committee meetings	▪ INTERA will attend seven GMA 15 meetings and will be available for a teleconference for other quarterly meetings. ▪ GMA 15 will be responsible for the minutes.
Task 2 – Model groundwater availability associated with proposed DFCs	▪ INTERA will develop up to 5variations of well files for DFC simulations. ▪ GMA 15 will have the opportunity to generate up to two additional well files based on GCDs developing their own pumping scheme. ▪ INTERA will check that the pumping distributions are properly represented in the DFC simulations, but final responsibility for making sure that future pumping is correct is the responsibility of the GCDs. ▪ DFC simulations will be set up, run, and analyzed in a manner similar to the 2015 DFC simulations. ▪ INTERA will provide one (1) electronic copy and one (1) hardcopy of the aquifer use and conditions section of the proposed DFC report at a Committee meeting.
Task 3 – Document aquifer uses or conditions in GMA 15	▪ Electronic databases obtained from GCDs and the TWDB will be used to document aquifer uses and conditions. ▪ INTERA is not responsible for filling data gaps in the existing databases or for extracting information from images (e.g., .pdf files of driller's logs). ▪ Aquifer use categories used to complete this task will be the same categories used by the TWDB in water use reports. ▪ Water use will represent the overall Gulf Coast Aquifer System (i.e., will not be broken down by individual aquifers such as the Jasper and Evangeline aquifers). ▪ INTERA will provide one (1) electronic copy and one (1) hardcopy of the aquifer use and conditions section of the proposed DFC report at a Committee meeting.
Task 4 – Document water supply needs and water management strategies in SWP	▪ The TWDB will accept the information in the 2022 SWP for documenting the water supply needs and water management strategies. ▪ INTERA will obtain the electronic SWP databases from the TWDB. ▪ INTERA will provide one (1) electronic copy and one (1) hardcopy of the water supply needs and water management strategies section of the proposed DFC report at a Committee meeting.
Task 5 – Document GMA 15 hydrological conditions	▪ Task can be accomplished primarily by analyzing aquifer properties and water levels from the GAM simulations (effort does not include detailed analysis of measured water levels, spring flows, or river flows to determine hydrological conditions or a detailed review of the literature). ▪ GMA 15 will participate in meeting(s) between the TWDB and INTERA to help determine a reasonable and cost-effective method for defining and characterizing different hydrological conditions. ▪ INTERA will provide one (1) electronic copy and one (1) hardcopy of the hydrological conditions section in the proposed DFC report at a Committee meeting.
Task 6 – Document environmental impacts	▪ Results from model simulations will be used to estimate and document environmental impacts with appropriate caveats based on detailed studies by INTERA staff that have documented that the GAM overestimates adverse impacts to spring and river base flow caused by pumping. ▪ If additional work is deemed necessary, INTERA will develop and present options to GMA 15 at no cost to GMA 15. ▪ INTERA will provide one (1) electronic copy and one (1) hardcopy of the environmental impacts section in the proposed DFC report at a Committee meeting.
Task 7 – Document impacts on subsidence	▪ Estimates of land subsidence will be predicted based on estimated water level changes since predevelopment (no pumping) and relationships developed by INTERA staff that correlate land subsidence to total drawdown. ▪ The methods for prediction of land subsidence will be similar to the methods explained and applied in the report "Estimates of Land Subsidence in GMA 15 Based on Ground Surface Elevation Data and Model Results" prepared by INTERA. ▪ INTERA will review and explain a tool developed by TWDB as a screening tool for predicting subsidence across the entire state of Texas. ▪ INTERA will present several methods for predicting land subsidence from drawdowns associated with a DFC. GMA 15 will vote to determine the approach to use. GMA 15 may use multiple methods. ▪ INTERA will provide one (1) electronic copy and one (1) hardcopy of the subsidence section in the proposed DFC report at a Committee meeting.

Task	Responsibilities of Other Parties and Assumptions
Task 8 – Document socioeconomic impacts	▪ An "appropriate" socioeconomic analysis can be conducted by evaluating potential for an unmet demand based strictly on information available from data sets the TWDB has developed as part of their state-wide water planning; there is uncertainty as to what constitutes "appropriate" since a socioeconomic analysis of a DFC has not been previously approved by the TWDB nor has this type of analysis been subject to a petition. ▪ The proposed budget is based on updating the analysis performed for the previous joint planning cycle. Additional work would require additional budget. ▪ INTERA will provide one (1) electronic copy and one (1) hardcopy of the socioeconomic impacts section in the proposed DFC report at a Committee meeting.
Task 9 – Document impacts on private property	▪ GCDs will provide INTERA with the most recent version of their management plans and rules. ▪ GCDs will provide INTERA with a summary of how their district is protecting private property rights. ▪ INTERA will provide one (1) electronic copy and one (1) hardcopy of the impacts on private property section in the proposed DFC report at a Committee meeting.
Task 10 – Document feasibility of achieving DFCs	▪ INTERA will provide one (1) electronic copy and one (1) hardcopy of the feasibility of achieving the DFCs section in the proposed DFCs report at a Committee meeting
Task 11 – Document other relevant information	▪ Given uncertainty in task scope, our cost estimate primarily serves as a placeholder and reminder that other issues not addressed by the RFP or issues raised during the stakeholder process may require additional work. ▪ INTERA will provide one (1) electronic copy and one (1) hardcopy of the relevant information section, if appropriate, in the proposed DFCs report at a Committee meeting.
Task 12 – Document public comments	▪ GCDs will conduct their own public hearings. ▪ GMA 15 will provide INTERA with electronic copies of each GCD's presentation materials, the public comments received, and minutes to the public meetings. ▪ INTERA will not be required to prepare presentation slides that are specifically created for these public meetings
Task 13 – Prepare explanatory report	▪ INTERA will provide one (1) electronic copy and one (1) hardcopy of the explanatory report to GMA 15 and each of the member districts.
Task 14 – Technical support in event of petition	▪ INTERA will attend up to one meeting at no cost to GMA 15. ▪ INTERA will review and provide a strategy to address the petition at no cost to GMA 15.

Table 2-3 (cont.). Responsibilities of Other Parties and Assumptions Associated with Project Tasks

3.0 Proposed Team

3.0 Proposed Team

INTERA has assembled an outstanding group of personnel to support the development and adoption of DFCs for aquifers within GMA 15. This section provides details on our proposed personnel and the other support resources that we have readily available to ensure that all work is completed in accordance with GMA 15's schedule requirements and expectations. To ensure that we provide services in a cost-effective manner, our personnel cover the complete range of experience levels—from principals and senior-level to mid- and junior-level. While all of INTERA's work for GMA 15 will be conducted under the direct supervision of a principal or senior engineer/scientist, establishing the right mix of senior-, mid-, and junior-level for accomplishing each assigned task will enhance the cost-effectiveness of our services.

INTERA is proposing a core group of technical personnel to support the development and adoption of DFCs for aquifers within GMA 15. This core group includes Steven 'Steve' Young, PhD, PE, PG, Wade Oliver, PG, Tingting Yan, Cody Draper, PG, and Andrew Osborn. Brief summaries of their qualifications and experience are provided below. More detailed resumes are provided in **Attachment A** to our proposal. The resumes are presented in the order our personnel appear below. A summary of the professional registrations and certifications of our core team is provided in **Table 3-1**. In addition to the core group of personnel we have identified, INTERA's Texas-based water resources group includes over 20 additional scientists and engineers with backgrounds in geology, hydrogeology, hydrology, water resource engineering, and GIS. This additional resource base provides GMA 15 with added assurance that INTERA has the personnel needed to complete all project work in accordance with required schedules.

Steve Young, PhD, PE, PG. Steve Young is a Principal Engineer/Hydrogeologist at INTERA with a PhD in earth sciences, a MS in environmental engineering, a BS in environmental science and 40 years of experience in the groundwater industry. Steve led INTERA's consulting efforts in supporting GMA 15 during the 2nd Joint Planning Cycle and authored the GMA 15 explanatory report. He also served as the co-manager for the INTERA team that supported GMA 16 during the 3rd Joint Planning Cycle and was the lead author of the GMA 16 explanatory report. Steve has also participated in joint planning activities with other GMAs (7, 8, 12, 15, and 16) and has supported the development and modification of multiple aquifer GAMs. He has supported the groundwater management efforts of nearly 20 GCDs, including many located in the Texas Gulf Coast. His work with GCDs includes developing management plans, groundwater rules, evaluation of DFCs, evaluation compliance with DFCs, and constructing groundwater databases, evaluating groundwater resources, and reviewing permit applications. He has coauthored several GAMs including the Northern Trinity/Woodbine , the Yegua-Jackson GAM, the Edwards-Trinity GAM, the Central Sparta/Queen City, and Carrizo-Wilcox GAM. He is the senior author on four TWDB reports characterizing the Gulf Coast Aquifer System.

Table 3-1. Personnel Registrations/Certifications

Personnel	Registration/ Certifications	State
Steve Young	Professional Engineer, No. 88049	Texas
	Professional Geoscientist, No. 231	Texas
Wade Oliver	Professional Geoscientist, No. 11112	Texas
Cody Draper	Professional Geoscientist, No. 15238	Texas

Wade Oliver, PG. Wade Oliver is a Senior Geoscientist at INTERA with a MS in geology, a BS in environmental geoscience, and 17 years of experience focusing on the characterization of groundwater systems and the development and application of numerical flow models to analyze these systems. His experience includes characterizing the structure, water quality, and water levels of aquifers, updating aquifer management plans for GCDs in Texas, and developing GAMs to support water planning strategies for both public and private entities. Wade has led over 100 projects involving evaluations of aquifer recharge, groundwater-surface water interaction, inter-aquifer flow, and future groundwater conditions and availability for local and regional groundwater management entities in Texas. The information developed for these projects has been used to evaluate various water management strategies by GCDs and GMAs. Through this experience, he brings in-depth knowledge of groundwater planning, development, management, and regulation in Texas, especially the DFC process. Wade served as the INTERA lead for providing joint planning technical assistance to GMA 14 and GMA 1. Additional examples of his experience include leading INTERA's technical assistance to support the regulatory plan review for the Harris-Galveston and Fort Bend

Subsidence Districts and serving as an expert witness on a DFC petition for the Lone Star GCD.

Tingting Yan. A Groundwater Modeler/Hydrogeologist at INTERA, Tingting Yan has a MS in hydrogeosciences, a MS in hydrogeology and water resources, a BS in hydrogeology and engineering geology, and 20 years of experience in groundwater modeling and water resources management. She applies this experience in support of projects that include developing GAMs of Texas aquifers and providing technical consulting services to GCDs and GMAs. Tingting provided modeling support during the 2nd Joint Planning Cycle for GMA 15, was the lead groundwater modeler for supporting GMA 16 during the 3rd Joint Planning Cycle, and provided technical support on the GMA 12 joint planning efforts for Post Oak Savannah GCD . Her experience includes groundwater model development and application using codes such as MODFLOW, MT3D, GMS and Argus ONE, and she brings 15 years of experience with geographic GIS software such as ArcGIS. She has worked on projects for multiple GCDs, including Brush Country, Red Sand, Upper Trinity, Pecan Valley, High Plains, and Coastal Plains, and has supported TWDB projects that include the identification of potential brackish groundwater production areas in the Gulf Coast Aquifer System. Tingting has also supported the development of Texas GAMs for the High Plains Aquifer System, the central portion of the Queen City-Sparta Aquifer, Northern Trinity and Woodbine aquifers, the Yegua-Jackson Aquifer, Seymour Aquifer, and Dockum Aquifer.

Cody Draper, PG. Cody Draper is a Geoscientist at INTERA with MS and BS degrees in geology and five years of experience in stratigraphy, geophysics, subsurface mapping, and petrophysical analysis. He applies this expertise on projects involving the delineation, characterization, development, and management of groundwater resources and the litigation of water rights cases. Cody interprets, integrates, and correlates a wide range of data that include regional geologic maps, seismic, well logs, cores and cuttings, well tests and pressure, fluid analysis, and production data to generate geologic models (facies, stratification, continuity, trends) as well as subsurface geological maps (structure, isopach, faults/barriers) and reservoir/aquifer maps (net sand, porosity, permeability, productivity). He uses this experience to perform a number of hydrogeological evaluations that are tailored to local geology and geophysics. Working for GCDs, land developers, water providers, and energy companies, the results of his analyses are used to make key decisions regarding overall resource availability and sustainability, the optimal siting of water supply production wells, and the implementation of regulations for better groundwater management. Cody's experience includes supporting the development of a comprehensive geological model for the structure of the Carrizo-Wilcox Aquifer through the analysis of some 2,300 geophysical logs across GMA 12. He also helped characterize faults in the Northern Trinity Aquifer in Williamson County for the City of Georgetown through the use of 2D seismic lines.

Andrew Osborn. A Hydrogeologist at INTERA, Andrew Osborne has MS and BS degrees in geology and four years of experience in groundwater modeling, well log interpretation, and large-scale basin analysis in support of groundwater availability studies. Much of his professional experience has involved projects in the Gulf Coast Aquifer System. Some of Andrew's representative experience includes modeling support for a regulatory plan review for the Harris-Galveston and Fort Bend subsidence districts; evaluating production allocation and well spacing rules for the Hemphill GCD; groundwater modeling to evaluate production permits and potential impacts in the Southwestern Travis County and Hays County GCDs; developing exempt use estimates and drought planning for Prairielands GCD; and providing annual report updates for Northern Trinity GCD. His work for GCDs and subsidence districts has also involved the analysis of pumping tests and characterization of aquifer properties. Andrew will assist with developing presentations for GMA 15 and performing groundwater modeling.

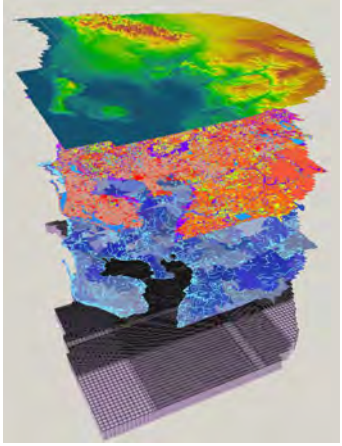
4.0 Relevant Projects

4.0 Relevant Projects

This section provides details on several INTERA projects involving tasks similar to those required to support the development and adoption of DFCs for aquifers within GMA 15. It also provides several client references that can attest to the quality of our services and lists the project reports that we are including as a portfolio of our past work (the actual reports are included in a separate binder entitled "Portfolio"). As an introduction to this section, a brief overview of the capabilities and experience of INTERA is provided below.

INTERA was established in 1974 as a technology-based consulting firm specializing in the development and application of hydrogeologic modeling software. Starting in the late 1990s, we expanded our services to include surface water modeling, GIS, and remote sensing to address needs in the water resource industry. Headquartered in Austin, Texas, INTERA maintains branch offices in Texas, Florida, New Mexico, Colorado, Indiana, Washington, and California. We also have international offices in Australia, France and Switzerland. INTERA has been involved in high-profile projects both domestically and internationally, and many of our senior staff members are recognized in their respective fields and routinely retained to conduct peer reviews and provide expert-witness testimony and litigation support in the areas of water resource management and environmental compliance. Since our inception, we have earned a reputation for developing best-in-class solutions to difficult problems facing industry and governmental agencies including:

- Predicting future hydrologic-system states to support water resource management in the areas of groundwater availability, optimal water-use strategies, and water-demand forecasting through the application of statistics, numerical models, and remote sensing technology
- Hydrogeologic characterization including structural analyses, hydrostratigraphic interpretation, lithostratigraphic interpretation, and depositional systems analysis
- Modeling surface water-groundwater interaction including the development of integrated models that couple MODFLOW and HSPF
- Developing customized digital databases to manage, maintain, and analyze data for water resources and environmental projects
- Developing customized GIS software designed to manage, maintain, and analyze site-specific hydrologic and environmental data under an ArcGIS umbrella
- Acquiring and interpreting hydrologic data in difficult well-testing environments (deep and/or fractured aquifer systems)



INTERA is recognized for our ability to develop and apply advanced numerical models to support water resources management, including integrated surface water – groundwater models capable of simulating the complete hydrologic cycle.

INTERA's staff consists of 230 professional and support personnel specializing in hydrogeology, hydrology, water resources engineering, geosystems engineering, environmental science and engineering, and remote sensing and GIS technology. Our staff includes 32 registered Professional Engineers and 41 Registered Professional Geoscientists. In addition, many of our geoscientists are nationally licensed as Certified Ground Water Professionals (CGWP) by the National Ground Water Association. We are registered with the Texas Board of Professional Geoscientists (#50189) and the Texas Board of Professional Engineers (#4722) to offer and perform geoscience and engineering services in the State of Texas.

INTERA's Water Resources Group specializes in the application of hydrologic, hydraulic, hydrodynamic, and water quality models to provide scientifically sound and cost-effective solutions to water resource management and planning challenges. Our personnel bring a high level of expertise with an array of modeling tools and analysis techniques. We routinely use 1-, 2-, and 3-dimensional models for simulating flow and transport, supplemented with focused field data, GIS, pre- and post-processing tools, and visualization and animation routines. In the area of water resource planning and management, INTERA personnel have completed assignments involving:

- groundwater availability, integrated surface water-groundwater, and watershed modeling
- groundwater withdrawal impacts
- well field design
- hydraulic structures
- retention-detention basin analysis
- hydrologic frequency analysis
- groundwater hydraulics
- rainfall-runoff analysis

- surface water exchange
- hydrologic routing
- seepage analysis
- reservoir systems
- open channel and closed conduit flow
- subsidence

INTERA has demonstrated these capabilities on projects across Texas. For the TWDB, we have led the development of 13 regional-scale GAMs of major and minor aquifers in Texas that are being used to predict water availability over a 50-year planning horizon. We have provided similar services in support of major proposed water delivery projects such as the LSWP where we evaluated optimal well field alternatives for pumping additional groundwater in the Lower Colorado River Basin. We are also conducting groundwater studies and analyses for numerous GCDs and river authorities, as well as commercial industry projects, located throughout Texas.

4.1 Project Experience

INTERA brings the expertise and experience with groundwater issues needed to succeed in providing GMA 15 with high-quality and defensible scientific consulting services. **Figure 4-1** summarizes some of our experience on projects involving the tasks identified in GMA 15's RFP. More detailed descriptions of many of the projects that appear in Figure 4-1 are provided following the figure.

Project Name and Location	Scope of Work Elements for Developing and Adopting DFCs for Aquifers within GMA 15													
	Attend quarterly GMA meetings	Model runs using GAM or similar model	Aquifer uses or conditions	Water supply needs and water management strategies	Hydrological conditions within GMA	Environmental impacts	Impacts on subsidence	Socioeconomic impacts	Impacts on private property	Feasibility of achieving DFCs	Evaluate other relevant information	Address public comments	Prepare explanatory report	Technical support for petition(s)
GMA 15 Hydrogeologic Consulting Services for the 2nd Joint Planning Cycle, Texas	■	■	■	■	■	■	■	■	■	■	■	■	■	■
GMA 14 Hydrogeologic Consulting Services for the 3rd Joint Planning Cycle, Texas	■	■	■	■	■	■	■	■	■	■	■	■	■	■
GMA 16 Hydrogeologic Consulting Services for the 3rd Joint Planning Cycle, Texas	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Modeling to Assess Groundwater Availability and Pumping Impacts in the Lower Colorado River Basin, Texas			■	■	■	■	■	■	■	■		■		
Estimates of Land Subsidence in GMA 15 Based on Ground Surface Elevation Data and Model Results, Texas			■		■		■			■				
Technical and Joint Planning Support for Evaluating DFCs within GMA 12, Texas						■				■	■	■		■
Evaluation of Pumping Assumptions on DFCs and Well Spacing for Coastal Plains GCD, Texas	■	■	■	■	■					■	■		■	
Use of Groundwater and Streamflow Data to Estimate Recharge in the Gulf Coast Aquifer, Texas	■		■		■								■	
Development of Hydrogeologic Structure for the Southern and Central Portions of the Gulf Coast Aquifer, Texas	■		■		■								■	
Update of the Hydrogeologic Framework of the Northern Portion of the Gulf Coast Aquifer, Texas	■		■		■								■	
Use of Geochemical Data to Improve Groundwater Models of the Gulf Coast Aquifer in GMAs 14, 15, and 16, Texas	■		■		■	■							■	
Development and Implementation of a Groundwater Science Plan: Phases 1, 2, and 3 for Victoria County GCD, Texas	■	■	■		■						■	■	■	

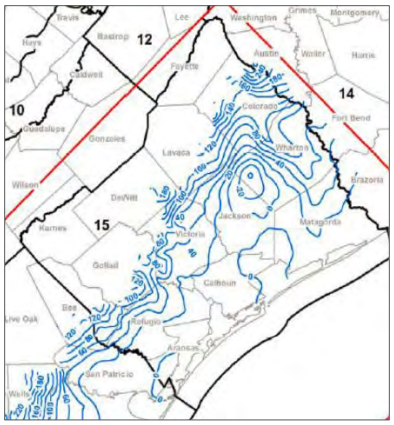
Figure 4-1. Examples of INTERA's relevant project experience

Project Name and Location	Scope of Work Elements for Developing and Adopting DFCs for Aquifers within GMA 15												
	Attend quarterly GMA meetings	Model runs using GAM or similar model	Aquifer uses or conditions	Water supply needs and water management strategies	Hydrological conditions within GMA	Environmental impacts	Impacts on subsidence	Socioeconomic impacts	Impacts on private property	Feasibility of achieving DFCs	Evaluate other relevant information	Address public comments	Prepare explanatory report	Technical support for petition(s)
Aquifer Characterization, Management, and Planning for Brush Country GCD, Texas	■		■		■						■			
Model Simulations and Other Technical Support to Evaluate and Develop DFCs for Brush Country GCD, Texas	■	■	■	■	■	■	■			■			■	
Technical Support to Establish DFCs for Colorado County, Coastal Bend, and Coastal Plains GCDs, Texas	■	■	■		■	■				■			■	
Regional Planning Support for Colorado County, Coastal Bend, and Coastal Plains GCDs, Texas	■	■	■	■	■					■	■		■	
Regional Planning and Groundwater Management of the Gulf Coast Aquifer for Duval County GCD, Texas	■		■	■	■					■				
Characterization of Fresh and Brackish Groundwater Resources for the Coastal Plains GCD, Texas			■		■									
Brazoria County Regional Water Facility Study for Brazosport Water Authority, Texas			■	■	■	■	■	■		■	■			
Characterization of Brackish Resources for Harris-Galveston and Fort Bend Subsidence Districts, Texas			■		■									
Technical Support to Establish DFCs for Colorado County, Coastal Bend, and Coastal Plains GCDs, Texas	■	■	■		■	■				■			■	
Evaluation of Subsidence from Developing Brackish Resources in Harris-Galveston and Fort Bend Subsidence Districts, Texas		■	■				■							
Evaluation of Aquifer Storage and Recovery under Subsidence Neutral Conditions for Harris-Galveston a Subsidence District, Texas		■	■	■	■		■							
Environmental Studies for the Amarillo Potter County Well Field and Water Transmission Pipeline, Texas			■	■		■		■	■		■			
Groundwater Monitoring, Joint Planning, and Groundwater Management Support for Post Oak Savannah GCD, Texas	■	■	■	■					■	■		■	■	
Evaluation of Large-Scale Pumping and Hydraulic Fracturing on Groundwater Resources within Pecan Valley GCD, Texas	■	■	■		■	■				■	■		■	
Aquifer Characterization, Modeling, and Other Technical Services to Support Planning for the Upper Trinity GCD, Texas	■	■	■	■	■								■	
Hydrostratigraphic Mapping to Support Developing a Groundwater Monitoring Program for the Upper Trinity GCD, Texas			■		■				■					
Hydrogeological Studies, Subsurface Mapping, and Modeling for the Lone Star GCD, Texas	■	■	■		■					■				
Characterization of the Carrizo-Wilcox Aquifer System for Panola County GCD, Texas	■		■	■	■								■	
Development of the Yegua-Jackson Aquifer Groundwater Availability Model, Texas	■	■	■		■	■					■	■	■	

Figure 4-1 (cont.). Examples of INTERA's relevant project experience

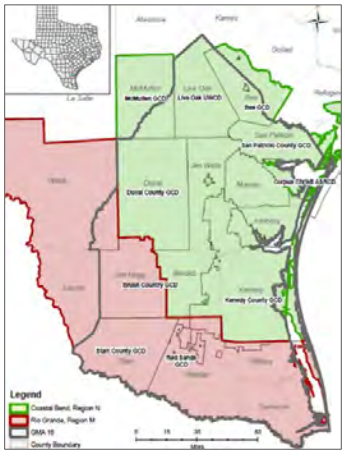
GMA 15 Hydrogeologic Consulting Services for the 2nd Joint Planning Cycle, Texas

GMA 15 is located along the middle of the Texas Gulf Coast, and includes fourteen GCDs. INTERA attended over 10 GMA 15 meetings, performed all the DFC model simulations, and facilitated the discussion on the nine factors that need to be considered in the development of DFCs per TWD §36.108(d). As part of the modeling process, we incorporated a permitted water supply project into the GAM future conditions and extended the historical pumping period from the year 2000 to the year 2010. INTERA wrote the Explanatory Report and addressed all of TWDB's questions regarding the groundwater modeling and the report.



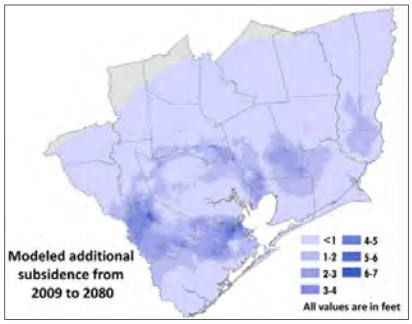
GMA 16 Hydrogeologic Consulting Services for the 3rd Joint Planning Cycle, Texas

GMA 16 includes 10 GCDS in the Southern Gulf Coast Aquifer System. INTERA reviewed the joint planning requirements and explained the TWDB flowchart for the DFC and MAG process. INTERA facilitated the development of two future modeling scenarios and used the TWDB Alternative Groundwater Model for GMA 16 to predict water level changes from 2010 to 2070. GMA 16 used the modeling result to developed drawdown-based DFCs for all GCDs. INTERA prepared technical memos declaring the Carrizo-Wilcox and the Yegua-Jackson aquifers as non-relevant aquifers. INTERA participated in the majority of the GMA meetings and prepared and gave presentation on the nine factors that need to be considered in the development of DFC per TWD §36.108(d). INTERA prepared the explanation report and responded to all TWBD comments. The TWDB did not find any errors with the modeling files and DFC calculations.



GMA 14 Hydrogeologic Consulting Services for the 3rd Joint Planning Cycle, Texas

GMA 14 is located along the Upper Texas Gulf Coast, and includes five GCDs. GMA 14 also includes the Fort Bend Subsidence District and the Harris-Galveston Subsidence districts as participants. The GMA develop DFCs based on the median precent of "available drawdown" remaining in wells and land subsidence. Available drawdown represented the height of the water column in a well between the water level in the well (as defined by the associated aquifer in the HAGM) and the bottom of the well. INTERA attended and facilitated approximately 15 meetings. We gave presentations on all nine factors that need to be considered in the development of DFC per TWD §36.108(d). INTERA prepared the explanation report and responded to all TWBD comments. The TWDB did not find any errors with the modeling files and DFC calculations.



Technical Support to Establish DFCs and Update Management Plans for Coastal Bend, and Coastal Plains Groundwater Conservation Districts, Texas

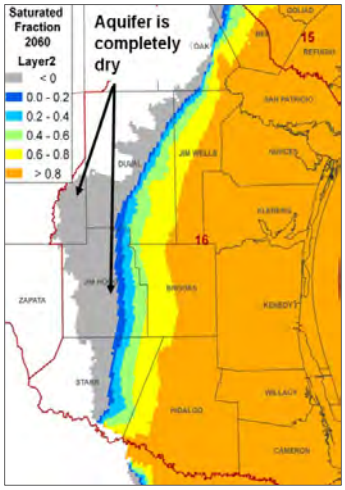
INTERA provided technical services for Coastal Bend GCD and Coastal Plans GCD in the Lower Colorado River Basin to support the GMA 15 joint planning process. Our efforts included establishing DFCs using the Central Gulf Coast GAM and the model that INTERA developed for the LCRA-SAWS Water Project. After evaluating the various strengths and weaknesses of each model, we used both of the models to produce spatial distributions of drawdown at 10 year increments. Detailed sensitivity analyses were performed to demonstrate how drawdown varied with pumping. GMA-15 DFC runs were reproduced and the TWDB average drawdown calculations were verified.

		GAM Run 10-008 11 ft Scenario	TWDB GAM Run 08-56 (09-010)	INTERA GAM Run 08-56 (09-010)
Colorado County	Chicot	4.8	5.2	5.2
	Evangeline	8.3	8.8	8.9
	Burkeville	13.5	not reported	13.9
	Jasper	19.9	20.3	20.4
Wharton County	Chicot	11	11.7	11.7
	Evangeline	2.5	3.8	3.8
	Burkeville	17.9	not reported	18.4
	Jasper	20.8	21.1	21.1
Matagorda County	Chicot	3.1	3.2	3.2
	Evangeline	16.8	17.8	17.7
	Burkeville	14.1	not reported	14.4
	Jasper	0	0	0

Alternative methods for calculating average drawdown were also developed and verified. INTERA staff (Dr. Steve Young) presented the results of the modeling efforts to GMA-15 . In addition to evaluating DFCs fo the two GCDs, INTERA also coordinate the updates of the GCD Management Plans with the TWDB. The updateds include preparing sections that describe the district hydrogeology, potential brackish zones, groundwater availability, historical pumping, water demands and supply, and water strategies for future water conservation and development.

Technical Support for Evaluating and Developing DFCs for Brush Country Groundwater Conservation District, Texas

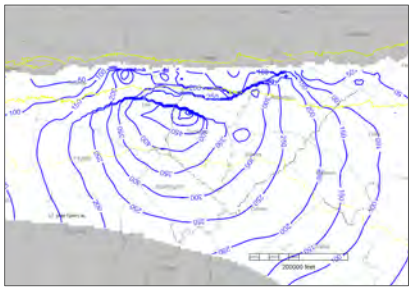
In support of Brush Country GCD's participation in the GMA 16 joint planning process, INTERA performed numerous model simulations, using the TWDB's draft GMA 16 flow model to evaluate proposed DFCs. Our evaluation of DFCs considered changes to water levels at existing wells, land subsidence, water quality, and groundwater availability. To evaluate impacts at existing wells, we constructed a database for approximately 6,000 wells that included water level measurements and well screen information. The database was created by assembling and reviewing drillings logs obtained from TWDB and TCEQ. Based on this information, INTERA developed a conceptual model for the district's groundwater system that included recharge estimates, aquifer hydraulic properties, and the location of fresh and brackish groundwater resources. Using the conceptual model and measured water levels, we reviewed the groundwater models developed for use by GMA-16 and identified several significant problems and errors with the model predictions.



INTERA staff (Dr. Steve Young) made multiple presentations to the district and two presentations to GMA 16 to communicate potential concerns with the groundwater model and to demonstrate that the adopted DFCs pose a major threat to groundwater sustainability in several up-dip counties in GMA 16. Presentations to the district discussed the key features of groundwater management plans, the hydrogeology of the Gulf Coast Aquifer, and the importance of the concept of well spacing. As part of this process, INTERA classified water wells by aquifer type and developed detailed water budgets for the district. The results of the groundwater model simulations demonstrated that the proposed MAGs were not sustainable beyond the 50-year planning period.

Technical Support Including Joint Planning and Management Plan Updates for the Post Oak Savannah Groundwater Conservation District, Texas

INTERA has performed a wide-range of technical services for Post Oak Savannah Groundwater Conservation District (POSGCD) to support the joint planning process, changes to District rules and management plans, and studies to improve the characterization of aquifer properties and processes. As part of these activities, INTERA has performed numerous groundwater availability simulations that have been used to evaluate DFCs and the validity of the conceptual groundwater flow models for the District. INTERA has prepared documents and presentations to explain the rationale for the selected DFCs and performed model simulations to demonstrate that the DFCs are physically possible. Dr. Steve Young has been a lead presenter in public meetings for GMA 12 and the POSGCD and has helped prepare the GMA 12 DFC submittal to the TWDB.

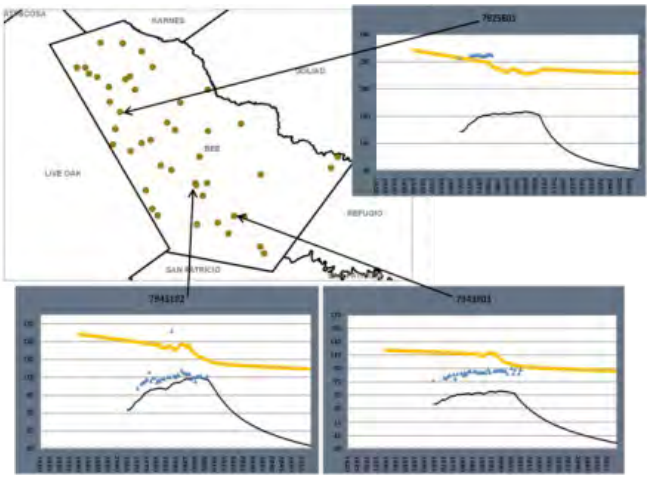


INTERA has also investigated methods of monitoring groundwater levels to evaluate DFC compliance. As part of the design task for the monitoring well network, INTERA led an effort to convert oil and gas wells into monitoring wells for the Simsboro Aquifer. INTERA is currently working with the District to investigate options for improving aquifer datasets and modeling tools. This work includes negotiations with the USGS and Texas A&M to design studies to better quantify recharge rates. As part of the recharge investigation, INTERA has performed preliminary investigation of baseflow from stream gages for watersheds in the Brazos River Alluvium, the Sparta/Queen City, the Carrizo/Wilcox, and the Trinity aquifers. In addition, INTERA is assembling information to evaluate the sealing properties of the faults simulated in the Central Queen City/Sparta Aquifer.

Technical Communications to Support Planning for the Bee County and Duval County Groundwater Conservation Districts, Texas

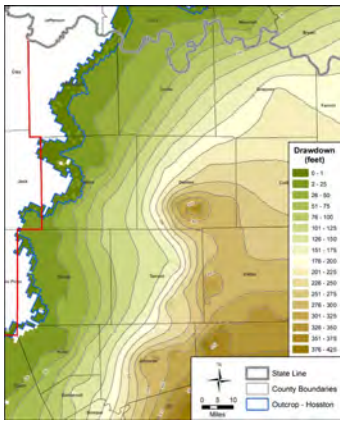
INTERA prepared and presented information to the Bee County GCD Board Members and General Manager that included an overview of the Gulf Coast Aquifer System, the information and codes used to develop groundwater models, a comparison of the GMA 15 and GMA 16 GAM models, and the uncertainty associated with groundwater model predictions. In addition, the presentation summarized several of the key information sets available in Bee County for developing and evaluating future GAMs.

INTERA also prepared and presented a workshop for the Duval County GCD Board Members, General Manager, and other interested parties that consisted of four topic areas—Groundwater 101, Gulf Coast Aquifer System, GMA 16 Joint Planning Process, and District Management Plan Overview. The Groundwater 101 topic area covered groundwater flow, groundwater availability, and the effects of pumping. The Gulf Coast Aquifer System topic examined the geology, aquifers, water balance, and water quality of the southern Gulf Coast Aquifer. The GMA 16 Joint Planning Process topic covered GMAs, House Bill 1763, the DFC adoption process, and recent activities at GMA 16. The Management Plan Overview topic covered the components of a management plan and the plans of neighboring districts.



Technical Services to Support Planning and Updates to Management Plans for the Upper Trinity Groundwater Conservation District, Texas

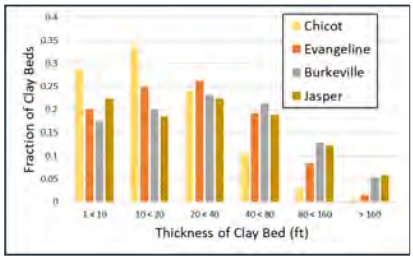
INTERA has provided technical support to the Upper Trinity GCD since its formation in 2008. The Upper Trinity GCD comprises the counties of Hood, Parker, Wise and Montague and is in an area experiencing the double pressures of urbanization from the Dallas-Ft Worth Metroplex and the high demand for water in the Barnett Shale gas play. Historically, the Northern Trinity Aquifer has experienced significant drawdown, and the region has most recently been designated as a Priority Management Groundwater Area by the TCEQ.



INTERA has performed a variety of support work for the Upper Trinity GCD, including: reviewing the current Northern Trinity/Woodbine GAM; performing simulations using the GAM to support the District's input in the joint planning process; supporting the establishment of interim rules on well spacing; providing estimates of current groundwater use; assisting in variance request hearings; developing a GIS-based database well registration, metering and fee calculation system; and developing a monitoring program. The review of the NTW GAM and the performance of a series of sensitivity simulations was one of the earliest tasks performed by INTERA for the District and was well received by the Board members. Based on these efforts, we helped the Upper Trinity GCD understand the limitations of the current GAM, thereby enabling them to participate in the GMA 8 joint planning process in an informed manner.

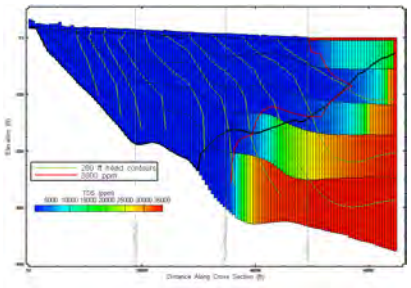
Evaluation of Land Subsidence and the Rio Grande Flow and Transport Model for Groundwater Conservation Districts in GMA 16, Texas

This project was jointly funded by the Brush Country, Red Sands, Duval County, and Kenedy County GCDs. INTERA developed conceptual and numerical models to predict land subsidence based on data produced by the subsidence districts over the last 40 years. Land subsidence was simulated using the USGS MODFLOW "SUB" package for 10 locations based on the vertical sequences of sands and clay interpreted from geophysical logs. The predicted subsidence was compared to subsidence predicted using other available methods. The report also reviewed the Rio Grande Flow and Transport MODEL recently developed by the TWDB for simulating the migration of total dissolved solids (TDS) concentration in the lower five counties in GMA 16.



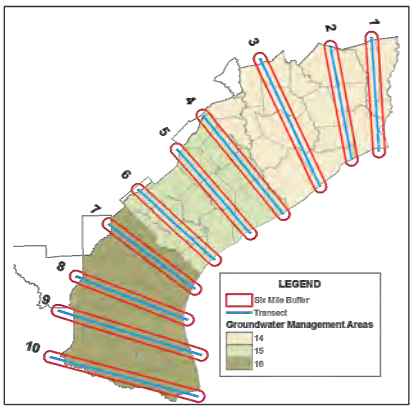
Modeling to Assess Groundwater Availability and Pumping Impacts in the Lower Colorado River Basin, Texas

INTERA served as the modeling lead subcontractor for the development of a groundwater model to assess the impacts of additional pumping in the Lower Colorado River Basin as part of the Lower Colorado River Authority (LCRA) and San Antonio Water System (SAWS) Water Project (LSWP). INTERA was part of the Groundwater for Agriculture Study Team responsible for evaluating optimal well field alternatives for pumping an average of 36,000 acre-feet per year (AFY) of additional groundwater supply to the irrigation districts in the Lower Colorado River Basin. Specific study tasks included: conducting a literature review and data collection to support the development of a conceptual groundwater flow model; developing and calibrating a groundwater model capable of simulating the impacts caused by the LSWP pumping activities to land subsidence, changes in water quality, saltwater intrusion, groundwater availability estimates, and changes in surface water-groundwater interactions; identifying potential groundwater impacts caused by pumping associated with the LSWP; and designing and evaluating alternative LSWP well field designs. The study included collecting geohydrological information from 12 counties with the primary emphasis on Colorado, Wharton, and Matagorda counties.



A complete review of stratigraphy and lithology was performed to develop a conceptual understanding of the aquifer framework and to provide a basis for developing model layering. Through the review of more than 800 geophysical logs. Hydraulic properties were developed by augmenting literature with an additional 430 pump tests and 2,400 specific capacity tests. The analysis developed ranges for aquifer properties and also developed trends in the properties correlated with depositional facies. In addition, historical pumping records and hydrograph analyses were used to develop a picture of changes to the predevelopment water balance since historical production began in the early 1900s. This analysis made estimates of total pumping, boundary inflow, and storage change to estimate the regional relationship between the balance of pumping and storage loss and capture.

Use of Geochemical Data to Improve Groundwater Models of the Gulf Coast in GMAs 14, 15, and 16, Texas



For TWDB, INTERA used existing and newly collected geochemical data to confirm, refine, and/or modify the conceptual flow model(s) for the aquifers in GMAs 14, 15, and 16. The aquifers included the Brazos River Alluvium Aquifer, and the Gulf Coast Aquifer (combined Chicot/Evangeline, Burkeville Confining unit, and combined Jasper/Catahoula). The geochemical data included both inorganic major ion chemistry and isotopic analyses. The flow system, as determined by the geochemical approach, was compared to the interpretation of the groundwater flow on an intra-aquifer and an inter-aquifer basis. The research was used to evaluate the previously developed GAMs for the Gulf Coast Aquifer and to provide an integrated hydrogeochemical conceptual framework for modeling groundwater flow in GMAs 14, 15, and 16. The research supported TWDB's plan to combine individual aquifer GAMs into integrated models of multiple aquifers that show the inter-relationships between the aquifers.

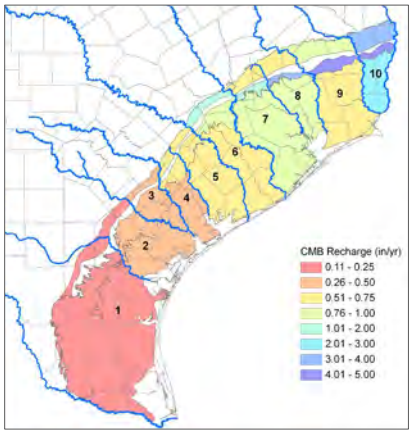
INTERA provided quantitative and qualitative estimates for the mixing of different source waters, the evolution of geochemical changes along a flow path, and the age of groundwater. We investigated whether there are differences in the origin of brackish water in the inner coastal and the inland areas by comparing the geochemical signature of brackish water to the geochemical signature of the possible sources for brackish water. Among the geochemical signatures demonstrated to be useful for the evaluation were the stable isotopes in meteoric water, the iodine to chloride ratio, and the bromide to chloride ratio. For this investigation, we considered that possible sources of TDS in the brackish water include salt-water contamination from oil and gas injection wells and disposal pits, halite-dissolution from salt domes, geopressured brines upwelling along growth faults, salty aerosol sprays originating from the coast, and connate water that has migrated little since Pleistocene times. We also performed mixing calculations for the Brazos River Alluvium Aquifer.

Inverse modeling, using PHREEQC, was used along some of transects to ascertain the reactions that can occur along a defined flow path to explain the changes in the measured

water quality between two points. A critical component of the inverse modeling was interpretation of the results with secondary information. This was accomplished by constraining the set of solutions by: performing multiple inverse model simulations along a transect; using different starting and ending points; using isotope data where beneficial; checking for large jumps in the mass balance calculations along the flowpath; examining the impact of error propagation (caused by uncertainty in the measured input concentrations); checking for unlikely undersaturated or supersaturated conditions for a dissolved mineral; and considering multiple scenarios for the different combinations of allowable chemical reactions.

Use of Groundwater and Streamflow Data to Estimate Recharge in the Gulf Coast Aquifer, Texas

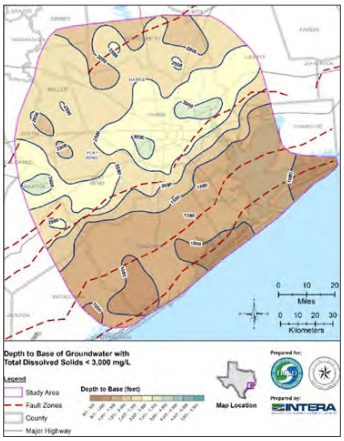
For the TWDB, INTERA and the BEG performed various analyses for estimating recharge in the Texas Gulf Coast aquifers, from the Rio Grande to the Brazos River. The multi-pronged approach included estimation of recharge from groundwater data, estimation of shallow recharge from streamflow data, and some new field studies to provide additional recharge estimates. The initial phase of work included developing a summary of previous recharge estimates in the Gulf Coast Aquifer. Estimation of recharge from groundwater data included two methods, the chloride mass balance approach and the water table fluctuation method. In the chloride mass balance approach, the assumption is made that subsurface chloride comes primarily from the chloride naturally occurring in precipitation. The recharge rate can then be estimated if the rate of precipitation, the concentration of chloride in the precipitation, and the concentration of chloride in the groundwater are known. The water table fluctuation method estimates recharge through the analysis of measured water table change in shallow wells through time. The basic premise is that the rise in the water table over a given period can be attributed primarily to recharge. This requires the assumption that water level changes are caused by groundwater recharge and discharge and that specific yield is known *a priori*.



Estimation of baseflow discharge (a primary component of shallow recharge) was the focus of INTERA's contribution to the recharge estimation effort. Hydrograph separation is a methodology whereby streamflow hydrograph data is analyzed and surface runoff is partitioned from the stream baseflow component. The basic premise is that in the streamflow hydrograph, sharp peaks will represent surface runoff events, whereas the smooth, constant portion of the streamflow hydrograph represents baseflow. There are several automated methods available to perform the separation. The hydrograph separation code Base Flow Index was used for the analyses in the study. After the baseflow estimates are made, the rate is divided by the catchment area to estimate areal flux. These flux estimates will be the primary product of the hydrograph separation analysis.

Delineation of Brackish Groundwater Resources and Subsidence Risk Assessment for Harris-Galveston and Fort Bend Subsidence Districts, Texas Gulf Coast

INTERA conducted a study to delineation brackish groundwater resources in the Districts utilizing methods consistent with those most recently applied in the TWDB Gulf Coast Aquifer System Brackish Production Zone Study performed in response to House Bill 30. Hundreds of geophysical logs were collected and digitized using 294 logs to interpret aquifer lithology and 299 logs to interpret water quality and salinity class. Six dip and three strike cross-sections were developed in the study area delineating water quality and lithology. Groundwater in storage in sand lithology was calculated by formation, aquifer and county by salinity class. With this data, the study assessed the risk potential for subsidence resulting from the development of the brackish Jasper Aquifer.

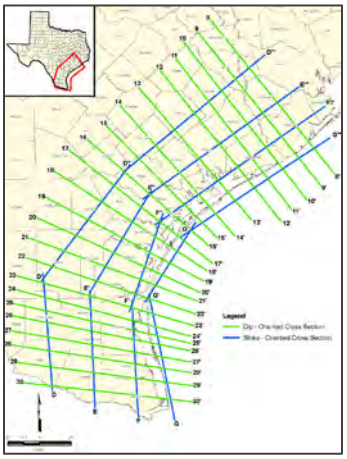


The objective of the brackish Jasper Aquifer study was to provide guidance to the Districts regarding the consideration and potential regulation of brackish groundwater development in the Jasper Aquifer. The risk assessment provides a framework for the Districts to evaluate projects in terms of potential subsidence risk based upon their location. The study also provides an approach to collecting additional data to support the Districts in further characterizing the brackish Jasper

Aquifer and the potential for subsidence from its development. The Jasper Aquifer risk assessment study accomplished three primary tasks: (1) reviewed the available data and models to develop a conceptual model for compaction in the Jasper Aquifer; (2) developed and implemented a risk assessment methodology to calculate the risk of brackish groundwater development in the Districts; and (3) provided recommendations regarding what activities and data could be collected to support understanding, regulation, and future investigations in the brackish Jasper Aquifer.

Development of Hydrogeologic Structure for the Gulf Coast Aquifer, Texas

In 2010, INTERA staff (Steve Young) completed a TWDB report of the geology for the Texas Gulf Coast, including the area encompassed by GMA 16. This report redefined the structure and the sand and clay percentages for each unit of the Gulf Coast Aquifer. This TWDB study provides the geologic framework for future revisions to the Gulf Coast Aquifer GAMs. The structure of the Gulf Coast Aquifer system is comprised of, from shallowest to deepest, the Chicot Aquifer, the Evangeline Aquifer, the Burkeville Confining Unit, and the Jasper Aquifer, with parts of the Catahoula Formation acting as the Catahoula Confining System. In this study, aquifer units have been subdivided on the basis of chronostratigraphic correlation to yield sub-aquifer layers. The boundaries for the geologic units were traced from outcrop formation boundaries to identifiable flooding surfaces in the deeper subsurface, where paleontological control constrained geologic ages of surfaces at nearshore and offshore geophysical log locations.

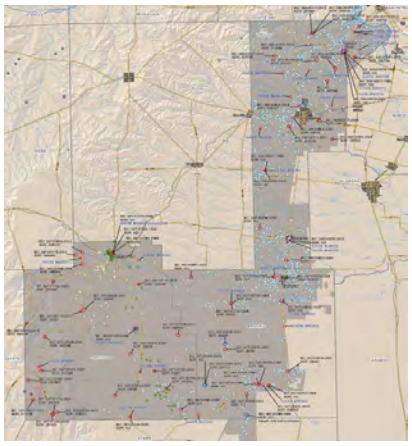


More than 900 geophysical logs were analyzed to define the structure and/or lithology of the Gulf Coast Aquifer system. Four hundred and fifty-seven of the logs were used in the chronostratigraphic correlations to define the surfaces for 10 of the geologic units previously listed. The surfaces for these geologic units along 23 dip-oriented cross-sections and 4 strike-oriented cross-sections were developed. With 706 geophysical logs, a continual profile of lithology was generated through the stratigraphic column for the Gulf Coast Aquifer system using a four-class system consisting of: (1) sand; (2) clay; (3) sand-with-clay; and (4) clay-with-sand. The four-class system provides more specificity than the commonly used "binary" system, which aggregates deposits into an alternating series of clay beds and sand beds. Based on the lithology, maps of sand percentages and total sand thickness were constructed for the Chicot, Evangeline, and Jasper aquifers and their respective sub-aquifer layers.

To assist in the development of hydraulic conductivity distributions for each geologic unit, depositional facies maps were developed. The deposition facies provide information on factors that affect groundwater flow, such as the sorting, arrangement, and sizes of the particles in a deposit and how the deposit is or is not interconnected to similar and different deposits. For each of the 706 geophysical logs used for the lithologic interpretation, an estimate of the water quality was made for each interval assigned a lithology classification. For each of these intervals, the water quality was classified as fresh, slightly saline, or moderately saline. These classifications are based on the concentration of total dissolved solids (TDS). Fresh water is defined as having a TDS concentration less than 1,000 parts per million (ppm). Slightly saline water has a TDS concentration between 1,000 and 3,000 ppm, and moderately saline water has a TDS concentration between 3,000 and 10,000 ppm.

Development of a Monitoring Well Network and Program for the Brush Country Groundwater Conservation District, Texas

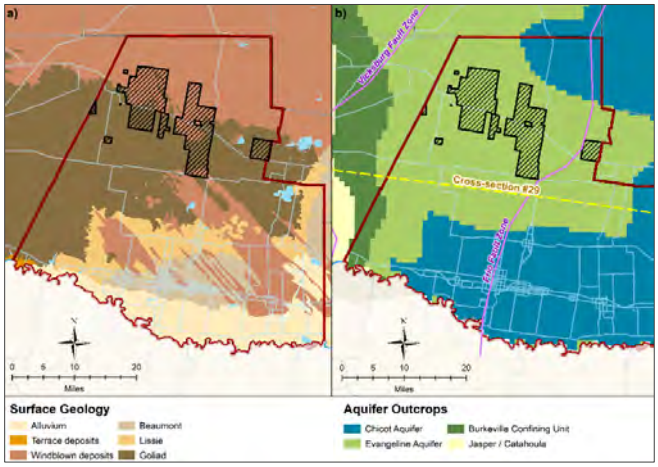
INTERA constructed a groundwater conceptual model for the groundwater flow system in the area regulated by the Brush Country GCD. The hydrogeological data were from databases maintained by the TWDB, TCEQ, and Texas Railroad Commission (TRC) and hydrogeological data from state agencies and consulting reports. INTERA performed a survey of GCDs in GMA 15 and 16 to describe other GCD monitoring systems and use the “lessons learned” to develop a monitoring program to address DFC compliance in a cost-effective manner. Based on screening criteria created as part of the project, 85 candidate wells were identified for the monitoring program. The candidate wells were ranked were numbered based on their preference ranking. Potential



well areas were mapped and ranked by on their susceptibility for high potential drawdown and for undesirable water quality characteristics such as high arsenic or TDS concentrations. INTERA proposed a methodology for developing the monitoring well network and monitoring program that included potential well locations, recommended sampling protocols, and options for compliance methodologies.

Update of the Red Sands Groundwater Conservation District Management Plan, Texas

Senate Bill (SB) 1, enacted by the 75th Legislature in 1997, and SB 2, enacted by the 77th Legislature in 2001, established a comprehensive, statewide planning process and the actions necessary for districts to manage and conserve the groundwater resources of the State of Texas. These bills require each GCD to develop and maintain a management plan which defines (1) the water needs and supply and (2) the goals it will use to manage the underground water to meet these needs. INTERA updated the management plan to incorporate TWDB recent updates to Gulf Coast lithology and stratigraphy datasets, GMA 16 updates to adopted Desired Future Conditions and Modeled Available Groundwater, and revisions to state plans for water demands, supply, and strategies for Hidalgo county. INTERA served as the point of contact with TWDB for guiding the modified plan through the approval process.



Development and Implementation of a Groundwater Science Plan: Phases 1, 2, and 3 for Victoria County GCD, Texas

INTERA performed a data gap analysis and lead a series of stakeholder meetings to help the Victoria County GCD develop a plan for addressing management and science issues within the district. Our efforts included conducting a literature search that produced 1,200 references and performing data gap analysis that included: an overview of the GMA 15 GAM; description of the GMA 15 GAM calibration process and results; an overview of the GMA 15 joint planning process and the adopted DFC; an evaluation the reliability of the GMA 15 GAM based on the findings of the literature survey; a discussion of options for improving the GAM; potential uses of the literature database, and identification of important information gaps in the survey literature. The database provides the capability to update references, query references, associate and view PDFs with references, associate key words with references, and visualize basic spatial information in a GIS viewer. The database includes 140 PDFs that focus on regional studies that integrate multiple data sources into a conceptual or numerical groundwater flow model or local studies that focus on characterizing groundwater resources of Victoria and its surrounding counties. As part of the data analyses, detailed comparisons were developed for stratigraphy, recharge, aquifer properties, water quality profiles, and pumping estimates from different information sources. For each information set, evaluation of the reliability and accuracy of the data was discussed. The important data gaps in the literature search were divided into data and into discussions. Among the important data that was deemed lacking are: pumping rates and locations, vertical hydraulic conductivity measurements/estimates, specific storage coefficients, aquifer properties for the deeper Gulf Coast formations, and water levels. Among the important discussions lacking information are: conceptual groundwater flow system/model; critiques of the Gulf Coast GAMs; methodology to estimate pumping impacts at distance less than a few miles, methodologies for calculating average drawdowns in GCDs to check DFC conformance, and characterization of brackish resources.

Modeling of Proposed DFCs and Permitting Support for Colorado County GCD, Texas

INTERA evaluated proposed DFCs for GMA 15 by performing a series of model runs using the Central Gulf Coast Aquifer GAM and the LSWP model. As a result of this comparison, the district opted to use the LSWP model for evaluating major permit applications. We recently applied the LSWP model to evaluate a permit application that would allow the pumping of 25,000 AFY of groundwater into the canal system associated with LCRA's Garwood Irrigation Division. As part of the permit application review, INTERA built a GIS for the district that integrates a variety of data including well information, estimates of groundwater pumping, water levels, surface water bodies, and predictions of drawdown. To help evaluate the permit application and to support district rule making, we also developed an analytical model. Using both the analytical and LSWP models, we simulated aquifer drawdown

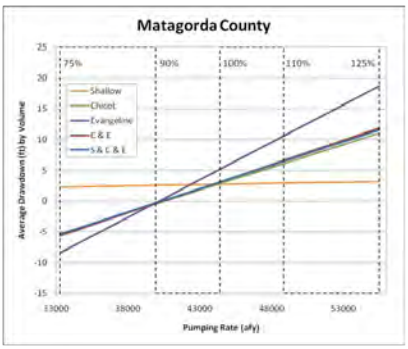
associated with pumping the 25,000 AFY of water as described in the permit application. The results from both models showed that the drawdown impacts can be mitigated. As a result of our work, one of the conditions of the permit is the implementation of a monitoring program and mitigation plan. Colorado County GCD has since approved a 1-year conditional permit for the 25,000 AFY of pumping.

Technical Support to Establish DFCs for Colorado County, Coastal Bend, and Coastal Plains GCDs, Texas

INTERA provided technical services for three GCDs in the Lower Colorado River Basin to support the GMA 15 joint planning process. Our efforts included establishing DFCs using the Central Gulf Coast GAM and the model that INTERA developed for the LCRA-SAWS Water Project. After evaluating the various strengths and weaknesses of each model, we used both of the models to produce spatial distributions of drawdown at 10-year increments. Detailed sensitivity analyses were performed to demonstrate how drawdown varied with pumping. GMA 15 DFC runs were reproduced and the TWDB average drawdown calculations were verified. Alternative methods for calculating average drawdown were also developed and verified. INTERA personnel (Dr. Steve Young) presented the results of the modeling efforts to GMA 15 on behalf of the three GCDs. This included providing justification for the GCDs to use the LCRA model instead of the GAM developed under the TWDB's Groundwater Availability Modeling Program to develop and implemen their management plan and groundwater rules. Using the GCDs well databases, INTERA generated the pumping distribution across the three district area and across the Gulf Coast Aquifers. We performed several model simulations to demonstate the large influence that the placement of the pumping has on the resulting DFC.

Regional Planning Support for Colorado County, Coastal Bend, and Coastal Plains GCDs, Texas

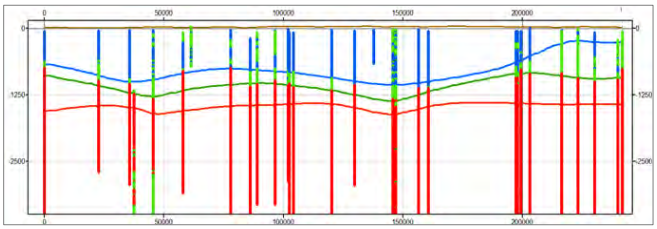
INTERA provided technical services for three GCDs in the Lower Colorado River Basin to support the GMA 15 joint planning process. Our efforts included establishing DFCs using the Central Gulf Coast GAM and the model that INTERA developed for the LCRA-SAWS Water Project. After evaluating the various strengths and weaknesses of each model, we used both of the models to produce spatial distributions of drawdown at 10-year increments. Detailed sensitivity analyses were performed to demonstrate how drawdown varied with pumping. GMA 15 DFC runs were reproduced and the TWDB average drawdown calculations were verified. Alternative methods for calculating average drawdown were also developed and verified. INTERA personnel presented the results of the modeling efforts to GMA 15 on behalf of the three GCDs. This included providing justification for the GCDs to use the LCRA model instead of the GAM developed under the TWDB's Groundwater Availability Modeling Program to develop and implemen their management plan and groundwater rules. Using the GCDs well databases, INTERA generated the pumping distribution across the three district area and across the Gulf Coast Aquifers. We performed several model simulations to demonstate the large influence that the placement of the pumping has on the resulting DFC. In addition, we performed several sensitivity analyses to quantify the impacts of changing in pumping to changes in drawdown across a county.



Characterization of Fresh and Brackish Groundwater Resources for the Coastal Plains Groundwater Conservation District, Texas

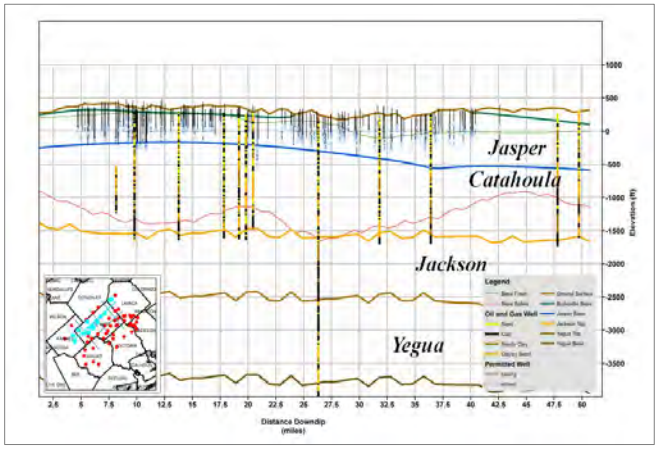
In support of the Coastal Plains GCD planning efforts, INTERA estimated the availability of fresh and brackish groundwater in Matagorda County by integrating the results from water quality sampling at approximately 200 water wells and calculating total dissolved solids (TDS) concentrations from 100 geophysical logs. The total volume of freshwater and brackish water resources was estimated to be 136 million acre-feet and 129 million acre-feet, respectively. Based on transmissivity values generated for aquifer regions containing slightly saline (1,000 to 3,000 ppm TDS) waters, we estimated that 41 million AFY of the brackish water can be economically developed. We subsequently developed several approaches for predicting the impacts that pumping brackish water would have on the freshwater resources in the county and made recommendations for developing the brackish resource. In addition, INTERA mapped the locations and placements of approximately 200 waste injection wells that could impact groundwater quality. These wells are located near the boundary of the moderately saline waters, which have a TDS concentration of less than 10,000 ppm. We also mapped the salt domes in the area and demonstrated how their formation affects both the salinity and the stratigraphy of the Gulf Coast Aquifer. INTERA also performed a series of regional model runs, using the TWDB's Central Gulf Coast GAM, to evaluate the

reasonableness of the existing DFCs and provide recommendations for alternative DFCs for the next round of regional planning. The evaluation included comparing predictive model results between the Central Gulf Coast GAM and the Lower Colorado River Basin model and comparing measured water level changes and known groundwater pumping values with those used in the development of the two groundwater models. Based on the model results, INTERA recommended changes to the groundwater management plan and the groundwater rules. We also supported the Coastal Plains GCD in developing a monitoring plan to demonstrate conformance with GMA 15 DFCs.



Evaluation of Pumping Assumptions on DFCs and Well Spacing for Coastal Plains GCD, Texas

INTERA personnel performed numerous GAM simulations to assist the Coastal Plains GCD in identifying and evaluating potential DFCs. The simulations investigated several assumptions (e.g., areal and vertical location of pumping, timing of the pumping amounts) regarding the distribution of pumping and the impacts of these assumptions on the DFC. Detailed simulations were performed to evaluate groundwater-surface water interactions and whether or not the GAM predictions are sufficiently reliable to be used in establishing DFCs. The analysis of the GAM predictions with the historical relationship between pumping and water level change suggests that the model over predicts drawdown. As a result, the calculation of MAG values based on the GAM simulations results in conservatively low estimates of the amount of pumping required to reach a DFC. To investigate the sensitivity of the Coastal Plain GCD's DFC to pumping outside of the county, INTERA performed a series of GAM simulations that removed pumping from a single county. The analysis of the "one-county pumping removed" runs indicated the DFC for Wharton County has a relatively low sensitivity to pumping in other counties. To help better assess the impacts caused by high-rate pumping wells, Coastal Plains GCD mandated that hydrogeological assessments be performed as part of the permit process. To ensure that the hydrogeological assessments are properly performed, INTERA drafted guidelines for conducting hydrological assessments including the performance of aquifer tests.



Evaluation of Large-Scale Pumping and Hydraulic Fracturing on Groundwater Resources within the Pecan Valley GCD, Texas

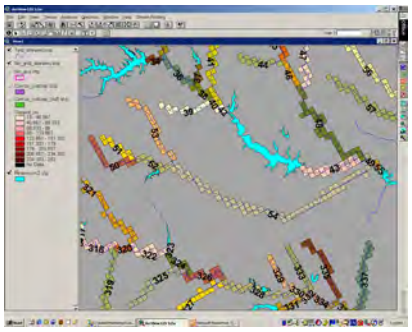
INTERA developed a conceptual model for the groundwater flow system in the Pecan Valley GCD and performed a series of groundwater simulations to evaluate the impacts of hydraulic fracturing on groundwater availability from the Gulf Coast Aquifer. The evaluation considered both local and regional impacts. The local impacts focused on estimating drawdown that occurs at existing wells within two miles of the pumping wells. As part of the project, INTERA developed a methodology for estimating local drawdown impacts using an analytical code and the aquifer hydraulic properties from TWDB's Central Gulf Coast GAM. The district was trained on applying the analytical model and on performing aquifer tests to improve the estimates of the aquifer properties. The application of the analytical model demonstrated that local pumping impacts could be significant in the Jasper Aquifer. As a result of these findings, additional work is planned for conducting pumping tests in the Jasper and developing groundwater rules to encourage pumping in the Catahoula formation.

To help evaluate the depth to which water supply wells can be drilled and still obtain fresh water, INTERA analyzed approximately 20 geophysical logs and developed maps of TDS concentration contours, sand and clay thicknesses, and aquifer boundaries. An evaluation of regional impacts primarily focused on estimating the impacts of hydraulic fracturing on Pecan Valley GCD's DFC. Based on estimates of water use by individual fracturing operations and the number of anticipated operations over the next 50 years, we adjusted the pumping estimates for the county and then re-ran the GAM simulations used to generate the DFCs. The revised GAM simulations show only a modest change in the DFCs and therefore indicate that hydraulic fracturing is not a major threat to groundwater availability at the regional scale over the next 50 years.

Development of GAMs for the Southern and Northern Portions of the Carrizo-Wilcox Aquifer, Texas

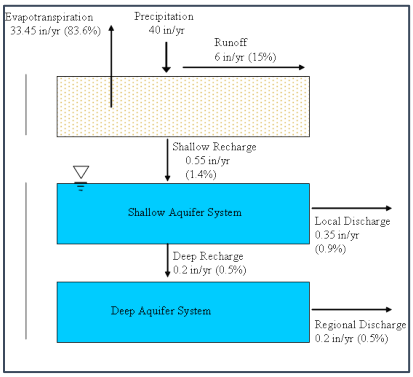
In support of the TWDB's Groundwater Availability Modeling Program, INTERA developed GAMs for the northern Carrizo-Wilcox Aquifer (Red River to the basin divide between the Trinity and Brazos Rivers) and the southern Carrizo-Wilcox Aquifer (basin divide between the Colorado and Guadalupe Rivers to the Rio Grande River). The models are being used to evaluate water management strategies and to assess the potential impacts of regional water plans. For both portions of the Carrizo-Wilcox Aquifer, INTERA developed steady-state, pre-development models and transient models that were calibrated from 1980 through 1990. The time period from 1991 through 2000 was used as a validation phase. The prediction phase is from 2001 to 2050, consistent with the state planning time horizon.

Project tasks included database development, GIS data development and presentation, model conceptualization/design, model calibration/prediction, reporting and web publishing, and stakeholder meetings. Conceptual model development included the review and assessment of: aquifer/aquitard system geometry (geology, hydrostratigraphy, outcrops, river basins, and model boundaries), water levels and regional groundwater flow, aquifer hydraulic properties, recharge, discharge (groundwater/surface water interaction and pumping), and water quality. All data, source and derived, was documented in a GIS-based geodatabase that includes metadata and was provided to the TWDB as a deliverable.



Development of the Groundwater Availability Model for the Yegua-Jackson Aquifer, Texas

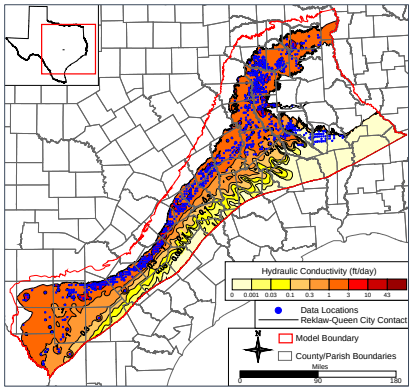
INTERA developed a three-dimensional model of the Yegua-Jackson Aquifer as part of the TWDB's Groundwater Availability Modeling Program. The Yegua-Jackson Aquifer was only recently designated by the TWDB as a minor aquifer in preparation for the 2002 Texas State Water Plan, motivated by the large number of wells producing from the aquifer. The Yegua-Jackson Aquifer runs across Texas from the Rio Grande in the southwest to the Sabine River in the northeast, and groundwater use occurs almost exclusively in the unconfined portion of the aquifer. The Yegua Formation and Jackson Group, following typical Texas Gulf Coast geology, dip deep beneath land surface all the way to the coast and beyond. However, water quality degrades quickly moving into the confined portion, rendering it unsuitable for use without further treatment. Even in the outcrop, both the yield and water quality can vary significantly over small differences in location and depth.



Under a previous contract with TWDB, INTERA had already developed the structure for the Yegua-Jackson Aquifer, including estimates of lithology. The Yegua Formation and Jackson Group were each divided into upper and lower units. We used these structural surfaces to locate wells from the TWDB groundwater database in the four units. Head measurements for the located wells were used to analyze water levels and conceptualize regional groundwater flow. Recharge to the aquifer was estimated based on analysis of discharge to streams, using hydrograph separation (to determine shallow recharge/discharge), and basic application of Darcy's law at the point where the aquifer enters the subcrop (to determine deeper recharge). In addition, topography, surficial soil conductivity, and irrigation return flow were analyzed for their impact on recharge. Little evidence was found that surficial soil conductivity and irrigation return flow have a significant impact on recharge.

Development of GAMs for the Queen City and Sparta Aquifers (includes Carrizo-Wilcox Aquifer), Texas

In support of TWDB's Groundwater Availability Modeling Program, INTERA developed three-dimensional groundwater flow models for the southern, central, and northern portions of the Queen City and Sparta aquifers. These aquifers are classified as minor aquifers and overlie the Carrizo-Wilcox Aquifer, a major Texas aquifer. Despite their classification as minor aquifers, the Queen City and Sparta are important water resources in the state and extend from the Frio River in south Texas to east Texas with the Sparta Aquifer continuing into Louisiana and Arkansas. The Queen City and Sparta GAMs presented a unique challenge in that they were added to the three existing Carrizo-Wilcox GAMs. The three Carrizo-Wilcox GAMs had significant overlap between the model boundaries, and, as a result of being developed somewhat independently by different modeling teams, differences in hydraulic



parameters and pumping distribution existed in the overlap regions. These differences were perhaps greatest in the overlap between the central and southern GAMs. INTERA's scope on the Queen City and Sparta GAMs was modified to make the Carrizo-Wilcox Aquifer GAM properties consistent in the overlap regions. Each model consists of eight layers representing the Sparta, Queen City, and Carrizo-Wilcox aquifers, as well as the intervening aquitards.

We developed the three Queen City and Sparta GAMs using MODFLOW96. The models were developed using a modeling protocol that is standard to the groundwater modeling industry and to the GAM program. Important technical issues that we addressed included hydraulic properties, recharge, and aquifer stream interaction. To develop hydraulic properties, we reviewed and summarized all available reported properties and also performed a review of the TCEQ Well Casing Log Records for pump tests and specific capacity tests. This resulted in the development of 444 additional hydraulic conductivity estimates for the Queen City Aquifer and an additional 33 for the Sparta Aquifer. To augment these values and to scale them to an aquifer scale, net sand maps and a depth trend was used to integrate the hydraulic conductivity data to the regional model scale. The resulting hydraulic conductivity field accurately represented the data while maintaining the depositional fabric.

A method was also developed to regionalize storativity data while maintaining properties consistent with aquifer lithology and confining stresses (i.e., depth of burial). We developed a recharge model that built upon BEG research and accounted for the major influences on recharge including precipitation, ET, local geology, and topography. The method was used to develop recharge estimates that were consistent with other studies in the aquifer and were consistent with the conceptual model.

For the steady-state model calibrations, INTERA used predevelopment conditions (prior to significant groundwater withdrawal). The GAMs were also calibrated to transient aquifer conditions from January 1980 through December 1989, incorporating yearly variations in recharge, ET, streamflow, and pumping. We performed checks to ensure that transient responses in model overlap regions are consistent. In addition to the standard calibration GAM requirements, INTERA focused on developing a set of models that reproduced water balances consistent with conceptual understanding.

4.2 Client References

To confirm our experience in providing hydrogeologic support services to GCDs and similar water planning and management organizations, six client references are provided below. The reference information includes the dates of our work, the scope of work, and a contact name, phone number, and email address. We welcome the District to contact all of these references to confirm our track record of proven performance.

Reference #1 – Clearwater Underground Water Conservation District

Dates of Work: 2019-2021– Present
Scope of Work: Lead a series of workshops for the Bell County Consortium for Aquifer Storage and Recovery. Evaluated suitability of different locations for specific ASR applications and provided costing information
Contact Name, Phone Number, and E-Mail Address: Dirk Aaron, General Manager, 254-933-0120; ddaron@cuwcd.org

Reference #2 – Post Oak Savannah GCD

Dates of Work: 2004 – Present
Scope of Work: Review of GAMs, support development of DFCs, updating management plans and groundwater rules, development of a well database, design of monitoring network, GMA 12 presentations, draft GMA 12 DFC submissions and resolutions, prepared documents for GMA 12 petitions.
Contact Name, Phone Number, and E-Mail Address: Gary Westbrook, General Manager, (512) 455-9900; gwestbrook@posgcd.org

Reference #3 – Coastal Bend and Coastal Plains GCDs

Dates of Work: 2008 – Present
Scope of Work: Evaluation of DFC runs using GMA 15 GAM and LCRB regional groundwater model; collection and assessment of aquifer information; assessment of brackish resources; and guidance for hydrogeologic assessments
Contact Name, Phone Number, and E-Mail Address: Neil Hudgins, General Manager, (979) 533-0804; nhudgins@cbgcd.com

Reference #4 – Victoria County GCD

Dates of Work: 2011 - Present
Scope of Work: Performed literature review, data gap analysis, and evaluation of GAM 15 GAM model and conducted stakeholder outreach to assist with the development of a science plan for future research activities.
Contact Name, Phone Number, and E-Mail Address: Tim Andruss, General Manager, (361) 579-6863; Tim.Andruss@vcgcd.org

Reference #5 – Groundwater Management Area 16

Dates of Work: 2018-Present
Scope of Work: Served as sole consultant for GMA 16 for third round of joint planning. Conducted discussion of nine factors, performed GAM simulations, and wrote Explanatory Report
Contact Name, Phone Number, and E-Mail Address: Lonnie Stewart, General Manager of Bee County GCD and Chairman of GMA 16, (361-358-2244),llouwcd@yahoo.com

Reference #6 – Harris-Galveston Subsidence District

Dates of Work: 2011 - Present
Scope of Work: Performed characterization of brackish water resources and potential subsidence risk resulting from development of those resources, and investigating the potential for subsidence from Aquifer Storage and Recovery projects.
Contact Name, Phone Number, and E-Mail Address: Michael Turco, General Manager, (832) 463-7170; mturco@subsidence.org

4.3 Portfolio of Past Work

As an additional demonstration of INTERA's experience and the quality of our deliverables, a portfolio of past work, containing three reports, is provided as **Attachment B**. These reports are:

1) Desired Future Condition Explanatory Report for Groundwater Management Area 15, minus appendices, 2nd Joint Planning Cycle
2) Desired Future Condition Explanatory Report for Groundwater Management Area 16, minus appendices, 3rd Joint Planning Cycle
3) Desired Future Condition Explanatory Report for Groundwater Management Area 14, minus appendices, 3rd Joint Planning Cycle

5.0 Opportunities and Constraints

5.0 Opportunities and Constraints

In 2022, the TWDB approved an updated GAM for the portion of the Gulf Coast Aquifer System that covers both GMA 15 and GMA 16. The updated GAM has not yet been used by GMA 15 to predict any impacts based on future pumping scenarios. Because of this, it is unknown whether the updated GAM will make predictions similar to those of the previous GAM. In 2024, the TWBD committed to making a comparison between the predictions of DFCs using the updated GAM and the previous GAM based on GMA 15's current values of MAG. INTERA cannot finalize our cost estimate for serving as GMA 15's consultant until the type and magnitude of the differences in the DFCS predicted between the two GAMs are determined. To address this, we propose that an additional first task be conducted to evaluate the differences between the two GAMs. The estimated cost of this task is $7,500.

Attachment A — Resumes

INTERA

Years of Experience: 40

Education:

- PhD, 1996, Earth Sciences, University of Waterloo
- MS, 1982, Environmental Engineering, Stanford University
- BS, 1981, Environmental Science, University of Virginia

Professional Registrations/Affiliations:

- Professional Engineer, TX, 2001, No. 88049; TN, 1987, No. 19644; MA, 2002, No. 43235
- Professional Geoscientist, TX, 2003, No. 231; TN, 1994, No. TN3727
- Certified Ground Water Professional, 2001, No. 3027410, National Ground Water Association

Professional History:

2010 – Present	Principal Geoscientist/Engineer – INTERA Incorporated, Austin, TX
2003 – 2010	Regional Manager – URS, Inc., Austin, TX
1997 – 2003	Regional Manager – HydroGeoLogic, Austin, TX
1995 – 1997	Lecturer, Graduate Courses in Hydrogeology & Numerical Methods, University of Tennessee, Knoxville, TN
1994 – 1997	Senior Hydrogeologic Consultant – P-Squared Technologies, Knoxville, TN
1982 – 1994	Project Engineer – TVA Laboratory, Norris, TN

Steve Young brings over three decades of experience in characterizing and solving water supply and groundwater remediation problems. He has worked on a wide-range of water development issues, including characterizing groundwater resources, developing and applying groundwater models, and designing water supply wellfields. His expertise includes assessing fresh and brackish groundwater resources through the analysis of geophysical logs, aquifer test data, and geochemical data. Working with water management agencies and commercial industry, Dr. Young has evaluated groundwater resources in Texas that include the Gulf Coast Aquifer System, the Northern Trinity Aquifer, and the Carrizo-Wilcox Aquifer. He has managed a wide range of water projects across Texas, working with more than 15 groundwater conservation districts (GCDs) to help develop management plans, groundwater rules, groundwater databases, and gain a better understanding of groundwater resources. He has participated in joint planning activities with several groundwater management areas and helped with the development and modification of groundwater availability models. Dr. Young has also managed groundwater remediation projects for state and federal agencies including the U.S. Departments of Defense and Energy, public utilities, and manufacturing companies.

Representative Project Experience

Technical Support for Second Round of Joint Planning in Groundwater Management Area 12, Post Oak Savannah Groundwater Conservation District, Milano, TX. 2012 – 2017. *Senior Hydrogeologist.*
Participated in approximately twenty public meetings conducted by GMA 12 to establish DFCs for the Yegua-Jackson, Brazos River Alluvium, Sparta, Queen City, and Carrizo-Wilcox aquifers. Presented information on the geohydrology, water resource strategies, water demands, and groundwater pumping for the GMA in support of establish appropriate DFCs that balance production and conservation. Worked with five GCDs and other consultants to construct alternative future pumping scenarios and applied groundwater models to evaluate the impacts on groundwater resources from the alternative pumping scenarios.

Technical Assistance for Groundwater Management Area 16 Joint Planning, Brush Country Groundwater Conservation District, Falfurrias, TX. 2010 – 2011. *Project Manager*. Provided technical support to establish DFCs and evaluate modeling results produced by GMA 16. Estimated current and future pumping, and applied the GMA 16 GAM to estimate drawdown impacts over a 60-year period. Evaluated the potential for water quality change and subsidence based on estimated drawdowns. Presented results to GMA 16 and helped develop modeling scenarios for use by the GMA for constructing DFCs. Evaluated the GMA 16 GAM for its applicability and accuracy relative to previous regional model and hydrogeological data.

Technical Assistance for Groundwater Management Area 12 Joint Planning, Post Oak Savannah Groundwater Conservation District, Milano, TX. 2005 – 2011. *Hydrogeologist/Project Manager.* Worked with District committees and through public meetings to develop DFCs for the two major aquifers and four minor aquifers. Assembled well databases and estimated current and future pumping for the District to support development of modeling scenarios for evaluation of DFCs. Applied groundwater models to develop DFCs and evaluated impacts on surface water flows, drawdowns, and groundwater flow patterns.

Technical Support for Groundwater Management Area 15 Joint Planning, Colorado County, Coastal Bend, and Coastal Plains Groundwater Conservation Districts, TX. 2009 – 2010. *Project Manager.* Assisted three GCDs in developing DFCs and estimating modeled available groundwater based on comparative evaluation of different groundwater model simulations and measured water

levels. Evaluated the strengths and weaknesses of several groundwater models and provided approaches for improving the models and estimating long-term sustainability of the groundwater resource.

Geostatistical Analysis of Monitoring Data to Evaluate Compliance with Desired Future Conditions, Central Texas Gulf Coast Groundwater Conservation District, Multiple Groundwater Conservation Districts, TX. 2019 – 2022. *Project Manager.* Led a team of hydrogeologist that assembled and analyzed water level data in order to evaluate the changes in the average annual groundwater levels from 2000 to 2022 for the counties regulated by Calhoun County Groundwater Conservation District (GCD), Refugio GCD, Texana GCD, and Victoria County GCD. The project assembled more than 6,300 measured water levels from approximately 800 wells in 13 counties in the central portion of the Texas Gulf Coast Aquifer System. Ordinary kriging of the water levels and of water level residuals was used to develop contour maps and statistical metrics for water levels in the Chicot and Evangeline aquifers. Variogram analysis and uncertainty analysis were used to quantify the uncertainty associated with the average water levels. The project demonstrated compliance for all four GCDs with the drawdown-based Desired Future Conditions and provided recommendations for future projects.

Presentation on Gulf Coast Aquifer System, Bee Groundwater Conservation District, Beeville, TX. 2011. *Project Manager.* Presented an overview of the Gulf Coast Aquifer system, the information and codes used to develop groundwater models, a comparison of the GMA 15 and 16 GAMs, and the uncertainty associated with groundwater model predictions to support the District's participation in the joint planning process. Summarized key information and data that is available for developing and evaluating DFCs and GAMs for GMAs 15 and 16.

Preparation of Waiver for Brackish Groundwater Well in Victoria County, Castleman Power, Victoria, TX. 2017 – 2018. *Project Manager and Hydrogeologist.* Prepared a hydrogeological report to address Victoria County GCD requirements for a waiver to obtain an operational permit for a non-exempt water well. Assembled and evaluated geophysical logs, aquifer pumping tests, water level data, and water quality data and developed a groundwater flow for Victoria County. Used existing groundwater management models and the recently developed groundwater flow and transport model to evaluate the impact of pumping brackish water on DFCs, drawdowns at nearby wells, groundwater availability, and changes in water quality over a 30-year period. Provided report to district that quantify simulated impact and proposed a monitoring approach. Designed and developed costs for production well and monitoring program for the client.

Expert Consultant for Industrial Brackish Water Permit, Civil Corp, Victoria County, TX. 2022. *Project Manager.* Reviewed and commented on a permit for brackish water for 2,000 AFY for industry planning on locating at the Port of Victoria. Performed analysis on geophysical logs to identify zones of brackish groundwater. Attended the permit hearing to address questions asked by the GCD and to develop a plan to produce brackish groundwater and to monitor water level and water quality changes in the aquifer.

Evaluation of Options for Measuring Land Subsidence, Victoria County Groundwater Conservation District, Victoria, TX. 2019. *Project Manager.* Prepare a report that identified and evaluated options for measuring land surface. Developed cost estimates for the most attractive methods and develop a plan for Victoria County Groundwater Conservation District to implement the most promising techniques.

Identify Brackish Groundwater and Development of a Flow and Transport Model, Victoria County Groundwater Conservation District, Victoria County, TX. 2018 – 2019. *Project Manager.* Designed a flow and transport model for the county of Victoria in the Texas Gulf Coast Aquifer system. Tasks included estimating the salinity at different depths using geophysical well logs, estimating the percentage of sand and clay in each formation, and modeling drawdown of fresh water from predictive pumping in brackish water. Simulation were conducted using FloPy with MODFLOW-NWT.

Evaluation of Impacts of Large-Scale Pumping on Groundwater Resources, Pecan Valley Groundwater Conservation District, Cuero, TX. 2011 – 2012. *Project Manager/Lead Modeler.* Developed methods for predicting the regional and local impacts of groundwater pumping to support hydraulic fracturing during the next 50 years. Prepared a report that documented the Gulf Coast stratigraphy, evaluated the assumptions and uncertainty inherent in the simulations of DFCs for GMA 15, provided estimates of fresh and brackish water by aquifer, estimated local and regional drawdown impacts caused by hydraulic fracking, and provided recommendations for spacing of large-scale pumping wells.

Wade Oliver, PG
Senior Geoscientist

Years of Experience: 17

Education:

- MS, 2008, Geology, University of Utah
- BS, 2006, Environmental Geoscience, Texas A&M University

Professional Registrations/Affiliations:

- Professional Geoscientist, TX, 2011, No. 11112
- Board Member, Texas Water Conservation Association
- Board Member, Texas Aquifer Storage and Recovery Association
- Member, Houston Advanced Research Center Groundwater Science Advisory Committee

Professional History:

2014 – Present	Senior Geoscientist and Manager of Houston Operations – INTERA Incorporated, Houston, TX
2012 – 2014	Geoscientist – INTERA Incorporated, Austin, TX
2008 – 2012	Geoscientist/Groundwater Modeler – Texas Water Development Board, Austin, TX
2007 – 2008	Research Assistant – University of Utah, Salt Lake City, UT
2006 – 2007	Environmental Technician – AQUI-VER, Inc., Park City, UT
2005	Geographic Information System Intern – Lower Colorado River Authority, Austin, TX

Specialized Training:

- MODFLOW, PEST, TTim, Groundwater Vistas, GMS
- ArcGIS, Perl, Python, STELLA, Surfer, PHREEQC

Wade Oliver has 17 years of research and applied experience focusing on the characterization of groundwater systems and the development and application of numerical flow models to analyze these systems. His experience includes characterizing the structure, water quality, and water levels of aquifers, updating aquifer management plans for groundwater conservation districts (GCDs) in Texas, and developing groundwater availability models (GAMs) to support water planning strategies for both public and private entities. To help energy companies secure reliable water for operations while protecting local fresh water supplies, Mr. Oliver also has experience in characterizing brackish aquifer resources in water-scarce areas of Texas, New Mexico, and Oklahoma. He has managed over 100 projects involving evaluations of aquifer recharge, groundwater-surface water interaction, inter-aquifer flow, and future groundwater conditions and availability for local and regional groundwater management entities in Texas. The information developed for these projects has been used to evaluate various water management strategies by GCDs and groundwater management areas (GMAs). Through this experience, he brings in-depth knowledge of groundwater planning, development, management, and regulation in Texas, especially the desired future condition (DFC) process. In modeling and data analysis studies, he has experience with groundwater codes, including MODFLOW and TTim, as well as the application of PEST for calibrating and optimizing numerical models. He has many years of experience working with the geographic information system (GIS) software ArcGIS and is a skilled Perl and Python programmer. In the environmental area, his experience includes characterizing sites with leaking underground storage tanks, evaluating the fate and transport of contaminants in surface water, and modeling complex long-term groundwater conditions in support of mine closures.

Representative Project Experience

Groundwater Joint Planning Technical Assistance, Groundwater Management Area 14, Jasper, TX. 2019 – 2022. *Project Manager and Lead Hydrogeologist.* Served as a technical expert and facilitator for the development of long-term groundwater management goals for the northern portion of the Gulf Coast Aquifer in Texas. The area includes Greater Houston and surrounding counties and has experienced significant land surface subsidence historically due to groundwater extraction. Activities included assessing aquifer uses and conditions, water supply needs and management strategies, subsidence, and environmental impacts and modeling potential future water use and management scenarios. The results of this work will guide aquifer management over a 50+ year time horizon.

Groundwater Joint Planning Technical Assistance, Groundwater Management Area 15, TX. 2014 – 2016. *Hydrogeologist.* Provided technical support and policy guidance to the GCD in GMA 15 for establishing long-term management goals for the Gulf Coast Aquifer in Texas. Activities included modeling various aquifer management strategies being considered by each of the 13 GCDs to evaluate hydrological conditions, environmental impacts, subsidence, feasibility of implementation, water supply needs, aquifer uses and conditions, alternative management strategies, and private property rights. The results of the analyses were documented in the legislatively required explanatory report accompanying the submission of DFCs for the Gulf Coast Aquifer to the TWDB.

Evaluation of Potential Desired Future Conditions Using Numerical Groundwater Flow Models, Texas Water Development Board, TX. 2008 – 2011. *Modeler.* Developed more than 20 reports detailing groundwater availability modeling analyses to assist with the development of DFCs in 12 of the 16 GMAs in Texas. GCDs within management areas are required to adopt DFCs—policy statements quantifying the desired conditions of aquifers in the future. These model runs were necessary for districts to make informed aquifer management decisions. Many analyses used various pumping and recharge inputs to efficiently communicate the impacts associated with a broad range of management scenarios.

Evaluation of Stakeholder Research Priorities, Victoria County Groundwater Conservation District, Victoria, TX. 2012. *Hydrogeologist.* Identified potential stakeholder priorities for future research in the District and developed a web-based survey to solicit stakeholder input. The responses received represented a large number of stakeholder groups, including landowners, regulatory agencies, local businesses, municipalities, and individuals with domestic and livestock wells. Results of the survey were key inputs in the evaluation of research priorities included in the District's Groundwater Science Development Plan.

Development of an Alternative Groundwater Model for the Aquifers in Groundwater Management Area 16, Texas Water Development Board, TX. 2009 – 2011. *Hydrologist.* Assisted with the development of the updated conceptual model for the Gulf Coast, Yegua-Jackson, and Carrizo-Wilcox aquifers in GMA 16. The existing GAMs for the area, specifically those for the central and southern portions of the Gulf Coast Aquifer, were found to be ineffective for evaluating potential DFCs. Collected spatially distributed precipitation information for Texas and Mexico and evaluated previous approaches for estimating recharge to the aquifers in GMA 16.

Expert Witness for Petition of Desired Future Conditions, Lone Star Groundwater Conservation District, Conroe, TX. 2017. *Technical Expert.* Served as an expert witness for Lone Star Groundwater Conservation District during a petition against the district's long-term aquifer management goals known as DFCs. Evaluated the technical merits of claims by the petitioners and provided direct written testimony and rebuttal testimony related to the hydrogeology of the northern portion of the Gulf Coast Aquifer in Texas and the scientific basis for the district's management approach. Also testified during a day-long deposition as part of the proceeding. The testimony was used by the district as it successfully settled the matter before going to trial before the State Office of Administrative Hearings.

Alternative Groundwater Availability Model for the Carrizo-Wilcox Aquifer in Panola County, Panola County Groundwater Conservation District, TX. 2015 – 2016. *Project Manager and Lead Hydrogeologist.* Developed a GAM to assist with establishing DFCs. After evaluating the results of aquifer tests, water level trends, and the distribution of sands and clays in the Wilcox formation, it was determined that an alternative tool beyond the existing state-approved GAM was needed to adequately represent the unique hydrogeologic conditions in the district. The alternative GAM allows the district to reliably evaluate the relationship between pumping and impacts to the aquifer necessary for developing groundwater management goals.

Assessment of the Reasonableness of Desired Future Conditions, Texas Water Development Board/Groundwater Management Area 9, TX. 2011 – 2012. *Lead Hydrogeologist.* Reviewed and assessed the issues raised in petitions challenging the reasonableness of the DFC for the Trinity Aquifer adopted by the GCDs in GMA 9. The technical assessment of the DFC was developed through literature review, analysis of hydrologic data, and more than 7,000 predictive simulations of the GAM for the Hill Country portion of the Trinity Aquifer using variable pumping and recharge conditions. The technical assessment, together with a legal assessment, constituted the staff recommendation that the TWDB find the DFC to be reasonable.

Development of Managed/Modeled Available Groundwater for Groundwater Conservation Districts, Texas Water Development Board, TX. 2010 – 2012. *Lead Modeler.* Coordinated timely development of more than 40 reports by a four-member team providing managed/MAG estimates for aquifers throughout Texas. MAG is the estimated average amount of water available on an annual basis from an aquifer based on the DFCs adopted by GCDs. Used the best available tools—generally GAMs but also water budget analyses—to estimate availability based on the impacts to the aquifers described in the DFCs for use by districts when managing the aquifers. This involved the application of GAMs throughout Texas, including the models for the Gulf Coast, Carrizo-Wilcox, Queen City, Sparta, and Yegua-Jackson aquifers.

Years of Experience: 20

Education:

- MS, 2007, Hydrogeosciences, Virginia Polytechnic Institute and State University
- MS, 2004, Hydrogeology and Water Resources, Nanjing University
- BS, 2001, Hydrogeology and Engineering Geology, Nanjing University

Professional Registrations/Affiliations:

- Engineer in Training (EIT), TX, 2010, No. 44547
- Member, National Ground Water Association

Professional History:

2007 – Present	Hydrogeologist – INTERA Incorporated, Austin, TX
2005 – 2007	Teaching Assistant - Virginia Polytechnic Institute and State University, Department of Geosciences, Blacksburg, VA
2006	Walter Spofford Intern – Resources for the Future, Washington, DC
2004 – 2005	Research Assistant – Department of Hydrology and Water Resources, University of Arizona, Tucson, AZ
2002 – 2004	Research Assistant – Nanjing University, Department of Earth Sciences, Nanjing, China

Specialized Training & Software:

- MODFLOW, MT3D, MODPATH, UCODE, PEST, GMS, Groundwater Vistas, Argus One
- ArcGIS, Surfer
- FORTRAN, Matlab

Tingting Yan has two decades of research and applied experience in groundwater modeling, water resources management and waste isolation. Her experience includes developing and applying groundwater flow and transport models using various versions of MODFLOW and MT3D, and parameter estimation with model optimization codes such as PEST and UCODE. Ms. Yan applies her modeling and other technical experience to lead andsupport a wide range of projects, including groundwater availability models (GAMs) of aquifers in Texas, environmental restoration at Hanford site, waste isolation at WIPP, and quantitative decision support on evaluating water management strategies in California, New Mexico, Florida, and Mississippi for several regional and local water authorities. She provides technical support on GIS mapping, programming, and database development. She is a skilled programmer in FORTRAN, Matlab, Python, and R.

Representative Project Experience

Joint Regional Planning, Groundwater Management Area 15, Victoria, TX. 2015. *Modeler.* To assist the joint planning for GMA 15, developed several pumping scenarios for the GMA 15 model. Conducted model runs and analyzed the results. Participated in water planning for each district within the management area on water supply strategies.

Groundwater Management Area 12 Joint Planning, Post Oak Savannah Groundwater Conservation District/Groundwater Management Area 12, Milano, TX. 2015. *Hydrogeologist/ Modeler.* Conducted GAM runs utilizing six future pumping scenarios to predict impact of pumping on model. Post-processed and analyzed modeling results. Generated water level and drawdown maps over time. Software was developed to assist with the evaluation of surface water and groundwater interaction. Modeling results are being used to better understand the aquifers in the region and to benefit GMA 12 regional planning and policy making.

Technical Support and Monitoring, Post Oak Savannah Groundwater Conservation District/ Groundwater Management Area 12, Milano, TX. 2015. *Hydrogeologist.* Provided technical support to the Post Oak Savannah Groundwater Conservation District (POSGCD). Tasks included evaluating the impact of the Little River Reservoir on GMA 12 modeling results. Analyzed pumping tests to obtain aquifer permeability. Mapped water quality data and assisted with well permit evaluations. Evaluated impact of faults on modeling results. Evaluated different methods of aquifer assignment at wells; compared aquifer assignment from TWDB and POSGCD in support of a testimony for a Texas Commission on Environmental Quality hearing. Prepared maps of measured water level drawdown and assisted with presentations.

Technical Support on Groundwater Management Area 12 Joint Planning, Post Oak Savannah Groundwater Conservation District/Groundwater Management Area 12, Milano, TX. 2017 – 2018. *Hydrogeologist.* Calculated and analyzed Desired Future Condition (DFC) around Post Oak area based on the most recent GAM. Developed scripts to calculate average drawdown for each county with options on various weighting methods. Supported studies on surface water and groundwater integration in the area of interest. The modeling and analysis results are being used to benefit Groundwater Management Area (GMA) 12 regional planning and policy making.

Evaluation of Desired Future Conditions, Pecan Valley Groundwater Conservation District, Cuero, TX. 2010 – 2012. *Hydrogeologist/GIS Analyst.* Provided support on the evaluation of DFCs and managed available groundwater according to the district rules,

model runs to understand the impact of pumping scenarios on average drawdown, and assessment of the impacts of pumping water supply wells for hydraulic fracturing on nearby water wells and the DFCs.

Technical Assistance for Developing Groundwater Management Plans and Groundwater Resource Assessment, Brush Country Groundwater Conservation District, Falfurrias, TX. 2010 – 2012. *Hydrogeologist/Modeler.* Work included analysis of existing wells in the Brush Country Groundwater Conservation District to develop DFCs, model runs with multiple pumping scenarios to understand the impact of pumping on average drawdown, DFC model runs, assessment of groundwater quality and groundwater availability, and hydrograph plotting.

Technical Support on Groundwater Management and Monitoring Plans, Post Oak Savannah Groundwater Conservation District, Milano, TX. 2010 – 2012. *Hydrogeologist/GIS Analyst.* Provided support on the joint planning process, changes to district rules and management plans, and studies to improve the characterization of aquifer properties and processes. Work included evaluating and updating the current database according to management plans, hydrograph plotting, GIS mapping, and water level and well information analysis to help develop desired future conditions scenarios. Also conducted model runs to understand the impact of groundwater pumping associated with the Alcoa Permit.

Revised Groundwater Availability Model of the Northern Trinity and Woodbine Aquifers, North Texas, Northern Trinity, Prairielands, and Upper Trinity Groundwater Conservation Districts, TX. 2013 – 2014. *Hydrogeologist.* Part of a team responsible for revising and updating this GAM to provide the GCDs with a more accurate modeling tool for assessing groundwater conditions and availability over a 50-year planning period. Specific responsibilities included evaluation and incorporation of water-level data; collection, analysis, and implementation of pumping data; and model documentation.

Evaluation of Impaired Groundwater, Tarrant Regional Water Authority/City of Wichita Falls, TX. 2014 – 2015. *Modeler and Hydrogeologist.* Performed a hydrogeological study for a 10-county area to identify and rank potential sites for pumping brackish groundwater to mix with surface water supplies. Transmissivity values for aquifers were generated and evaluated based on analysis of geophysical logs, aquifer pumping tests, and measured water quality parameters. The ranking criteria for the alternative well sites was based on a cost benefit analysis that included consideration for long-term and short-term reliability and costs. Conducted groundwater availability study at several well sites by adding drain cells into the base model to represent future pumping; worked on validating aquifer hydraulic properties; evaluated impact of different future pumping scenarios on groundwater resources using DFC model run as a base run.

Identification of Potential Brackish Groundwater Production Area for Gulf Coast Aquifer System, Texas Water Development Board, Gulf Coast, TX. 2016. *Technical Support/ GIS Analyst.* This study was performed for and funded by Texas Water Development Board (TWDB) to support the understanding and delineation of brackish groundwater resources for the Gulf Coast Aquifer System, a major aquifer that underlies all or parts of 56 counties along the Texas Gulf Coast. INTERA collected and analyzed data to define geologic structure, sand intervals, salinity zones and potential brackish production areas. Activities includes supporting visualization of the salinity zones, developing figures for reports and assembling geodatabase. The results of this project support TWDB to meet legislation goals.

Update of the Central Groundwater Availability Model for the Queen City/Sparta Aquifer, Post Oak Savannah Groundwater Conservation District, Milano, TX. 2014. *Modeler.* Updated the GAM with more accurate pumping data associated with operating the Sandow Mine from 1988 to 1999. Incorporated new pumping data, analyzed the results, evaluated the differences in simulated water levels between the updated and original models, and documented the results. The results showed that changes made to the pumping rates associated with the Sandow Mine from 1988 to 2000 primarily impact the Simsboro Formation and have a negligible effect on the ability of the GAM to reproduce measured water levels at the regional scale.

Brackish Groundwater Assessment, Coastal Plains Groundwater Conservation District, Bay City, TX. 2009 – 2012. *Hydrogeologist/GIS Analyst.* Responsible for creating interfaces of freshwater, slightly saline water, and moderately brackish groundwater to define the volumes of the three types of water in Matagorda County and for delineating transmissivity of the Chicot, Evangeline, and Jasper aquifers to help assess the feasibility and economics of producing brackish groundwater.

Cody Draper, PG
Geoscientist

Years of Experience: 6

Education:

- MS, 2019, Geological Sciences, The University of Texas
- BS, Special Honors, 2017, Geology, The University of Texas

Professional Registrations/Affiliations:

- Professional Geoscientist, TX, 2021, No. 15238

Professional History:

2019 – Present	Geologist – INTERA Incorporated, Austin, TX
2014 – 2019	Research/Teaching Assistant – Jackson School of Geosciences, Austin, TX
2018	Geoscience Intern – ExxonMobil, Spring, TX
2017 - 2018	Geology Intern – EOG Resources Inc., Artesia, NM and Midland, TX

Specialized Training:

- Petrel, Petra, ArcGIS, QGIS, Global Mapper, IHS Kingdom, Adobe Illustrator, Affinity Designer
- 40-Hour General Site Workers Training, OSHA 29 CFR 1910.120(e)(3), 2019

Cody Draper is a geologist and stratigrapher who is experienced in prospecting and evaluating water plays. He commonly leverages existing oil and gas data to map and delineate fresh and brackish water zones in a wide variety of environments, from onshore fractured aquifers to offshore groundwater reservoirs. His clients include private industrial water users, litigators, private equity, and public agencies. His experience covers seismic surveys, electromagnetic surveys, petrophysics, geochemistry, core and cuttings, and aquifer testing. Mr. Draper is also a manger of the Aquifer Characterization Group, and has been responsible for projects with budgets in excess of $375k. He has led the Aquifer Characterization Group through developing new models for unexplored aquifers and has pioneered the geophysics capability of INTERA. Through his work and management, Mr. Draper is a proven leader and expert in developing and understanding groundwater systems.

Representative Project Experience

Burnet County Hydrogeologic Study, Burnet County, TX. 2022 – Present. *Lead Stratigrapher.* Performed stratigraphic analysis of the aquifers of Burnet County, using information gained in the last 10 or so years through water availability studies, well permitting, and monitoring activities from Central Texas GCD. Includes development of stratigraphic surfaces of the Llano Uplift and Trinity Aquifers based on geophysical logs, interpolation of surfaces and creation of cross sections to visualize the formation occurrence and thicknesses.

Bell County Aquifer Storage and Recovery Potential Study, Clearwater Underground Water Conservation District, Bell County, TX. 2020. *Geologist.* Tasked with well correlation and fault study to delineate aquifers in Bell County. Demarcated high-quality aquifer units via analysis of gamma ray, spontaneous potential, and resistivity logs. The following surface mapping gave estimates at the depth to potential Aquifer Storage and Recovery (ASR) targets. Examined findings in light of existing literature to prove contributions.

Subsurface Mapping and Petrophysical Analysis, Post Oak Savannah Groundwater Conservation District, Milano, TX. 2019 – 2020. *Geologist.* Tasked with subsurface structure, isopach, and net sand mapping. Correlated geophysical logs over the 13-county area to provide necessary maps. Characterized the aquifers at the meter scale by extensive petrophysical analysis of gamma ray, spontaneous potential, and resistivity logs to determine water quality, sand content, and reservoir quality. Created and processed information in ArcGIS for the final report.

Hydrogeologic Prospecting in an Arid Environment, Confidential Client, South TX. 2022 – Present. *Geologist.* Developed hydrogeologic assessment for ranch supply water in an arid environment. Began with analyzing potential for reusing oil and gas wells in a P-13 procedure. Developed other water options from previously unknown and underexplored aquifers not used for public supply, but often used for waterflood operations downdip. Planned future drilling campaign and high-graded certain well locations.

Hydrogeologic Assessment in Support of Excellent Quality Water, Confidential Client, Eastern Shelf, Midland Basin, TX. 2022 – Present. *Geologist.* Developed hydrogeologic assessment to supply for green hydrogen development. Began with interpreting wireline logs to provide definitions for aqufiers and units. Brought in water wells from public databases. Provided interpretations and professional opinions on groundwater pumping situation in the area and advised client on groundwater development strategy. Provided two options for groundwater development of unused aquifers.

Hydrogeologic Assessment in Support of Excellent Quality Water, Confidential Client, Midland Basin, TX. 2022 – Present. *Geologist.* Developed hydrogeologic assessment to supply for green hydrogen development. Began with interpreting wireline logs to provide definitions for aqufiers and units. Brought in water wells from public data bases. Provided interpretations and

professional opinions on groundwater pumping situation in the area and advised client on groundwater development strategy. Interfaced with regulator to determine their tolerances for future developments.

Hydrogeologic Assessment in Support of Excellent Quality Water, Confidential Client, South TX. 2022. *Geologist.* Developed hydrogeologic assessment to supply for green hydrogen development. Began with interpreting wireline logs to provide definitions for aquifers and units. Brought in water wells from public data bases. Provided interpretations and professional opinions on groundwater pumping situation in the area and advised client on groundwater development strategy. Provided client with several aquifer options and developed ranking system for options.

Hydrogeologic Assessment in Support of Excellent Quality Water, Confidential Client, Gulf Coast, TX. 2022. *Geologist.* Developed hydrogeologic assessment to supply for green hydrogen development. Began with interpreting wireline logs to provide definitions for aquifers and units. Brought in water wells from public data bases. Provided interpretations and professional opinions on groundwater pumping situation in the area and advised client on groundwater development strategy.

Data Analysis and Geologic Model Constrains for a Frac Sand Mine, Confidential Client, West TX. 2022. *Geologist*. Analyzed a well field in an unconfined aquifer to determine geologic parameters influencing water production volumes. Parameters evaluated include depth to base of aquifer, TD of well, screen length, and quality of sand as determined by petrophysical logging. Ultimately, a weak-moderate correlation was established with one parameter. Summarized findings in report and provided guidance on future drilling efforts.

Stratigraphic Analysis in Pursuit of Developing CO_2 Injection Target, Confidential Client, North Central TX. 2022. *Geologist.* Using publicly available data and well database subscription, executed a preliminary search for a carbon dioxide injection target for a renewable natural gas plant in North Central texas. Compiled information including petrophysical logs, well test data, production data, and injection data. Analyzed all information to find a target that did not interfere with current production trends and had low enough pressure to inject sufficient volumes.

Stratigraphic Analysis to Renew UIC Permit, Confidential Client, Southeast TX. 2022 – Present. *Geologist.* Assisted with the permitting process for a UIC renewal in Southeast Texas. Compiled information including petrophysical logs, well test data, production data, and injection data. Reviewed existing permit information and publically available data. Generated report chapter and series of figures to support.

Hydrogeological Analysis in Support of Land Sales, Confidential Client, West TX. 2022. *Geologist.* Developed hydrogeologic assessment to supply in support of a land deal. Began with interpreting wireline logs to provide definitions for aquifers and units. Brought in water wells from public data bases. Provided interpretations and professional opinions on groundwater pumping situation in the area and advised client on groundwater development strategy.

New Aquifer Exploration Strategy, Confidential Client, Southern US, 2021 – Present. *Geologist/Manager.* Performing a feasibility study for a newly discovered aquifer. Tasks include interfacing with regulatory bodies, scavenging for prior data, examining tests from oil and gas wells in region, and looking for a buyer for the anticipated water. Interfaced with teammates and client to develop presentations.

Groundwater Prospecting and Permitting Assistance, Confidential Client, Pyote, TX. 2021 – Present. *Geologist.* Using publicly available data to develop an approach to drilling and permitting a water well on state land in Texas. Traveled to field to oversee well development and log cuttings.

Structural Analysis in Pursuit of Groundwater Prospecting, Confidential Client, West Texas. 2021 – Present. *Geologist.* Performing an aquifer assessment on an understudied aquifer in Texas. Used publicly available data to analyzed and identify structural trends that impact water productivity. Developed a geophysical imaging plan and analyzed results. Created plans for a drilling campaign. Traveled to field site to oversee and execute the drilling campaign, which included 5 wells, 4 in an existing aquifer concept, and 1 in a new unexplored aquifer.

Andrew Osborne
Hydrogeologist

INTERA

Years of Experience: 4

Education:

- MS, 2021, Geology, University of South Carolina
- BS, 2019, Geology, Louisiana State University

Professional History:

2021 – Present	Hydrogeologist – INTERA Incorporated, Houston, TX
2019 – 2021	Graduate Assistant – University of South Carolina – School of the Earth, Ocean & Environment, Columbia, SC

Specialized Training:

- Python, MODFLOW, TTIM, MATLAB, ArcMap, CrystalMaker, MS Office

Andrew Osborne graduated with a M.S. in Geological Sciences from the University of South Carolina in 2021, where he studied worldwide groundwater discharge from continental shelves and its impact on ocean chemistry. He works mainly in the Water Resources Line of Business at INTERA, communicating with clients and working on projects involving water planning and evaluation of new production wells. Most of his professional experience has involved working with local and regional groundwater management entities in Texas. He has experience with numerical model postprocessing programs like FloPY and Pyemu, experience using ArcMap, FloPy, various versions of MODFLOW, and is proficient in Python and MATLAB. Mr. Osborne also has experience with well log interpretation and large-scale basin analysis for long-term localized groundwater availability studies.

Representative Project Experience

Production Allocation and Well Spacing Rules Evaluation for Hemphill Groundwater Conservation District, TX. 2022 – Present. *Hydrogeologist.* Developed a small MODFLOW 6 model and synthesized aquifer and well production data to evaluate the District's well spacing rules and assisted the District in deciding potential changes to their rules.

Groundwater Model for Southwestern Travis County Groundwater Conservation District, TX. 2022 – Present. *Modeler.* Developed a numerical model to assist Southwestern Travis County Groundwater Conservation District (GCD), as well as Hayes County GCD, in evaluating permit for several proposed pumping wells and their potential impact on nearby production wells and springsheds.

Annual Report Updates for Northern Trinity Groundwater Conservation District, TX. 2022 – Present. *Hydrogeologist.* Assists the District in updating their Annual Report, involved synthesis of production, monitoring well, and water quality data.

Exempt Use Estimates for Prairielands Groundwater Conservation District, TX. 2022. *Hydrogeologist.* Synthesized several data types from different sources to estimate the amount of un-metered groundwater produced within Prairielands GCD.

Modeling for the City of Bryan, TX. 2022. *Hydrogeologist*. Used the Central Carrizo-Wilcox GAM to provide the City of Bryan groundwater modeling services to assess the potential impacts of regional pumping on the City's wells in the Simsboro Aquifer. The project involved adding the proposed production to the model and generating hydrographs of the impacts through time.

Drought Plan for Prairielands Groundwater Conservation District, TX. 2022. *Hydrogeologist.* Collected and synthesized several types of data to develop a production-adjustment strategy the District can use during times of drought to ensure that all users within their jurisdiction have access to sufficient water resources.

Monitoring Well Network for Prairielands Groundwater Conservation District, TX. 2022. *Hydrogeologist.* Assisted in the design and development of a comprehensive framework to develop a monitoring well network in Prairielands GCD. The project involved synthesizing well data to locate and identify both current and potential monitoring wells based on their location, water level history, and screened aquifer layer.

Well Spacing Tool, Prairielands Groundwater Conservation District, TX. 2021. *Hydrogeologist.* Developed python scripts which incorporated the Cooper-Jacob formula and the Northern Trinity Groundwater Availability Model to calculate minimum spacing requirements for new wells in Prairielands Groundwater Conservation District (GCD).

Groundwater Availability Studies for Texas Groundwater Conservation Districts. 2021 – Present. *Hydrogeologist.* Performed numerous hydrogeologic report reviews and subsequent groundwater availability studies using TTIM and MODFLOW to evaluate permit applications for new groundwater wells in various GCDs.

Attachment B — Portfolio of Past Work

INTERA

DESIRED FUTURE CONDITION EXPLANATORY REPORT FOR GROUNDWATER MANAGEMENT AREA 15

This report was considered and approved by the member districts of Groundwater Management Area 15 on June 14, 2016.

Member Districts:

1. Aransas County Groundwater Conservation District
2. Bee Groundwater Conservation District
3. Calhoun County Groundwater Conservation District
4. Coastal Bend Groundwater Conservation District
5. Coastal Plains Groundwater Conservation District
6. Colorado County Groundwater Conservation District
7. Corpus Christi ASR Conservation District
8. Evergreen Underground Water Conservation District
9. Fayette County Groundwater Conservation District
10. Goliad County Groundwater Conservation District
11. Pecan Valley Groundwater Conservation District
12. Refugio Groundwater Conservation District
13. Texana Groundwater Conservation District
14. Victoria County Groundwater Conservation District

Technical Consultancy and Support Provided by:

INTERA
GEOSCIENCE & ENGINEERING SOLUTIONS

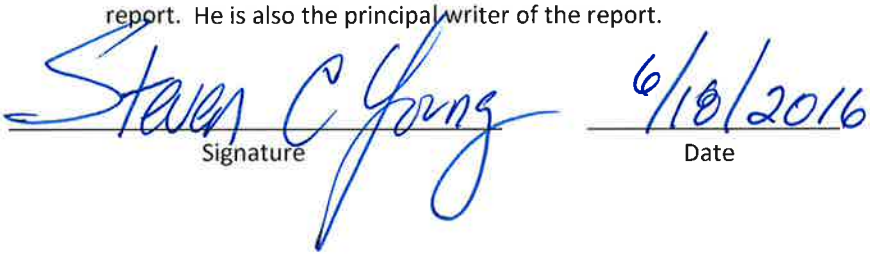
Steven Young, PhD, PE, PG

INTERA Incorporated
1812 Centre Creek Drive
Suite 300
Austin, TX 78754
512-425-2000

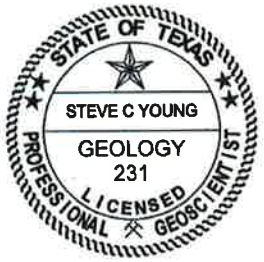
Geoscientist Seal

Steven C. Young, P.G., P.E., Ph.D.

Dr. Young was the technical lead responsible for assembling, interpreting, and documenting the information in the explanatory report. He is also the principal writer of the report.



Signature Date



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ACROYNMS AND ABBREVIATIONS

AFY	acre feet per year
ASCRD	Aquifer Storage & Recovery Conservation District
CGC GAM	Central Gulf Coast Aquifers GAM
DFC	Desired Future Condition
GAM	groundwater availability model
GMA	Groundwater Management Area
GW-SW	Groundwater-surface water
HB	House Bill
INTERA	INTERA Incorporated
LCRB	Lower Colorado River Basin
MAG	modeled available groundwater
RFP	request for proposal
RMSE	root mean square error
TERS	total estimated recoverable storage
TWDB	Texas Water Development Board
UWCD	Underground Water Conservation District

1.0 INTRODUCTION

1.1 GMA 15

Groundwater Management Areas (GMAs) were created "in order to provide for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence caused by withdrawal of water from those groundwater reservoirs or their subdivisions, consistent with the objectives of Section 59, Article XVI, Texas Constitution, groundwater management areas may be created..." (Texas Water Code §35.001).

The responsibility for GMA delineation was delegated to the Texas Water Development Board (TWDB). (Section 35.004, Chapter 35, Title 2, Texas Water Code). The initial GMA delineations were adopted on December 15, 2002, and are modified as necessary according to agency rules. There are 16 GMAs in Texas. **Figure 1-1** shows the boundaries of these 16 GMAs, including GMA 15. **Figure 1-2** shows the location of the 14 Groundwater Conservation Districts (GCDs) that are contained wholly or in part within the boundary of GMA 15: These 14 GCDs are Aransas County GCD, Bee GCD, Calhoun County GCD, Coastal Bend GCD, Coastal Plains GCD, Colorado County GCD, Corpus Christi Aquifer Storage & Recovery Conservation District (ASRCD), Evergreen Underground Water Conservation District (UWCD), Fayette County GCD, Goliad County GCD, Pecan Valley GCD, Refugio GCD, Texana GCD, and Victoria County GCD.

In GMA 15, the TWDB recognizes two major aquifers and three minor aquifers. **Figure 1-3** shows the footprints of the two major aquifers, the Gulf Coast and the Carrizo-Wilcox aquifers. The Carrizo-Wilcox occurs only as a subcrop in the four most up-dip counties, DeWitt, Karnes, Lavaca, and Fayette counties. **Figure 1-4** shows the footprints of the minor aquifers, which are the Yegua-Jackson, the Sparta and the Queen City aquifers. These three minor aquifers only occur as subcrops in Fayette County. **Table 1-1** is a stratigraphic column showing relative age and placement of the aquifers.

Table 1-1 A simplified stratigraphic column for GMA 15 (modified from Young and others, 2010)

EPOCH	Hydrogeologic Unit	
Holocene	Chicot Aquifer	Gulf Coast Aquifer
Pleistocene		
Pliocene		
Miocene	Evangeline Aquifer	
	Burkeville Confining Unit	
	Jasper Aquifer	
Oligocene	aquitard	
Eocene	Yegua-Jackson Aquifer	
	Sparta Aquifer	
	Queen City Aquifer	
	aquitard	
Paleocene	Carrizo-Wilcox Aquifer	

In this report, the Gulf Coast Aquifer will be divided into four major hydrogeologic units, which are shown in Table 1-1. These four units are, from youngest to oldest, the Chicot Aquifer, the Evangeline Aquifer, the Burkeville Confining Unit, and the Jasper Aquifer.

There are fourteen counties in GMA 15. **Table 1-2** lists the fourteen counties and their area and population projects. In 2010, the fourteen counties had a population of 369,500 people, and the county with the largest population was Victoria County, with 86,800 people. The population of the fourteen counties is expected to grow to 473,000 people in 2070, with Victoria expanding to a population of 116,500 people.

Table 1-2 Population projection from the 2017 State Water Plan by county and the area for the counties

County Name	Area (sq miles)[1]	2010[2]	2020	2030	2040	2050	2060	2070
Aransas	252	23,158	24,463	24,991	24,937	25,102	25,103	25,104
Bee	880	31,861	33,478	34,879	35,487	35,545	35,579	35,590
Calhoun	506	21,381	24,037	26,866	29,622	32,276	34,906	37,454
Colorado	960	20,874	21,884	22,836	23,544	24,582	25,449	26,293
DeWitt	909	20,097	20,855	21,555	21,900	22,216	22,425	22,572
Fayette	950	24,554	28,373	32,384	35,108	37,351	39,119	40,476
Goliad	852	7,210	8,427	9,519	10,239	10,545	10,759	10,884
Jackson	829	14,075	14,606	15,119	15,336	15,515	15,627	15,699
Karnes	747	14,824	15,456	15,938	15,968	15,968	15,968	15,968
Lavaca	970	19,263	19,263	19,263	19,263	19,263	19,263	19,263
Matagorda	1,100	36,702	39,166	41,226	42,548	43,570	44,296	44,815
Refugio	770	7,383	7,687	7,929	7,985	8,119	8,175	8,213
Victoria	882	86,793	93,857	100,260	105,298	109,785	113,470	116,522
Wharton	1,086	41,280	43,804	46,614	48,860	50,804	52,599	54,189
GMA 15 Total		369,455	395,356	419,379	436,095	450,641	462,738	473,042

[1] Source of county areas is http://www.indexmundi.com/facts/united-states/quick-facts/texas/land-area#table

[2] 2010 is based on the United States Census

1.2 Joint Planning Process

The joint-planning process was first adopted by the Texas Legislature with the passage of House Bill (HB) 1763 in 2005. One of the requirements of HB 1763 is that, where two or more districts are located within the same boundaries of GMA, the districts shall establish Desired Future Conditions (DFCs) for all relevant aquifers in the GMA by no later than September 1, 2010 and every five years thereafter.

DFCs are defined in Title 31, Part 10, §356.10 (6) of the Texas Administrative Code as "the desired, quantified condition of groundwater resources (such as water levels, spring flows, or volumes) within a management area at one or more specified future times as defined by participating groundwater conservation districts within a groundwater management area as part of the joint planning process."

The specified future time extends through at least the period that includes the current planning period for the development of regional water plans pursuant to §16.053, Texas Water Code, or in perpetuity, as defined by participating districts within a GMA as part of the joint planning process. DFCs have to be physically possible, individually and collectively, if different DFCs are stated for different geographic areas overlying an aquifer or subdivision of an aquifer.

The joint-planning process was expanded significantly by the passage of Senate Bill 660 in 2011. The more substantive elements of the expanded process include: (1) new requirements that an explanatory report be developed and submitted at the conclusion of the joint-planning process to document that certain required factors for consideration have been addressed; (2) a change from requirements involving estimates of managed available groundwater to modeled available groundwater (MAG) (including the process for addressing exempt use); (3) new requirements for individual districts to provide for a 90-day public comment period, during which the individual district is to a hold public hearing on proposed DFCs before final adoption by at least two thirds of the district representatives in the GMA; and (4) as soon as possible after final adoption of the DFCs by district representatives in the GMA, individual districts are finally then to adopt the DFCs. Solely applicable to the current round of joint-planning, the deadline for adopting proposed DFCs was extended to May 1, 2016, by the passage of Senate Bill 1282 by the Texas Legislature in 2013.

If a GMA includes more than one district, those districts must engage in a joint planning process, including at least an annual meeting. The districts must jointly determine the DFCs for the management area and, in doing so, are required to consider the nine following factors:

1. aquifer uses or conditions within the management area, including conditions that differ substantially from one geographic area to another;
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;
8. the feasibility of achieving the DFC; and
9. any other information relevant to the specific DFCs.

After DFCs are adopted by a GMA, the TWDB calculates Modeled Available Groundwater (MAG) based on the DFCs. A MAG is defined in Title 31, Part 10, §356.10 (13) of the Texas Administrative Code as "the amount of water that the executive administrator determines may be produced on an average annual basis to achieve a desired future condition."

1.3 GMA 15 Joint Planning

The joint-planning process established by HB 1763 in 2005 and amended by Senate Bill 660 in 2011 is a public, transparent process, where all planning decisions are made in open, publicly noticed meetings in accordance with provisions contained in Texas Water Code Chapter 36. From 2012 to 2015, GMA 15 convened 18 times within the boundary of the GMA at the dates listed in **Table 1-3**. All of the meetings were open to the public. All meeting notices were posted at least 10 days in advance of the meeting and included an invite to submit comments, questions, and requests for additional information to Tim Andruss of the Victoria County GCD by mail at 2805 N. Navarro St. Suite 210, Victoria, TX 77901, by email at admin@vcgcd.org, or by phone at (361) 579-6883.

Table 1-3 lists the dates and the major discussion topics of the GMA 15 joint planning meetings from 2012 to 2015. **Appendix A** contains the meeting notices and the minutes for the meetings. In June 2013, GMA 15 selected INTERA Incorporated (INTERA) to be their technical consultant. INTERA performed the groundwater availability model (GAM) simulations for GMA 15, provided technical guidance, and supported the preparation of this explanatory report.

Table 1-3 List of meetings that were convened GMA 15 from 2012 to 2016

Meeting Date	Quorum Present	Major Discussion Topic
June 20, 2012	Yes	Discussed joint planning requirements, groundwater monitoring and DFC compliance, regional water planning
October 10, 2012	Yes	GCDs report on recent and on-going hydrogeology projects, methods for estimating groundwater usage, appointed officers, interlocal GCD agreements, discussion of GCD management plans
February 14, 2013	Yes	Aquifer use and measured groundwater levels, RFP for hiring a consultant, possible use of LCRB model as alternative groundwater model
April 11, 2013	Yes	Population estimates, GCD annual reports, responses from RFP for consultant
June 13, 2013	Yes	GCD Management Plans, population estimates, INTERA selected as consultant
October 10, 2013	Yes	Lavaca GCD dissolved, regional water planning, GCD management plans, officer election
January 9, 2014	Yes	Regional water planning, review of GCD management plans, PDFCs, anticipated future pumping scenarios for GAM runs
April 10, 2014	Yes	Pumping scenarios for GAM Runs, assessment of GCD management plans on DFCs, TWDB report on an updated GAM*
July 10, 2014	Yes	Assessment of GCD management plans on DFCs, baseline and high-production pumping scenarios
October 9, 2014	Yes	GCD management plans, regional water planning, submitted INTERA files on water budgets, TERS, historical pumping
January 8, 2015	Yes	Social economic impact of DFCs, aquifer sustainability
April 9, 2015	Yes	Regional water planning issues, future pumping scenarios, impacts of drought on DFCs
July 15, 2015	Yes	Feasibility of DFCs, INTERA presentation, considerations regarding subsidence, social economic, personal property
August 13, 2015	Yes	Review of INTERA DFC pumping runs
October 8, 2015	Yes	Review of DFC pumping runs, review DFC adoption steps
December 9, 2015	Yes	Review of nine factors to consider regarding DFCs
January 16, 2016	Yes	Proposed DFCs
April 29, 2016	Yes	District Summaries of Public Comment Period, Adoption of DFCs

During the GMA 15 meeting on January 14, 2016, GMA 15 designated the draft Groundwater Management Area 15 Desired Future Conditions language, with modification, as the Proposed Desired Future Conditions of Groundwater Management Area 15. As required by Texas Water Code Section

36.108(d-2), the proposed DFCs were subsequently distributed to the individual districts in GMA 15. A period of not less than 90 days was provided to allow for public comments on the proposed DFCs; during this comment period, each district held a public hearing on the proposed DFCs. **Table 1-4** lists the date that each district conducted a public hearing on the proposed DFCs.

Table 1-4 Public hearings conducted by the GCDs regarding the proposed DFCs

GCD	Public Hearing Date
Aransas County GCD	March 23, 2016
Bee GCD	March 23, 2016
Calhoun County GCD	April 18, 2016
Coastal Bend GCD	April 25, 2016
Coastal Plains GCD	April 25, 2016
Colorado County GCD	April 27, 2016
Corpus Christi ASRCD	February 4, 2016
Evergreen UWCD	April 22, 2016
Fayette County GCD	March 7, 2016
Goliad County GCD	April 18, 2016
Pecan Valley GCD	April 19, 2016
Refugio GCD	April 18, 2016
Texana GCD	April 14, 2016
Victoria County GCD	April 15, 2016

Figure 1-1 Delineation of 16 groundwater management zones in Texas (obtained from http://www.twdb.texas.gov/groundwater/management_areas/index.asp)

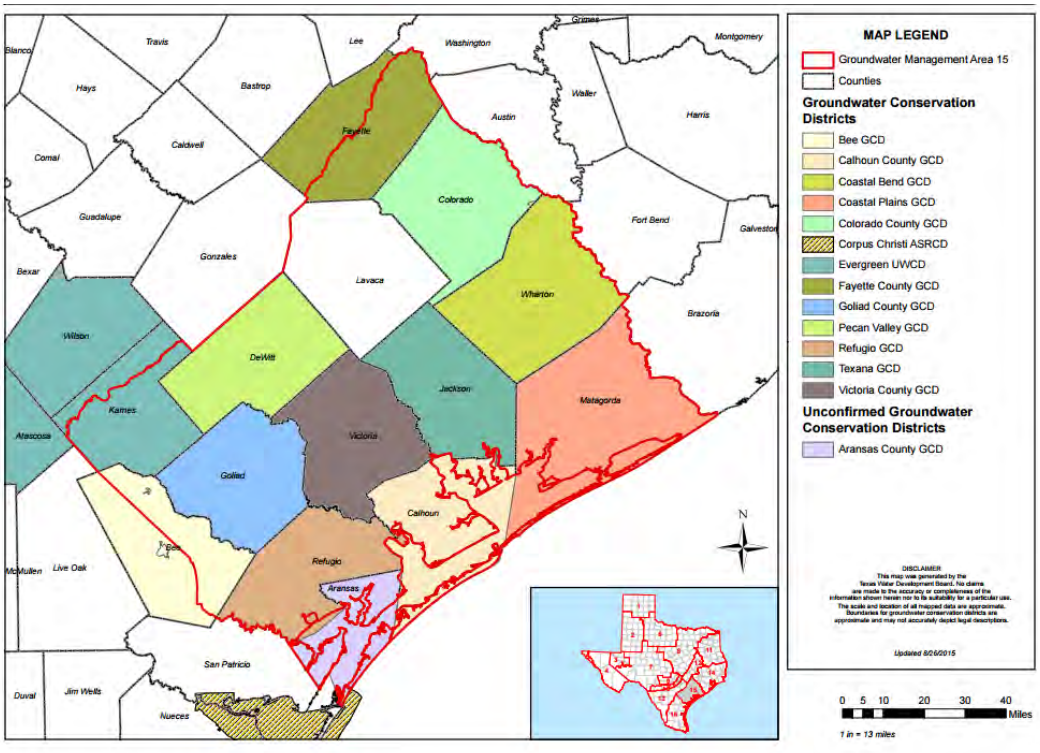

Figure 1-2 Delineation of GMA 15 showing locations of GCDs (obtained from http://www.twdb.texas.gov/groundwater/management_areas/gma15.asp)

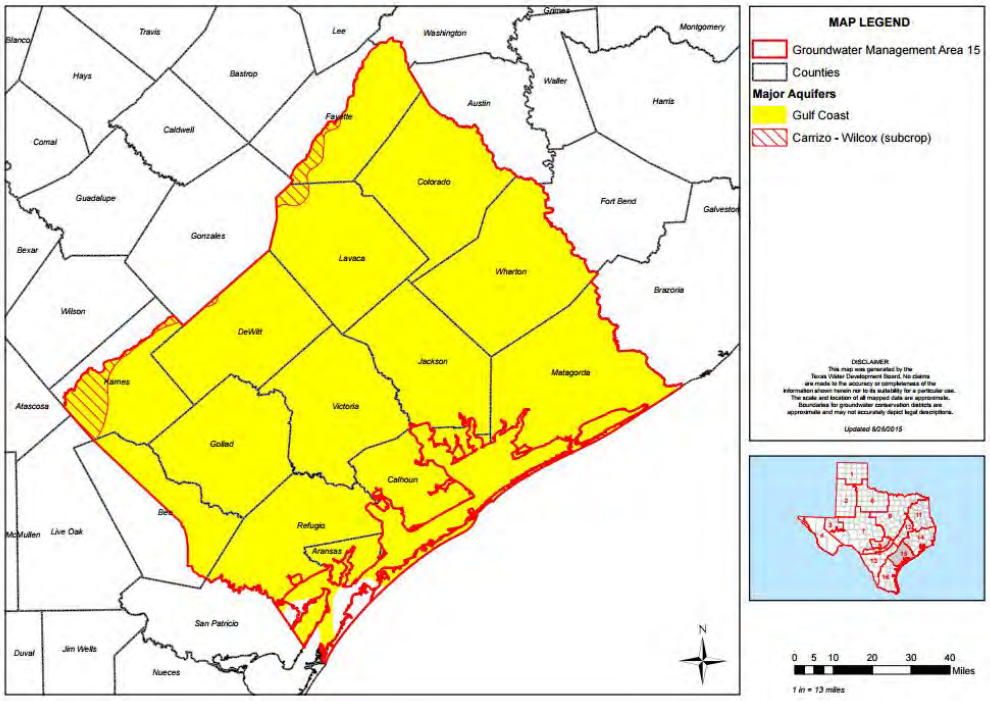

Figure 1-3 Map of GMA 15 major aquifer boundaries (obtained from http://www.twdb.texas.gov/groundwater/management_areas/gma15.asp)

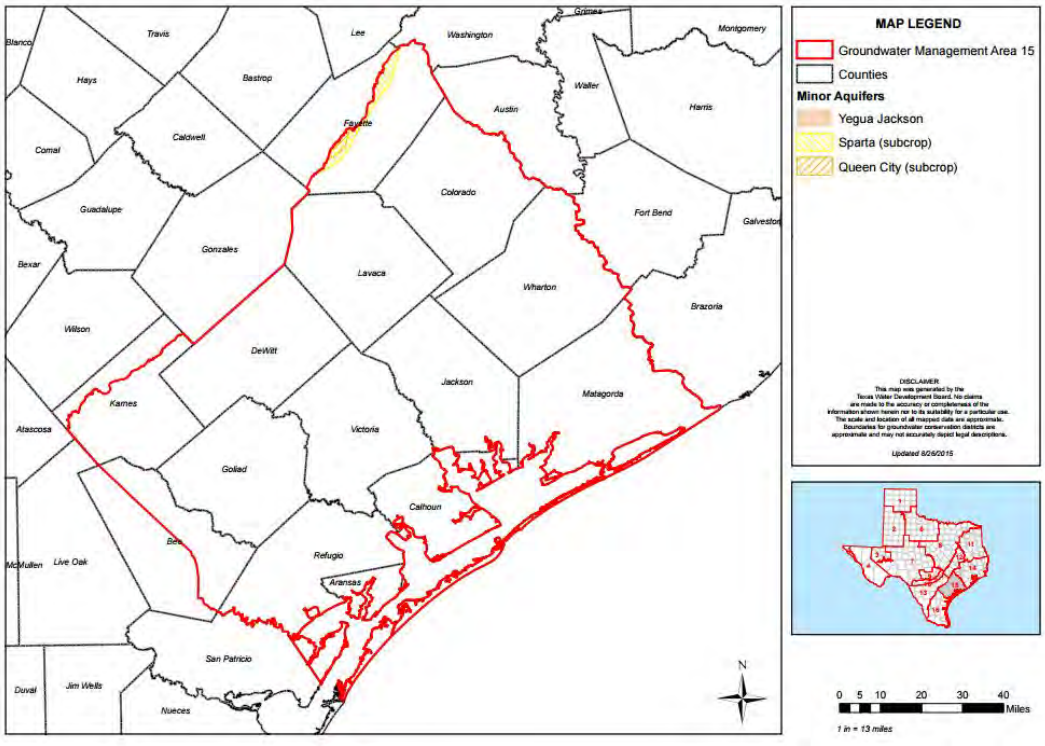

Figure 1-4 Map of GMA 15 minor aquifer boundaries (obtained from http://www.twdb.texas.gov/groundwater/management_areas/gma15.asp)

2.0 GMA 15 DESIRED FUTURE CONDITIONS

2.1 Gulf Coast Aquifers

The three Gulf Coast aquifers of interest are the Chicot Aquifer, the Evangeline Aquifer, and the Jasper Aquifer. As shown in Table 1-1, the Burkeville Confining Unit lies between and separates the Evangeline and the Jasper aquifers. For the purpose of establishing DFCs, GMA 15 has adopted the boundaries in the Central Gulf Coast GAM (CGC GAM) (Chowdhury and others, 2004) to define the areas and volumes associated with the Chicot Aquifer, Evangeline Aquifer, the Jasper Aquifer, and the Burkeville Confining Unit.

On April 29, 2016, GMA 15 Representatives approved resolution 2016-01 titled Resolution to Adopt the Desired Future Conditions for Groundwater Management Area 15. **Appendix B** contains the resolution. The adopted DFCs are based on acceptable levels of drawdown for each county and the entire groundwater management area from 2000 to 2070. Groundwater Management Area 15 adopts Desired Future Conditions (DFCs) as average drawdowns that occur between January 2000 and December 2069 for the following:

Gulf Coast Aquifer System – represents an average drawdown for the Chicot Aquifer, the Evangeline Aquifer, the Burkeville Confining Unit, and the Jasper Aquifer that is weighted by the area of each hydrogeological unit in the Central Gulf Coast Aquifer GAM (Chowdhury and others, 2004).

Chicot and Evangeline Aquifers – represents an average drawdown for the Chicot Aquifer and the Evangeline Aquifer that is weighted by the area of each hydrogeological unit in the Central Gulf Coast Aquifer GAM (Chowdhury and others, 2004).

Jasper Aquifer- represents an average drawdown for the area of the Jasper Aquifer in the Central Gulf Coast Aquifer GAM (Chowdhury and others, 2004).

Groundwater Management Area 15 adopts Desired Future Conditions for each county within the groundwater management area (county-specific DFCs) and adopts a Desired Future Condition for the counties in the groundwater management area (GMA-specific DFC). The Desired Future Condition for the counties in the groundwater management area shall not exceed an average drawdown of 13 feet for the Gulf Coast Aquifer System at December 2069. Desired Future Conditions for each county within the groundwater management area (county-specific DFCs) shall not exceed the values specified in **Table A-1** at December 2069.

Table A-1 Desired Future Conditions for GMA 15 expressed as an Average Drawdown between January 2000 and December 2069.

Aransas County	0 feet of drawdown of the Gulf Coast Aquifer System
Bee County	7 feet of drawdown of the Gulf Coast Aquifer System;
Calhoun County	5 feet of drawdown of the Gulf Coast Aquifer System
Colorado County	17 feet of drawdown of the Chicot and Evangeline Aquifers and 23 feet of drawdown of the Jasper Aquifer
Dewitt County	17 feet of drawdown of the Gulf Coast Aquifer System
Fayette County	16 feet of drawdown of the Gulf Coast Aquifer System
Goliad County	10 feet of drawdown of the Gulf Coast Aquifer System
Jackson County	15 feet of drawdown of the Gulf Coast Aquifer System
Karnes County	22 feet of drawdown of the Gulf Coast Aquifer System
Lavaca County	18 feet of drawdown of the Gulf Coast Aquifer System
Matagorda County	11 feet of drawdown of the Chicot and Evangeline Aquifers
Refugio County	5 feet of drawdown of the Gulf Coast Aquifer System
Victoria County	5 feet of drawdown of the Gulf Coast Aquifer System
Wharton County	15 feet of drawdown of the Chicot and Evangeline Aquifers

2.2 Carrizo-Wilcox Aquifer

GMA 15 considers the portion of the Carrizo-Wilcox Aquifer within boundary of GMA 15 non-relevant for joint planning purposes.

2.3 Yegua-Jackson, Sparta, and Queen-City aquifers

GMA 15 considers the portions of the Yegua-Jackson, Sparta, and Queen-City Aquifers within the boundary of GMA 15 non-relevant for joint planning purposes.

3.0 POLICY JUSTIFICATION

The adoption of DFCs by districts, pursuant to the requirements and procedures set forth in Texas Water Code Chapter 36, is an important policy-making function. DFCs are planning goals that state a desired condition of the groundwater resources in the future in order to promote better long-term management of those resources. Districts are authorized to utilize different approaches in developing and adopting DFCs based on local conditions and the consideration of other statutory criteria as set forth in Texas Water Code Section 36.108.

GMA 15 and each of its member districts evaluated DFCs with regard to the nine factors required by Texas Water Code Section 36.108(d), as listed in Section 1.2. In addition to these nine factors, GMA 15 and the individual districts evaluated DFCs with regard to providing a balance between the highest practicable level of groundwater production and the conservation, preservation, protection, and recharging, and prevention of waste of groundwater in GMA 15.

In evaluating the DFCs, GMA 15 and the individual districts recognizes that: 1) the production capability of the aquifer varies significantly across GMA 15, 2) historical groundwater production is significantly different across GMA 15, and 3) the importance of groundwater production to the social-economic livelihood of an area is significantly varied among the districts. As a result of this recognition, a key GMA 15 policy decision was to allow districts to set different DFCs for portion of a specific aquifer within their boundaries, as long as the different DFCs could be shown to be physically possible. The allowance of different DFCs among the districts is justified for several reasons. One reason is that the Texas Water Code Section 36.108(d)(1) authorizes the adoption of different DFCs for different geographic areas over the same aquifer based on the boundaries of political subdivisions. The statute expressly and specifically directs districts "to consider uses or conditions of an aquifer within the management area, including conditions that differ substantially from one geographic area to another" when developing and adopting DFCs for:

1. each aquifer, subdivision of an aquifer, or geologic strata located in whole or in part within the boundaries of the management area; *or*
2. each geographic area overlying an aquifer in whole or in part or subdivision of an aquifer within the boundaries of the management area.

The Legislature's addition of the phrase "in whole or in part" makes it clear that districts may establish a "different" DFC for a geographic area that does not cover the entire aquifer but only part of that aquifer. Moreover, the plain meaning of the term "geographic area" in this context clearly includes an area defined by political boundaries, such as those of a district or a county.

Each district in GMA 15 submitted a summary of the public comment period and public hearing regarding the proposed DFCs inclusive of all relevant comments received during the 90-day public comment period regarding the proposed DFCs, any suggested revisions to the proposed DFCS, and the basis for the revisions. The summaries are provided in **Appendix C**. GMA 15 Representatives reviewed the summary submittals during a meeting held on April 29, 2016. The DFCs that were considered and proposed for final adoption specify acceptable drawdown levels in the Gulf Coast aquifers on a county-by-county basis and across the entire GMA 15.

4.0 TECHNICAL JUSTIFICATION

The adopted DFCs for the Gulf Coast Aquifer in Section 2.0 were partly developed from simulations of various future pumping scenarios using the CGC GAM (Chowdhury and others, 2004).

4.1 Overview of the Central Gulf Coast GAM (CGC GAM)

The development of the CGC GAM (Chowdhury and others, 2004) began with Waterstone Environmental Hydrology and Engineering, Inc. (Waterstone and Parsons, 2003), and was completed by the TWDB. **Figure 4-1** shows the model domain for the CGC GAM. The model boundary is defined by: (1) the limits of the outcrop area in the west, (2) the Gulf of Mexico, (3) groundwater divide to the north through the Colorado-Fort Bend-Brazoria counties, and (4) groundwater divide to the south through Jim Hogg, Brooks, and Kenedy counties. The model has four layers, which from top to bottom represent the Chicot Aquifer, the Evangeline Aquifer, the Burkeville confining Unit, and the Jasper Aquifer. **Figure 4-2** shows the layering of the model using both three-dimensional and two-dimensional surfaces.

The groundwater code used to model the groundwater flow is MODFLOW-96 (Harbaugh and McDonald, 1996). MODFLOW-96 is code that solves the groundwater flow equation for a finite-difference numerical grid. The numerical grid for the CGC GAM consists of grid cells with dimensions of one mile by one mile. The thickness of each grid cell equals the thickness of the model layer/geologic unit that it represents. The dimension of the grid cell is important because it limits the resolution at which the groundwater system can be described. Among the limitations placed on the model solution by the numerical grid are the following:

- the aquifer properties assigned to a grid cell are assumed to be uniform and constant;
- all the of wells located within the area of a grid cell are represented by a single well at the center of the grid cell;
- all of the wells that pump from a geologic unit are assumed be screened across the entire length of the geologic unit; and
- the water level for the entire grid cell volume is represented by a single value at the center of the grid cell.

The model approach described by the TWDB (Chowdhury and others, 2004) includes: (1) calibrating the model for steady-state conditions from 1910 to 1940 (based on assumptions of no water level change during pre-pumping conditions), and (2) calibrating the model for transient conditions from 1940 to 1999 (based on assumed yearly changes in pumping). The steady-state calibration was performed primarily to investigate the model sensitivity to changes in aquifer properties and boundary conditions. The transient calibration was performed to estimate the final aquifer parameters and boundary conditions for the final model.

The transient calibration by the TWDB primarily focused on adjusting hydraulic parameters to match measured water levels obtained from the TWDB groundwater well database. The vast majority of the water levels used to calibrate the model are from the Chicot and Evangeline aquifers. Only a few water level measurements were associated with the Burkeville Confining Unit and the Jasper aquifer. Both the TWDB and the Waterstone reports provide relatively little information regarding aquifer properties, recharge distributions, and hydraulic boundary conditions. As a result, a reader has little to no information

with which to evaluate the reasonableness of many model parameters important to making predictions of pumping impacts.

4.2 Development of the CGC GAM

The primary criteria used by the TWDB to evaluate the model calibration results were comparison between simulated and measured water levels. A standard metric for assessing the goodness in matching historic water levels is the root-mean square error (RMSE). The RMSE is a measure of the average difference between the measured and simulated water levels. The acceptable value of RMSE is both model- and problem-dependent. For regional models that span hundreds of miles, an RMSE of about 10% of the range in head values is generally accepted as a minimum goal during model calibration.

Chowdhury and others (2004) use water levels from 1989 and 1999 to calibrate the CGC GAM. **Figure 4-3** compares the measured and simulated water levels for 1989 and 1999, respectively. The RMSE for the calibration is 46 feet for 1989 and 36 feet for 1999. The RMSE values for the 1989 calibration period and for the 1999 calibration period are about 5% of the total change in water levels across the model area shown in Figure 4-1.

In addition to water levels, Chowdhury and others (2004) show matches for baseflows in streams. **Figure 4-4** shows comparisons between measured and simulated base flows for three river gages in the model domain. The figures show that the simulated base flows are significantly lower than the measured values. Referring to the underestimated stream flows in Figure 4-4, Chowdhury and others (2004) state:

> "In regional groundwater flow models, it is always difficult to reproduce baseflow where the errors in the simulated heads in the aquifers could be potentially large and the state in the river are fixed. A global increase in stream conductance causes too much of a hydraulic interaction between the aquifers and the streams in the central Gulf Coast GAM (Waterstone and Parson, 2003) and would require unreasonable recharge to calibrate the model."

Among the concerns with the calibration of the CGC GAM is that Chowdhury and others (2004) and Waterstone and Parson (2003) provide relatively little documentation and data that can be used to check the reasonableness of the model parameters. With regard to hydraulic properties, Chowdhury and others (2004) do not present any results from specific aquifer tests, geophysical logs, or regional hydrogeological studies to justify their parameterization of the aquifer properties. Chowdhury and others (2004) use three hydraulic conductivity zones (**Figure 4-5**) to model the Evangeline Aquifer but they do not compare these zonation values and results from analysis of field data.

With regard to pumping rates, Chowdhury and others (2004) state that they recalibrated the Waterstone draft GAM based on TWDB estimates of pumpage distribution. However, Chowdhury and others (2004) do not discuss the procedure used to assign TWDB pumping rates to the grid cells among the aquifer layers and the potential sources of error and uncertainty.

Chowdhury and others (2004) present the following three water budgets for the CGC GAM: 1) steady-state for pre-development; 2) transient conditions for 1989; and, 3) transient conditions for 1999. Water budgets provide a breakdown of where the sources and discharges of water occur in the groundwater model. All three of these water budgets are reproduced and shown in **Table 4-1**.

The water budget for the pre-development conditions, which represents the time prior to pumping, is about 600,000 acre feet per year (AFY). The two primary sources of inflow are streams (69%) and recharge from precipitation (29%). The two primary sources of outflows are streams (84%) and the Gulf of Mexico (16%). The average water budget for the 1989 and the 1999 pumping conditions is about 1,000,000 AFY. The increase in the water budget is caused by groundwater pumping, which averages

Table 4-1 Water budgets from the CGC GAM (from Chowdhury and others, 2004)

Steady-state Conditions for Pre-Development				
Parameter	Flow (in) (AFY)	Flow (out) (AFY)	Flow (in) (percent)	Flow (out) (percent)
Drains	0	-4,075	0%	1%
Lake Leakage	9,319	0	2%	0%
Evapo-transpiration	0	0	0%	0%
Gulf of Mexico	0	-97,008	0%	16%
Recharge	180,796	0	29%	0%
Stream Leakage	426,578	-515,610	69%	84%
Total	616,693	-616,693	100%	100%
Transient Conditions for 1989				
Parameter	Flow (in) (AFY)	Flow (out) (AFY)	Flow (in) (percent)	Flow (out) (percent)
Storage	365,155	-237,054	32.53%	21.12%
Pumping	0	-386,932	0%	34%
Drains	0	-1,832	0%	0%
Lake Leakage	21,752	0	2%	0%
Evapo-transpiration	0	-37,920	0%	3%
Gulf of Mexico	2,579	-71,551	0%	6%
Recharge	265,448	0	24%	0%
Stream Leakage	467,671	-387,296	42%	35%
Total	1,122,605	-1,122,585	100%	100%
Transient Conditions for 1999				
Parameter	Flow (in) (AFY)	Flow (out) (AFY)	Flow (in) (percent)	Flow (out) (percent)
Storage	248,228	-22,549	25.53%	2.32%
Pumping	0	-425,020	0%	44%
Drains	0	-2,035	0%	0%
Lake Leakage	21,409	0	2%	0%
Evapo-transpiration	0	-20,958	0%	2%
Gulf of Mexico	1,299	-87,330	0%	9%
Recharge	182,909	0	19%	0%
Stream Leakage	518,498	-414,450	53%	43%
Total	972,343	-972,342	100%	100%

about 400,000 AFY. The three major sources of inflow are leakage from stream (47%), water release from aquifer storage (29%), and recharge (21%). The three major sources of discharge are groundwater flow to streams (39%), pumping from the aquifer (39%), and addition of water into storage (12%).

4.3 Application of CGC GAM

The CGC GAM was used to simulate the impact of pumping for a period from January 1, 2000 to December 31, 2071. The initial water level conditions for the predictive GAM runs from Chowdhury and others (2004) for December 1999 and are shown in **Figure 4-6**. To help establish appropriate benchmarks for districts to evaluate pumping impacts, **Appendix D** presents the water budgets for each county for 1999. These water budgets were presented to the GMA 15 by INTERA on April 10, 2014.

Two scenarios of pumping rates and locations were generated by the GMA 15 for the time period from 2000 to 2070 to represent alternative future pumping scenarios. Each pumping scenario is contained in a single computer file that can be read and used by the CGC GAM. The two scenarios are called “Baseline” and “High-Production.” The “Baseline” scenario represented a district’s current MAG, with updates to account for anticipated district growth and/or permits recently awarded. There was no consensus among the districts for a definition of “High-Production.” The “High-Production” scenario was developed to allow several districts to evaluate the impact of increased pumping on drawdowns.

In order to help represent spatial and temporal trends of interest to the districts adequately, the pumping scenarios were generated using a template that allowed yearly changes in pumping in any grid cell or group of cells in the GAM, so that the districts could represent future pumping rates at the temporal and spatial resolution they deemed appropriate for the joint planning process. Several versions of the Baseline and the High-Production pumping files were generated and run with the CGC GAM in 2014. The final set of pumping files used to help establish the adopted DFCs include the designation “Option 1.” **Table 4-2** presents the pumping by county and by aquifer in 2070 for the Baseline Option 1 pumping scenario. **Table 4-3** presents the pumping by county and by aquifer in 2070 for the High-Production Option 1 pumping scenario. **Figure 4-7** shows the annual variation of total pumping by county for the Baseline Option 1 pumping scenario. **Figure 4-8** shows the annual variation of total pumping by county for the High-Production Option 1 pumping scenario.

Table 4-2 2070 pumping rates associated with the Baseline Pumping Scenario

County	Chicot Aquifer	Evangeline Aquifer	Burkeville Confining Unit	Jasper Aquifer	Total
Aransas	1,863	0	0	0	1,863
Austin	3,180	4,006	5	22	7,214
Bee	3,707	5,505	17	289	9,518
Brazoria	8,901	289	0	0	9,189
Calhoun	7,950	68	0	0	8,018
Colorado	31,602	40,066	0	919	72,587
Dewitt	1,019	7,818	166	6,408	15,411
Fayette	0	264	405	1,878	2,546
Fort Bend	6,248	5,381	0	0	11,629
Goliad	714	10,702	306	102	11,824
Jackson	66,147	24,529	0	0	90,676
Karnes	0	105	627	3,262	3,993
Lavaca	3,095	12,647	151	4,692	20,585
Matagorda	33,898	7,121	0	0	41,020
Refugio	3,383	2,636	0	0	6,019
Victoria	32,170	27,873	0	0	60,043
Wharton	114,878	66,575	0	0	181,452
Total	318,755	215,584	1,676	17,572	553,587

Table 4-3 2070 pumping rates associated with the High-Production Pumping Scenario

County	Chicot Aquifer	Evangeline Aquifer	Burkeville Confining Unit	Jasper Aquifer	Total
Aransas	1,863	0	0	0	1,863
Austin	3,180	4,006	5	22	7,214
Bee	3,707	5,505	17	289	9,518
Brazoria	8,901	289	0	0	9,189
Calhoun	12,456	10,070	0	0	22,526
Colorado	48,419	62,874	0	919	112,211
Dewitt	1,019	7,813	165	19,178	28,176
Fayette	0	914	1,380	6,664	8,958
Fort Bend	6,286	5,381	0	0	11,667
Goliad	724	12,288	311	286	13,609
Jackson	92,308	85,452	0	0	177,760
Karnes	0	105	737	4,485	5,327
Lavaca	3,095	12,647	151	4,692	20,585
Matagorda	42,732	9,063	0	0	51,795
Refugio	6,379	37,951	0	0	44,331
Victoria	104,670	70,373	0	50,000	225,043
Wharton	135,864	78,713	0	0	214,577
Total	471,604	403,442	2,766	86,536	964,348

The CGC GAM was used to simulate future groundwater conditions using the same average conditions for recharge and stream water levels used by the TWDB to generate MAGs from the 2010 DFCs (Hill and Oliver, 2011). The average drawdowns for each county by aquifer are presented in **Table 4-4** for the Baseline Option 1 simulation and in **Table 4-5** for the High-Production Option 1 simulation. To evaluate the sensitivity of predicted drawdown to recharge, the Baseline Option 1 future pumping scenario was also run with 50% of the average recharge rate. Simulated average drawdown results for the "50% recharge" simulation are provided in **Table 4-6**. Prior to considering the results in Tables 4-4, 4-5, and 4-6 for proposing DFCs, GMA 15 had the TWDB verify the values in Table 4-4 by recalculating the average drawdowns using the codes developed by the TWDB.

Table 4-4 Average drawdowns (feet) from 2000 to 2070 for the Baseline Option 1 Pumping Scenario

County	Chicot	Evangeline	Chicot+ Evangeline	Burkeville	Jasper	Gulf Coast Aquifer System	Overall (without Burkeville)
Aransas	-0.1	5.8	0.0	NA	NA	0.0	0.0
Bee	1.3	8.7	6.2	7.7	5.6	6.5	6.0
Calhoun	-0.6	10.7	2.6	2.8	NA	2.6	2.6
Colorado	12.8	26.0	20.1	22.6	24.8	22.0	21.8
Dewitt	1.2	6.1	5.4	17.0	26.1	17.3	17.4
Fayette	NA	5.6	5.6	17.7	18.1	16.1	15.5
Goliad	-3.4	0.7	-0.1	7.2	10.5	5.2	4.2
Jackson	15.2	20.2	17.7	14.4	22.0	17.5	18.5
Karnes	NA	0.3	0.3	18.2	24.0	20.4	21.0
Lavaca	7.2	6.8	6.9	16.1	31.1	17.6	18.2
Matagorda	4.0	17.2	8.0	16.7	NA	8.8	8.0
Refugio	-0.4	7.3	3.2	2.8	NA	3.1	3.2
Victoria	-4.4	6.0	1.0	5.0	9.5	3.5	3.0
Wharton	14.6	12.4	13.5	25.5	28.4	20.0	18.1
Average	5.5	11.4	8.5	15.1	22.0	13.2	12.6

NA – not applicable because model does include this unit in this county

Table 4-5 Average drawdowns (feet) from 2000 to 2070 for the High-Production Option 1 Pumping Scenario

County	Chicot	Evangeline	Chicot+ Evangeline	Burkeville	Jasper	Gulf Coast Aquifer System	Overall (without Burkeville)
Aransas	0.0	46.0	1.1	NA	NA	1.1	1.1
Bee	3.8	15.4	11.5	11.1	6.5	10.1	9.7
Calhoun	4.5	108.4	34.1	7.9	NA	33.9	34.1
Colorado	30.4	54.3	43.6	36.7	36.6	40.0	41.1
Dewitt	4.0	9.5	8.7	27.0	53.3	32.4	34.5
Fayette	NA	15.0	15.0	40.5	50.4	42.6	43.2
Goliad	4.5	13.1	11.3	12.9	19.6	14.2	14.7
Jackson	65.4	143.6	104.4	52.8	42.0	82.2	92.0
Karnes	NA	1.6	1.6	21.3	32.8	27.2	28.7
Lavaca	25.0	19.1	20.9	21.2	35.6	25.9	27.7
Matagorda	8.2	65.2	25.5	27.3	NA	25.7	25.5
Refugio	1.6	67.7	32.0	20.0	NA	30.2	32.0
Victoria	27.0	81.3	55.1	68.3	180.1	79.5	83.8
Wharton	38.4	60.7	49.6	43.6	38.3	45.5	46.1
Average	20.7	56.2	38.7	34.9	46.7	39.6	41.1

Table 4-6 Average drawdowns (feet) from 2000 to 2070 for the Baseline Option 1 Pumping Scenario with 50% pumping

County	Chicot	Evangeline	Chicot+ Evangeline	Burkeville	Jasper	Gulf Coast Aquifer System	Overall (without Burkeville)
Aransas	-0.1	7.0	0.1	NA	NA	0.1	0.1
Bee	14.7	19.8	18.0	13.4	9.6	14.4	14.9
Calhoun	-0.4	12.2	3.2	2.9	NA	3.2	3.2
Colorado	27.4	38.8	33.7	29.8	30.0	31.7	32.4
Dewitt	9.6	8.9	9.0	19.7	28.1	20.1	20.2
Fayette	NA	12.6	12.6	21.7	20.8	19.9	19.1
Goliad	3.0	5.0	4.6	9.9	12.7	8.5	7.9
Jackson	23.8	27.4	25.6	17.2	23.8	23.2	25.2
Karnes	NA	12.2	12.2	22.6	25.6	23.6	23.9
Lavaca	24.0	13.4	16.6	19.4	33.4	23.0	24.4
Matagorda	4.5	19.4	9.0	17.3	NA	9.8	9.0
Refugio	0.6	9.9	4.9	4.2	NA	4.8	4.9
Victoria	-0.3	9.4	4.8	7.0	11.7	6.5	6.4
Wharton	21.4	19.2	20.3	28.4	30.4	24.7	23.4
Average	10.4	17.6	14.1	18.8	24.7	17.6	17.2

4.4 Evidence and Sources of Predictive Uncertainty in CGC GAM Simulations of Pumping Scenarios

During the July 2015 GMA 15 meeting, INTERA discussed sources of error and uncertainty in the predicted water levels in Tables 4-4,4-5, 4-6. A list of these sources is presented in **Figure 4-9**. **Appendix E** contains the slide presentation that INTERA presented to GMA 15 regarding predictive uncertainty associated with the CGC GAM. Several of the documented sources of uncertainty include flaws in the conceptual groundwater flow model, insufficient field data, inaccurate aquifer properties, oversimplified aquifer dynamics, improper aquifer boundaries and stratigraphy, and inadequate numerical spatial resolution. Among the references discussed to illustrate examples of the documented sources of uncertainty and error in the CGC GAM are Chowdhury and others (2004), TWDB (2014), Young (2012; 2014), Young and Kelley (2006), and Young and others (2010; 2012; 2013). A key message in the July discussion was the TWDB statement regarding the CGC GAM simulations by Hill and Oliver (2011):

> "The groundwater model used in developing estimates of modeled available groundwater is the best available scientific tool that can be used to estimate the pumping that will achieve the desired future conditions. Although the groundwater model used in this analysis is the best available scientific tool for this purpose, it, like all models, has limitations. In reviewing the use of models in environmental regulatory decision-making, the National Research Council (2007) noted:
>
> 'Models will always be constrained by computational limitations, assumptions, and knowledge gaps. They can best be viewed as tools to help inform decisions rather than as machines to generate truth or make decisions. Scientific advances will never make it

possible to build a perfect model that accounts for every aspect of reality or to prove that a given model is correct in all respects for a particular regulatory application. These characteristics make evaluation of a regulatory model more complex than solely a comparison of measurement data with model results.'

Given these limitations, users of this information are cautioned that the modeled available groundwater numbers should not be considered a definitive, permanent description of the amount of groundwater that can be pumped to meet the adopted desired future condition. Because the application of the groundwater model was designed to address regional scale questions, the results are most effective on a regional scale. The TWDB makes no warranties or representations relating to the actual conditions of any aquifer at a particular location or at a particular time."

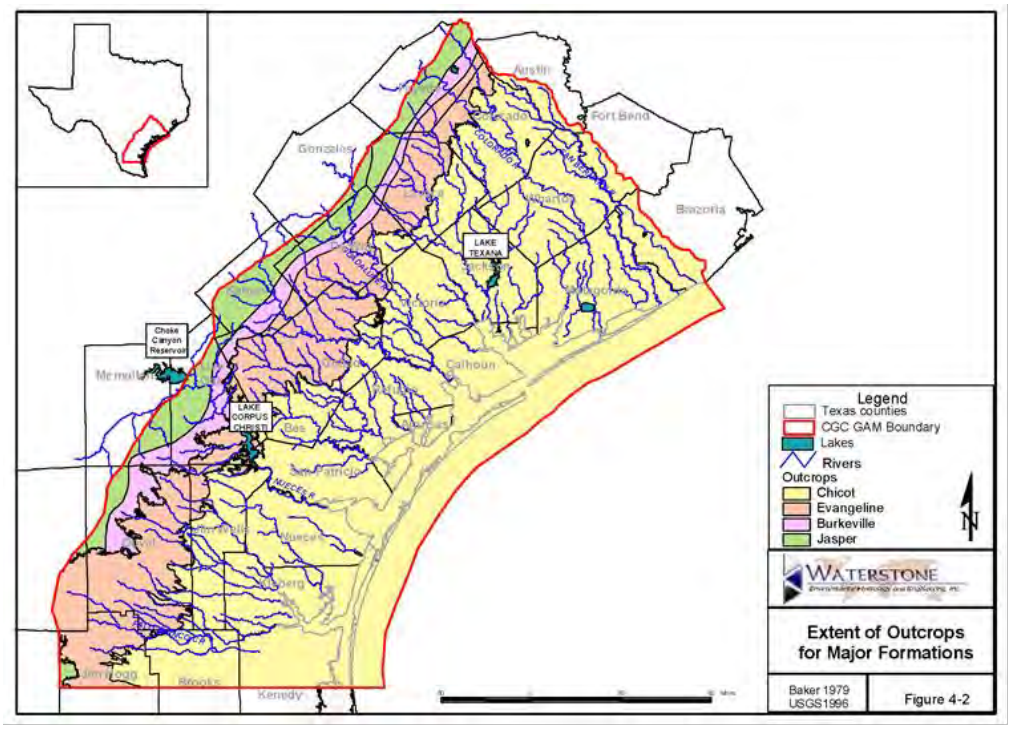

Figure 4-1 Model domain for the Central Gulf Coast GAM (Waterstone and Parson, 2003)

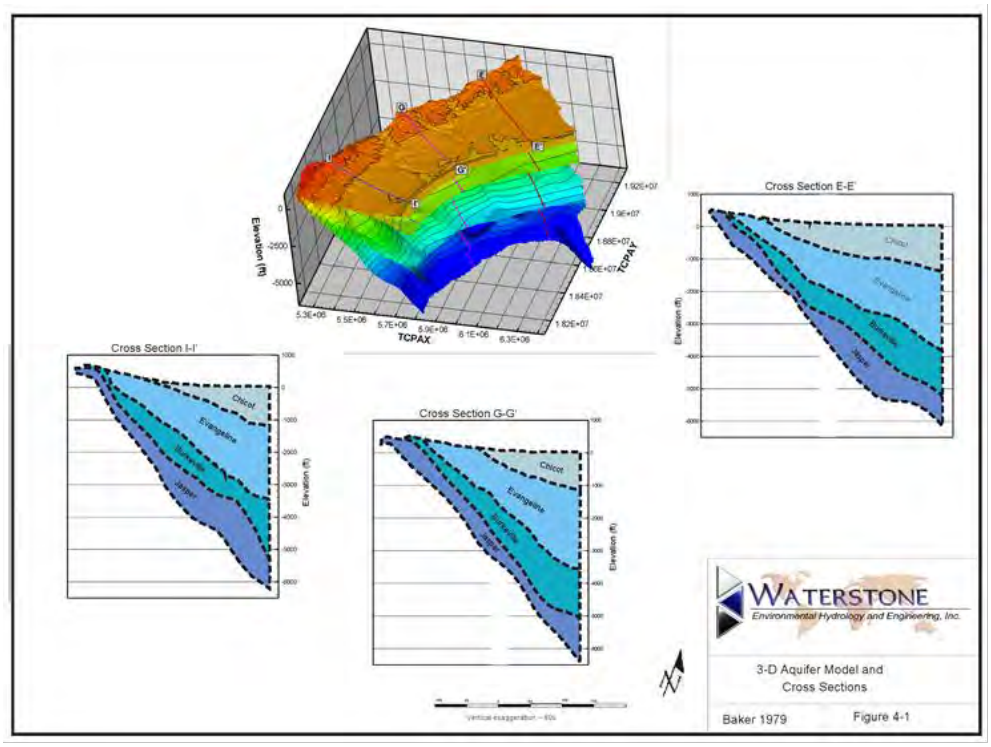

Figure 4-2 Three-dimensional surfaces and two-dimensional cross-sections showing the model layers for the Central Gulf Coast GAM (Waterstone and Parson, 2003)

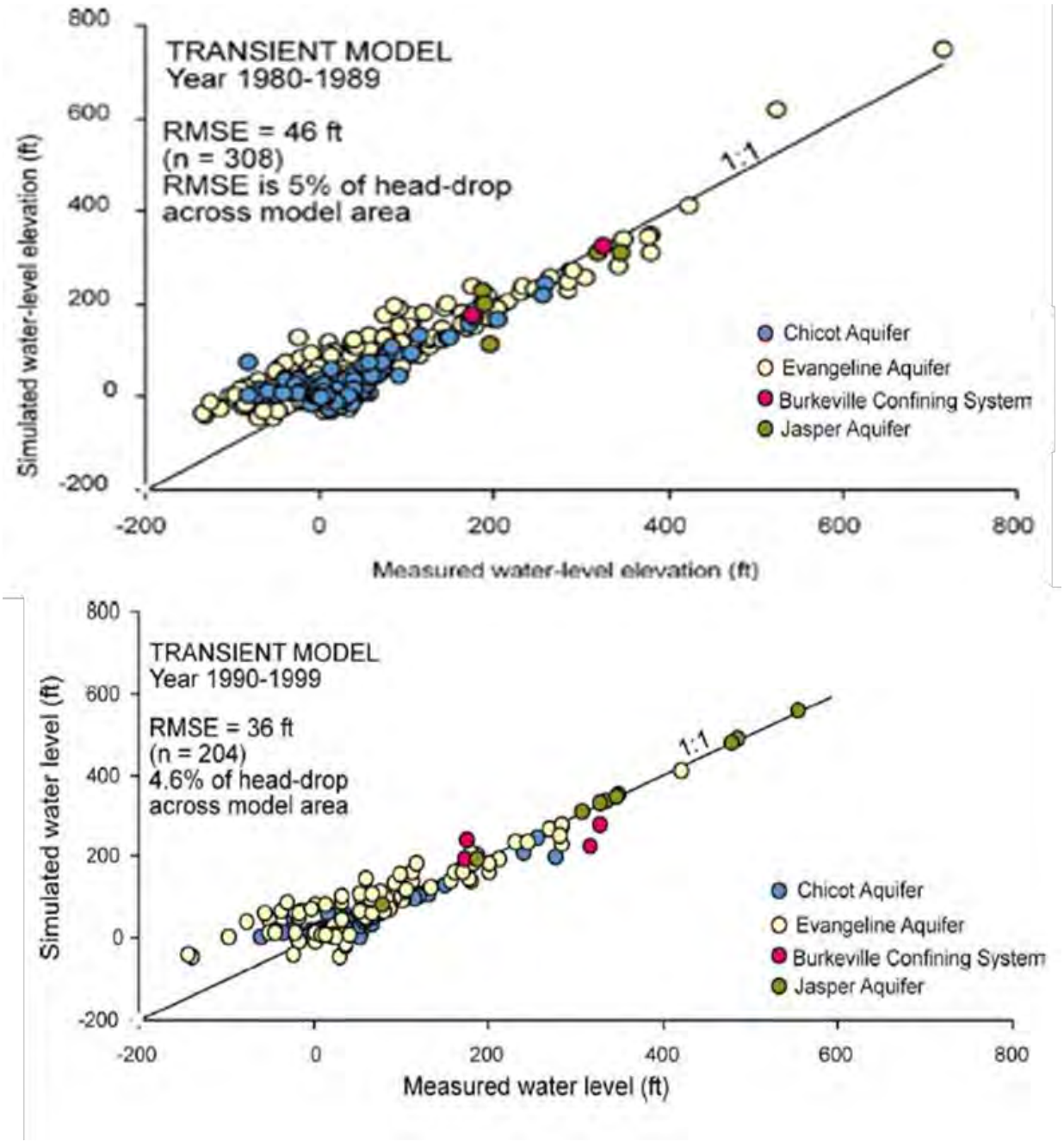

Figure 4-3 Comparison of measured and simulated water levels presented by Chowdhury and others (2004) for the CGC GAM for 1989 (top plot) and 1999 (bottom plot)

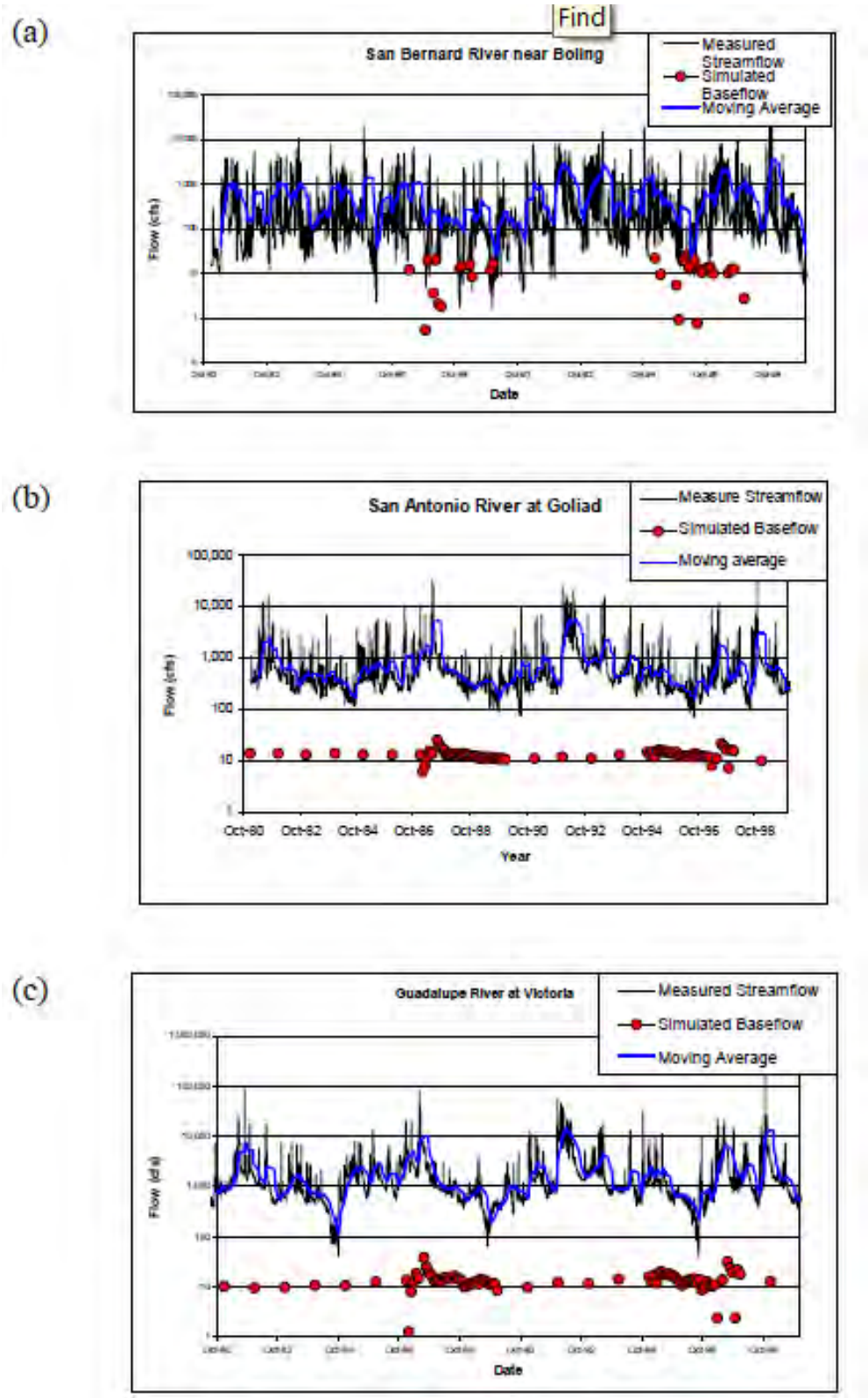

Figure 4-4 Comparison of streamflow hydrographs with simulated baseflow for the (a) San Bernard River near Boling, (b) San Antonio River at Goliad, and (c) Guadalupe River at Victoria (Chowdhury and others, 2004)

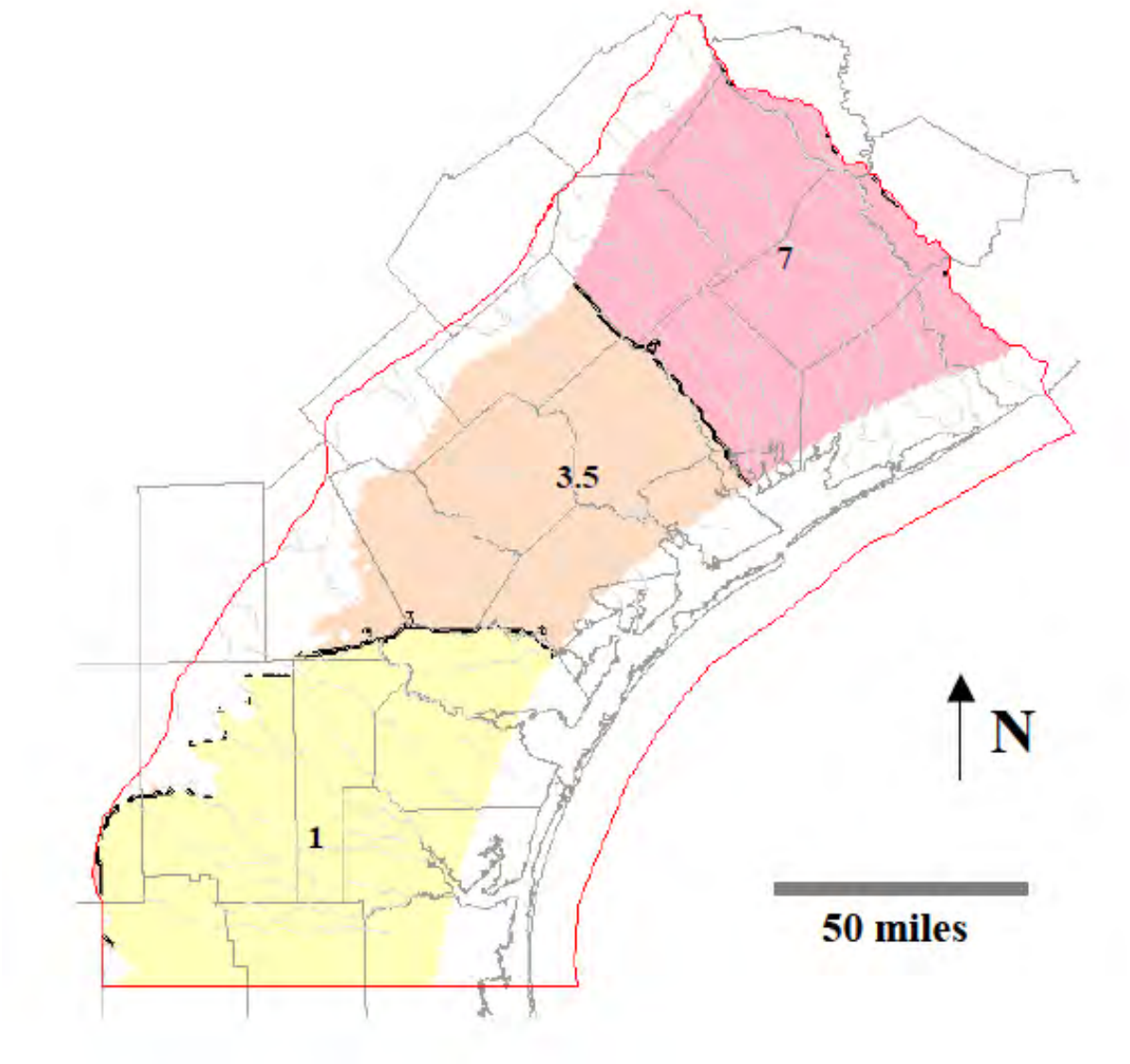

Figure 4-5 Hydraulic conductivity zones in the Evangeline Aquifer used from the calibrated CGC GAM. Hydraulic conductivity values labeled for each zone are in ft/day (from Waterstone and Parsons, 2003)

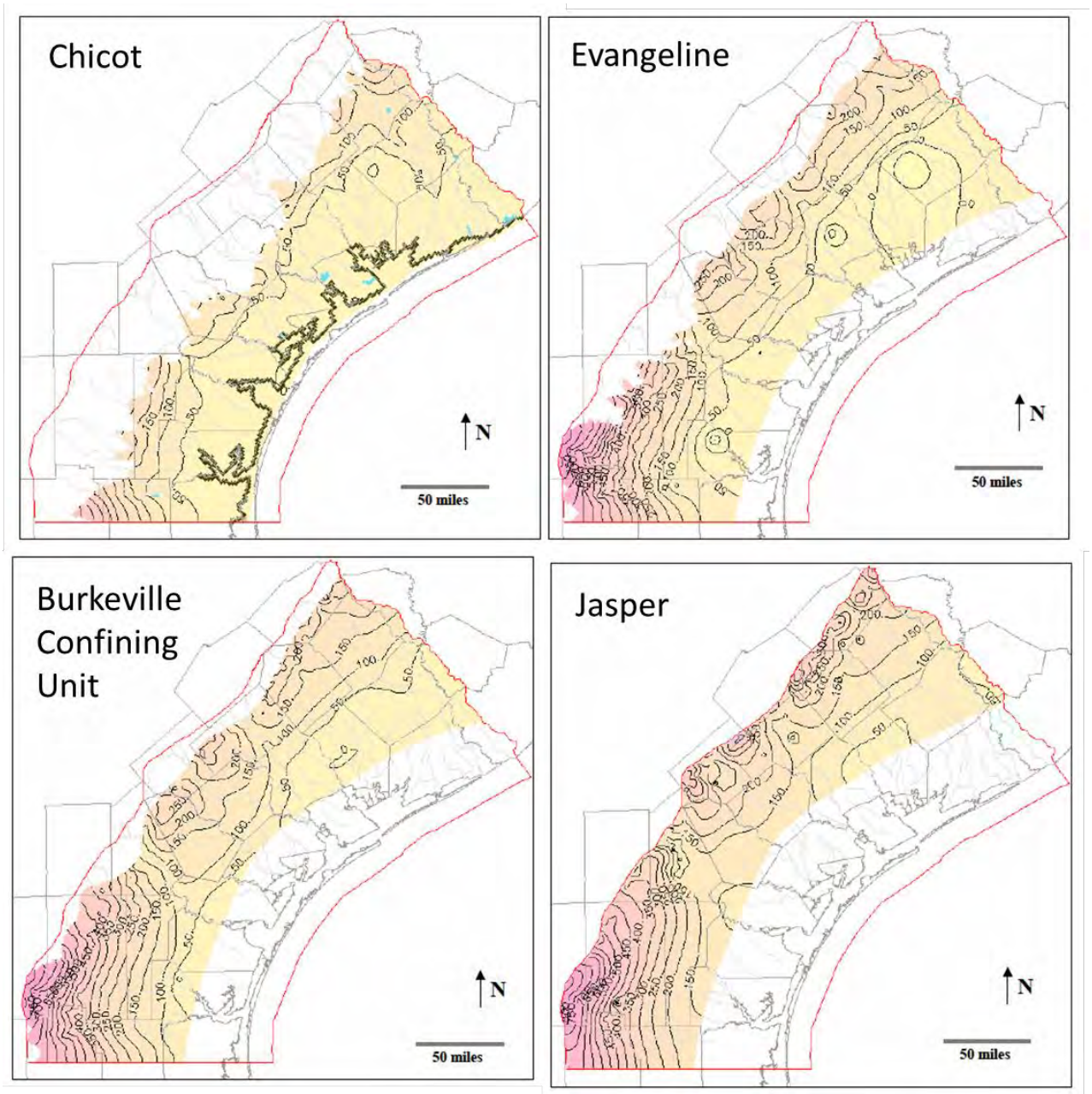

Figure 4-6 1999 Water levels simulated for the Chicot Aquifer, Evangeline Aquifer, the Burkeville Confining Unit, and the Jasper Aquifer by the Central Gulf Coast GAM (Chowdhury and others, 2004).

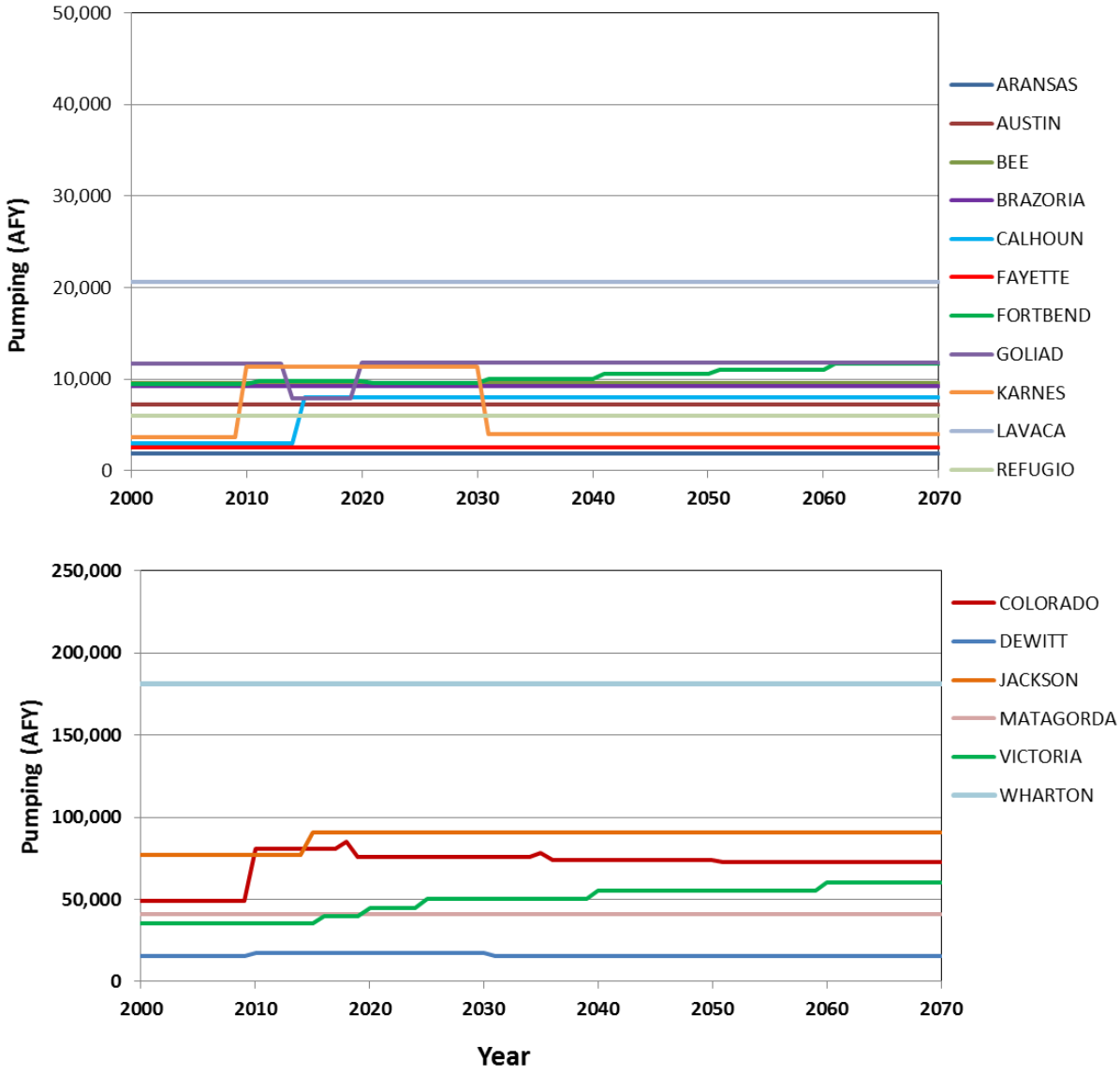

Figure 4-7 Annual changes in pumping by county for the Baseline Future Pumping Scenario

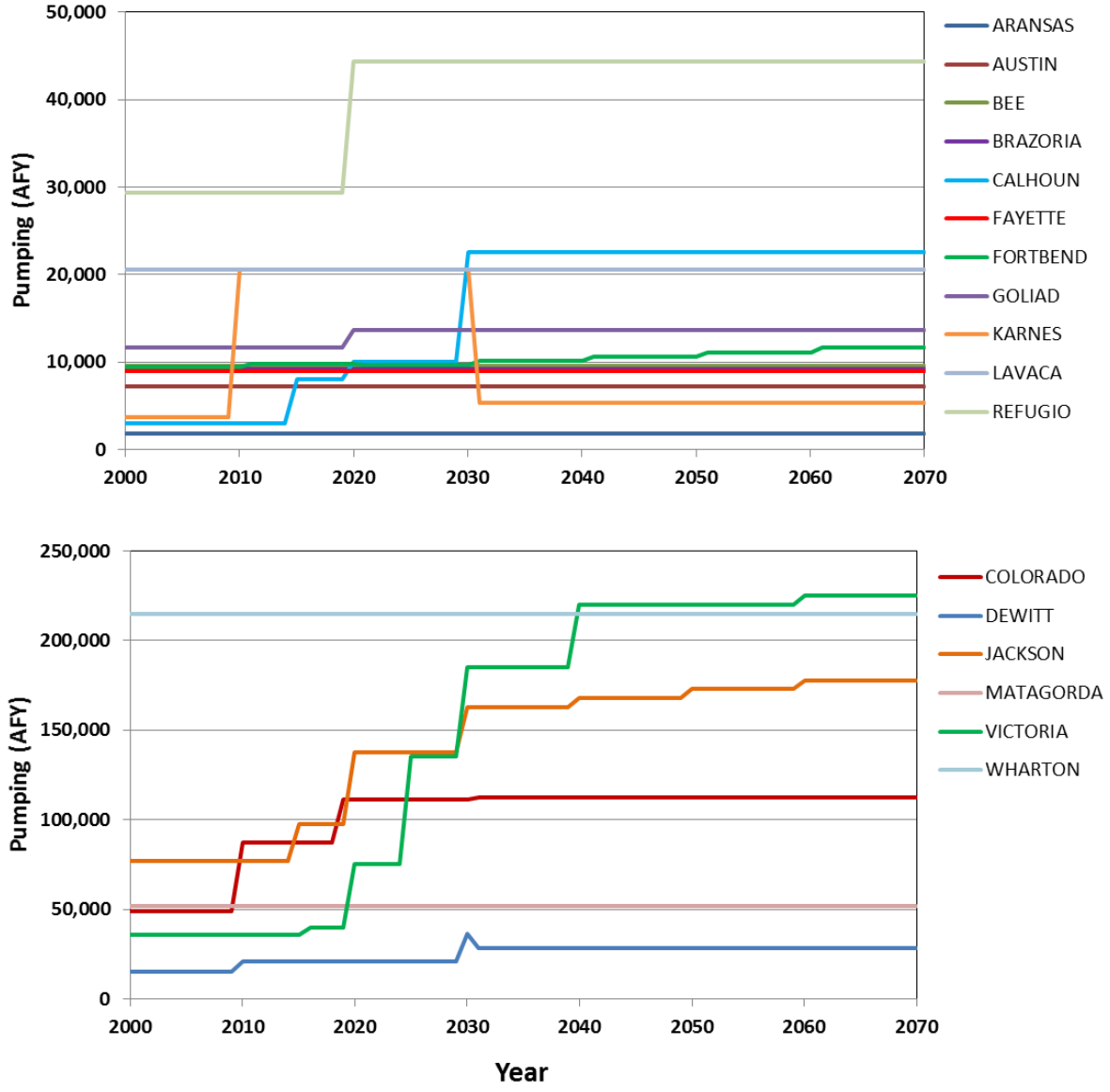

Figure 4-8 Annual changes in pumping by county for the High-Production Future Pumping Scenario

1. Central Gulf Coast GAM Report (2004)
   a. Calibration statistics between measured and model values
   b. Plots of residuals for different aquifers

2. LCRA-SAWS Water Project (LSWP) Reports (2005 to 2009)
   a. Spatial placement of pumping
   b. Vertical placement of pumping
   c. Temporal and Spatial distribution of recharge
   d. Numerical discretization around streams
   e. Aquifer boundaries
   f. Spatial variability in aquifers
   g. Addition of land subsidence (aquifer storage)

3. DFC Presentation to GMA 15 on Behalf of CCGCD, CBGCD, CPGCD (2010)
   a. Volume-weighted versus area-weighted drawdown averages
   b. Difference in pumping by aquifer between GMA model and reported by district
   c. Incomplete spatial coverage of aquifers by active model grid cells

4. PVGCD Report Regarding the Impacts of Large-scale Pumping (2012)
   a. Catahoula is an important Gulf Coast Geologic Unit
   b. Burkeville is not a low permeability unit for most of DeWitt County
   c. Jasper and Burkeville transmissivity is too low. Non-uniqueness of Central GAM calibration – can be recalibrated with much high recharge and transmissivity values

5. VCGCD Report discussing Science Development Program (2012)
   a. Aquifer boundaries and hydraulic properties – Burkeville K too low and K distribution for Chicot and Evangeline not consistent with field data
   b. Recharge and GW-SW exchange

6. VCGCD Report discussing Transmissivity values from Aquifer Tests (2014)/ TWDB Regional ASR & OCS Plan for Golden Crescent Region of Texas (2014)
   a. Evangeline modeled transmissivity values are too low in Victoria County
   b. Notable differenced between measured and modeled transmissivity in Jackson County

7. TWDB Report Evaluation of Hydrogeochemical Data regarding Implication to Developing Gulf Coast GAMs (2013)
   a. Implications to Conceptual Model
   b. Considerations for Implementing Recharge and GW-SW Interaction

8. On-going studies by CBGCD, CPGCD, VCGCD, TGCD, RGCD, EUWCD, and PVGCD to Support Development of GAM 15 & 16 (2015)
   a. Groundwater-surface water interaction
   b. Aquifer Hydraulic Properties are spatially variable
   c. Considerable uncertainty in recharge estimates
   d. Land-Subsidence has appear to occurred

Figure 4-9 Eight different studies that document source of predictive error and uncertainty in the CGC GAM simulations

5.0 FACTORS CONSIDERED FOR THE DESIRED FUTURE CONDITIONS

Section 36.108(d)(1-8) of the Texas Water Code requires districts of a GMA document the consideration of the nine listed factors (provided in Section 1.2) prior to proposing a DFC. This section of the explanatory report summarizes information considered by GMA 15 regarding the factors.

5.1 Aquifer Uses and Conditions

Texas Water Code Section 36.108(d)(1) directs districts to consider, during the joint-planning process, "aquifer uses or conditions within the management area, including conditions that differ substantially from one geographic area to another." Information on aquifer uses and conditions that was discussed in the GMA 15 includes, but is not limited, to the following:

- The TWDB water use surveys
- The TWDB historical groundwater pumping database
- The TWDB groundwater well database
- Documentation of the CGC GAM including Chowdhury and others (2004) and Waterstone and Parson (2003)
- Documentation of the Lower Colorado River Basin Model Report (Young and Kelley, 2006; Young and others, 2009)
- Reponses from the districts regarding GMA 15 Questionnaire #2

As summarized in the GMA 15 December 2015 meeting minutes:

> "The aquifer uses and conditions differ substantially across Groundwater Management Area 15. Groundwater production is generally greater in the northeastern portions of GMA 15 in Colorado, Wharton, Matagorda, and Jackson counties. Groundwater in the northeastern portion of GMA 15 is predominately used for irrigation purposes. Groundwater production in the central portion of GMA 15 in Victoria County is predominately used for irrigation, municipal, and industrial uses. Groundwater production in the north central portion of GMA 15 in DeWitt County and Karnes County is predominately used for domestic and livestock purposes as well as supporting oil and gas production in the Eagle Ford Shale. Groundwater production in the southwestern portions of GMA 15 is predominately used for domestic, livestock, and agricultural uses. The condition of the Gulf Coast Aquifer differs significantly geographically. Generally, the capacity of the Gulf Coast Aquifer to produce groundwater increases to the northeast and decreases to the southwest as well as increase down dip relative to up dip portions of the Gulf Coast Aquifer."

The differences in the groundwater pumped by the counties were discussed in the April 2014 meeting. A planning sheet, provided in **Appendix F**, was distributed to each district that contained the following information for each county:

- TWDB pumping estimates from 2000 to 2011
- Decadal values for current MAGs
- Decadal summary of the 2012 State Water Plan for groundwater supplies, water demands and groundwater supply strategies
- Decadal summary of the 2017 State Water Plan Water Demands

- Total Estimated Recoverable Storage

Table 5-1 summarizes the average and median groundwater pumping from 2000 to 2011 based on the TWDB groundwater database. The average county pumping in the Gulf Coast Aquifer ranges from a low of 483 AFY in Aransas County to a high of 127,475 AFY in Wharton County. Over 80% of the pumping in the 14 counties occurs in four northeast counties: Wharton, Matagorda, Colorado, and Jackson counties. Pumping in these four counties is dominated by irrigation.

Table 5-1 Average groundwater pumping (AFY) from 2000 to 2011 for counties in GMA 15 based on TWDB historical groundwater pumping

County	Aquifer	Average	Median	Minimum	Maximum
Aransas	Gulf Coast Aquifer	483	483	425	589
	Other Aquifer	18	11	1	55
	Unknown	4	3	0	10
	Subtotal	505	497	426	655
Bee	Edwards-BFZ Aquifer	105	91	78	178
	Gulf Coast Aquifer	6,568	5,988	5,545	8,916
	Other Aquifer	279	263	157	491
	Unknown	206	205	195	218
	Subtotal	7,159	6,547	5,975	9,803
Calhoun	Gulf Coast Aquifer	1,000	618	489	1,854
	Other Aquifer	21	14	0	54
	Unknown	13	14	2	23
	Subtotal	1,034	646	491	1,932
Colorado	Gulf Coast Aquifer	30,476	26,925	20,397	54,843
	Other Aquifer	742	742	168	1,315
	Trinity Aquifer*	468	0	0	3,311
	Unknown	196	0	0	725
	Subtotal	31,882	27,667	20,565	60,194
DeWitt	Gulf Coast Aquifer	4,821	4,776	3,889	6,188
	Other Aquifer	42	42	4	97
	Unknown	595	265	43	1,808
	Subtotal	5,458	5,083	3,936	8,093
Fayette	Carrizo-Wilcox Aquifer	19	14	2	44
	Gulf Coast Aquifer	3,082	3,306	1,493	3,911
	Other Aquifer	196	117	77	573
	Queen City Aquifer	5	1	0	14
	Sparta Aquifer	220	138	94	758
	Unknown	34	29	20	57
	Yegua-Jackson Aquifer	236	111	61	1150
	Subtotal	3,792	3,715	1,747	6,506

County	Aquifer	Average	Median	Minimum	Maximum
Goliad	Gulf Coast Aquifer	3,395	3,878	1,093	5,272
	Unknown	40	42	30	46
	Subtotal	3,435	3,920	1,123	5,318
Jackson	Gulf Coast Aquifer	46,373	44,056	36,064	90,186
	Other Aquifer	624	682	6	1,184
	Unknown	40	43	31	43
	Subtotal	47,037	44,781	36,101	9,1413
Karnes	Carrizo-Wilcox Aquifer	167	153	98	276
	Gulf Coast Aquifer	3,457	3,405	2,638	4,408
	Unknown	690	218	0	2,326
	Yegua-Jackson Aquifer	267	326	48	487
	Subtotal	4,581	4,101	2,785	7,497
Lavaca	Gulf Coast Aquifer	9,219	8,573	6,993	13,683
	Other Aquifer	999	999	676	1,322
	Unknown	74	54	54	133
	Yegua-Jackson Aquifer	7	7	6	8
	Subtotal	10,298	9,633	7,729	15,146
Matagorda	Gulf Coast Aquifer	34,945	32,418	21,060	55,044
	Other Aquifer	380	25	14	2,171
	Unknown	45	43	38	55
	Subtotal	35,369	32,486	21,112	57,270
Refugio	Gulf Coast Aquifer	2,269	2,077	1,625	3,930
	Unknown	47	48	30	62
	Subtotal	2,316	2,124	1,655	3,992
Victoria	Gulf Coast Aquifer	13,900	11,253	6,430	32,864
	Unknown	40	42	32	45
	Subtotal	13,941	11,295	6,462	32,909
Wharton	Gulf Coast Aquifer	127,475	13,0978	87,380	185,772
	Other Aquifer	1,976	1,976	1,909	2,042
	Unknown	51	55	38	56
	Subtotal	129,501	133,008	89,327	187,871

*Note: there no pumping from the Trinity Aquifer in Colorado. There values are incorrectly stated in the TWDB historical pumping database

The spatial distribution of the pumping across the counties and among the Chicot Aquifer, Evangeline Aquifer, Burkeville Confining Unit, and Jasper aquifer is provided in **Appendix G**. **Appendix H** illustrates the spatial distribution of pumping by county used to establish the DFC and MAG during the 2010 joint planning. The figures in Appendices G and H show the total pumping across a grid cell. Each grid cell covers one square mile. To help facilitate comparison of pumping among counties and among the four

hydrogeological units, the pumping rate per grid cell is color-coded using the same scale for all figures. The scale consists of the following seven intervals:

1. no pumping;
2. < 10 AFY;
3. 10 to 30 AFY;
4. 30 to 100 AFY;
5. 100 to 300 AFY;
6. 300 to 1,000 AFY; and
7. > 1,000 AFY.

The information in Appendices G and H was first presented in the April 2014 GMA 15 meeting and discussed during several later GMA 15 meetings. Based on considerations of information in Section 5.1, GMA 15 anticipates that the adoption of the DFCs will not impact the aquifer use and conditions within GMA 15 significantly during the planning horizon and would 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.

5.2 Water Supply Needs and Water Management Strategies

Texas Water Code Section 36.108 (d)(2) directs districts to consider, during the joint-planning process, the water supply needs and water management strategies included in the state water plan. GMA 15 comprises an area spanning Regional Water Planning Areas K, L, N, and P. District representatives from GMA 15 attended the planning meetings for Regions K, L, N, and P. During the planning period, the representatives provided reports to the GMA 15 regarding the activities of the planning groups. In addition to considering the regional planning reports, the district representatives considered water supply needs and recommended water management strategies included in 2012 State Water Plan and the 2017 State Water Planned Water Demands, which are contained in Appendix F.

The overall water needs for a region, as defined within the Texas State Water Plan, are the demands (based on water demand projections developed during the water planning process for six major water use sectors) that cannot be met with existing supplies. These existing supplies may be inadequate to satisfy demands due to natural conditions (e.g., instance, sustainable supply of an aquifer or firm yield of a reservoir) or infrastructure limitations (e.g., inadequate diversion, treatment, or transmission capacity). A review of the future water management strategies within a region gives some insight into the potential future supply for meeting an identified need. Therefore, future groundwater management strategies identified in the 2012 Texas State Water Plan indicate the potential future demand for groundwater in addition to currently utilized supplies. **Table 5-2** provides 2012 State Water Planning Values for 2060 for GMA 15 Counties. The summation of Gulf Coast groundwater strategies for the 14 counties is 142,654 AFY. Over 90% of these strategies are associated with Wharton, Matagorda, Jackson, and Colorado counties. These large numbers indicate a potential future demand for groundwater in these four counties, in addition to currently utilized supplies.

Based on a review of the a summary of the water supply needs and water management strategies of the 2012 Texas State Water Plan, GMA 15 determined that the proposed DFCs are not anticipated to have a significant impact on the water supplies, water supply needs, or water management strategies of the 2012 Texas State Water Plan during the planning horizon and would 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.

Table 5-2 2012 State Water Planning values for 2060 for GMA 15 counties in addition to 2010 MAG values

County	MAG	2012 State Water Plan Amounts for 2060 (AFY)			
		Groundwater Supplies	Water* Demands	Water* Supply Need (-) Surplus (+)	Gulf Coast Strategy
Aransas	1,862	579	4,335	-1,579	200
Bee (GMA 15)	10,660	7,121	11,578	-890	11,016
Calhoun	2,995	2,345	86,370	8,206	0
Colorado	48,953	38,508	188,786	-7,357	15,519
Dewitt	14,616	10,335	4,907	6,394	0
Fayette	18,917	11,742	79,542	-25,054	632
Goliad	11,699	4,566	19,224	6,728	0
Jackson	76,386	57,728	63,531	-3,971	5,053
Karnes (GMA 15)	3,116	5,269	6,167	536	161
Lavaca	20,373	14,445	13,550	895	0
Matagorda	45,896	36,302	319,162	-137,320	29,566
Refugio	29,328	2,952	2,002	1,262	0
Victoria	35,694	30,941	126,617	-65,275	0
Wharton	178,493	171,310	297,503	-60,550	80,507
Total	498,988	394,143	122,3274	-277,975	142,654

*water demands and water supply includes both groundwater and surfwater demands and supplies

5.3 Hydrological Conditions

Texas Water Code Section 36.108 (d)(3) requires that all GCDs, during the joint-planning process, consider hydrological conditions, including for each aquifer in the management area the total estimated recoverable storage (TERS) as provided by the TWDB executive administrator, and the average annual recharge, inflows, and discharge. As part of the joint-planning process, district representatives in GMA 15 reviewed and considered estimates of TERS, inflows, outflows, recharge, and discharge for all relevant aquifers based on results from the most recently adopted GAMs and technical assessments from the TWDB.

5.3.1 Total Estimated Recoverable Storage (TERS)

The Texas Administrative Code Rule §356.10 (Texas Administrative Code, 2011) defines the TERS as the estimated amount of groundwater within an aquifer that accounts for recovery scenarios that range between 25 percent and 75 percent of the porosity-adjusted aquifer volume. TERS values may include a mixture of water quality types, including fresh, brackish, and saline groundwater, because the available data and the existing groundwater availability models do not differentiate between different water quality types.

Wade and Anaya (2014) calculate TERS for the portion of the aquifers within GMA 15 that lies within the official lateral aquifer boundaries as delineated by George and others (2011). **Appendix I** presents the report by Wade and Anaya (2014) in its entirety. **Table 5-3** and **Figure 5-1** present the TERS values calculated for portions Gulf Coast Aquifer in 14 counties of interest. The TERS values do not take into account the effects of land surface subsidence, degradation of water quality, or any changes to surface water-groundwater interaction that may occur as the result of extracting groundwater from the aquifer.

Table 5-3 Total Estimated Recoverable Storage by County for the Gulf Coast Aquifer Provided by Wade and Anaya (2014).

County	25% of Total Storage	75% of Total Storage
Aransas	1,375,000	4,125,000
Bee	3,000,000	9,000,000
Calhoun	4,250,000	12,750,000
Colorado	7,000,000	21,000,000
DeWitt	5,550,000	16,650,000
Fayette	5,860,000	17,580,000
Goliad	6,500,000	19,500,000
Jackson	11,250,000	33,750,000
Karnes	12,397,500	37,192,500
Lavaca	8,080,000	24,240,000
Matagorda	12,000,000	36,000,000
Refugio	5,750,000	17,250,000
Victoria	9,750,000	29,250,000
Wharton	18,000,000	54,000,000

During the GMA 15 April 2015 meeting, INTERA provided a summary of the TERS values per county in the Groundwater Planning Datasheets (Appendix I) and explained the assumptions and methods used to calculate TERS. Several example calculations were demonstrated for the district members. **Appendix J** provides the INTERA entire presentation as provided in April 2015.

5.3.2 Groundwater Water Budgets and Issues of Pumping Sustainability

During the GMA 15 April 2015 meeting, INTERA presented historical water budgets by county for the years 1981, 1990, and 1999 (see Appendix J). The important concepts of aquifer dynamics and their role in determining groundwater availability were explained. In addition, the inflow and outflow water budget were discussed in terms of factors important to establishing sustainable groundwater pumping rates. A modeling example from GMA 15 was presented to illustrate that a major consideration when estimating sustainable pumping rates is how accurately the GAM predicts/represents the processes responsible for captured groundwater flow by pumping. Among the important points regarding the groundwater water budgets and sustainability is tracking the shape of the curve showing average-drawdown changes over time and the curve of storage depletion over time.

The key water budget concepts discussed the April 2015 GMA 15 meeting were reiterated at several other meetings and at all meetings where water budget results were discussed. **Figure 5-2** provides example

water budgets for Matagorda and Refugio counties that are in Appendix J and associated with Baseline Option 1. The water budgets have been developed with sufficient detail to understand the exchange of groundwater flow between counties, between aquifers, and between surface water and groundwater. **Figure 5-3** shows plots of average drawdown over time from 2000 to 2070 for Matagorda and Refugio counties that are in Appendix J and are associated with Baseline Option 1. The drawdown curves have sufficient resolution so that annual changes can be visually tracked and evaluated to determine whether or not the pumping rate is sustainable. **Figure 5-4** is a plot of water levels in the Chicot Aquifer in 2070 predicted by the Baseline Option 1 pumping scenario and is included in Appendix J. The contours of the water levels are in sufficient detail so that the general groundwater flow direction can be deduced within and between counties.

5.3.3 Overall Assessment

Based on a review of the TERS and simulated water budgets associated with the Baseline (Option 1) model run, the adoption of the DFCs of GMA 15 are not anticipated to impact the hydrological conditions within GMA 15 significantly during the planning horizon and would 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.

5.4 Environmental Factors

Texas Water Code §36.108 (d)(4) requires that districts, during the joint-planning process, consider environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water. The primary environmental factor of interest in GMA 15 is whether or not groundwater pumping has an adverse impact on baseflows in rivers and streams. During the first, as well as this joint planning session, GMA 15 members have been concerned that the CGC GAM provides inaccurate estimates of groundwater-surface water exchange. These concerns are based on comparison with simulations of GW-SW interactions simulated by the Lower Colorado River Basin (LCRB) model (Young and others, 2010) and the inability of the CGC GAM to reasonably predict river baseflow (Chowdhury and others, 2004). A consensus among GMA 15 members is that the CGC GAM underestimates the contribution of groundwater to stream baseflow during pre-development conditions and overestimates the capture of stream baseflow for pumping conditions. The poor performance of the CGC GAM (see **Figure 4-4**) is believed to be caused by improper and excessively large numerical grid cells around the rivers and near the ground surface, which prevents a proper numerical representation of a shallow groundwater system.

The inability of the CGC GAM to predict GW-SW interactions adequately was discussed in several meetings and include discussions of the following topics: 1) the possible use of the LCRB model in conjunction with the CGC GAM; 2) the update of the CGC GAM by the TWDB; 3) uncertainty and error associated with the CGC GAM predictions; and 4) the concerns expressed by the Goliad County GCD dated August 19, 2015 to Dr. Steve Young (**Appendix L**). With regard to the problems with the CGC GAM with accurately predicting GW-SW interaction, the Goliad County GCD states in their August 19, 2015 letter to Dr. Young:

> "GCGCD has expressed a great interest in working with TWDB in developing the updated model of the Gulf Coast Aquifer for the Central Gulf Coast. In addition to the question of recharge, GCGCD is concerned that the modeled water budget shows a significant inflow

> of streams to the Evangeline and Chicot Aquifers. The USGS gain-loss studies of the Lower San Antonio River Basin and the Coleto Creek Watershed shows in both studies a surface water gain from the Aquifer. This discrepancy needs extensive further evaluation."

In addition, during the joint planning process, GCGCD included the following response to one of the survey questions:

> "Spring flow has declined in Goliad County for many years and continued drawdown of the aquifer will result in a further decline in spring flow."

The general consensus of GMA 15 is that the CGC GAM may not be a reliable predictor of GW-SW interaction for some pumping scenarios. As a result, the flow rates associated with GW-SW interactions in the calculated water budgets in Appendices C & K are considered by some GMA 15 districts as unreliable. In assessing the potential environmental impacts of pumping on GW-SW interaction, each district reviewed other information besides the results predicted by the CGC GAM. Such information included gain-loss studies performed on streams and results from other groundwater models and surface water models. Based on the collective analyses of the districts regarding GW-SW interaction, GMA 15 anticipates that the pumping rates associated with the Baseline (Option 1) will not impact environmental conditions significantly during the planning horizon and would 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.

5.5 Subsidence

Texas Water Code Section 36.108 (d)(5) requires that districts, during the joint-planning process, consider the impacts of proposed DFCs on subsidence. Along the Texas Gulf Coast Aquifer, land subsidence is a potentially important issue associated with the management of groundwater. In Harris County, the pumping of groundwater has caused the land surface to subside more than three feet across most of the county and more than nine feet across the southeast part of the county. To help prevent land subsidence in the Gulf Coast, the Houston-Galveston Subsidence District was created in 1975, and the Fort Bend Subsidence District was created in 1989. Groundwater level decline, subsidence, and faulting are inter-related in the Gulf Coast Aquifer system, all having the potential for an adverse economic impact (Campbell and others, 2013). Jones and Larson (1975) estimated the cost associated with land subsidence in an approximately 900 square mile area, including the small portion of Harris County and some shoreline in Galveston County, to be about $32 million (about $150 million in 2015 terms) annually.

Land subsidence was discussed at several GMA 15 meetings, including April 10, 2015; July 15, 2015; December 9, 2015; and April 29, 2016. In July 15, 2015 (**Appendix M**) INTERA presented results from an ongoing study on land subsidence in GMA 15 funded by districts in GMA 15. **Figure 5-5** (from Appendix M) was discussed to demonstrate that land subsidence has occurred in GMA 15 and will likely continue occurring in the near future. During the discussion, four districts were identified as being interested in setting a DFC for land subsidence. Among the obstacles for setting a DFC for land subsidence is demonstrating compliance because of the inability of the districts to measure subsidence.

On April 29, 2016, INTERA provided a summary of an investigation into modeling and measuring land subsidence in the Texas central Gulf Coast. The presentation is provided in **Appendix N**. During the discussion, INTERA presented a paragraph of the study's Executive Summary that concisely summarizes the estimated historical land subsidence in GMA 15. This paragraph from Young (2016) is reproduced below:

> "The report presents ground surface elevation data from National Geodectic Survey (NGS) benchmarks called Permanent Identifiers (PIDs), old topographic maps, and LIght and raDAR (LIDAR) data from seven counties in GMA 15. The PID data provide ground surface elevations at 1,700 point locations prior to 1950. The topographic maps cover approximately 2,150 square miles and were constructed between 1950 and 1960. To extract point location data from the topographic maps, the maps were digitized and converted to Geographic Information System (GIS) files. The LIDAR data cover approximately 2,500 square miles and were collected after 2006. The joint analysis of these three data sets support the following conclusions:
>
> - The LIDAR and PID data indicate that DeWitt, Jackson, Matagorda, Refugio, Victoria, and Wharton counties have experienced at least 2 ft of land subsidence, and Calhoun County has experienced at least 1.5 ft of land subsidence.
> - The LIDAR and topographic map data indicate that Calhoun, DeWitt, Jackson, Matagorda, Refugio, Victoria, and Wharton counties have experienced at least 2 ft of land subsidence since 1950.
> - An analysis of the PID data, topographic map data, and LIDAR data indicates that more than two feet of average subsidence has occurred across about 100 square miles covering southwest Wharton, southeast Jackson, and northwest Matagorda counties."

During the GMA 15 discussion on April 29, 2016 INTERA presented an approach for performing scoping calculations of land subsidence based on simulated drawdowns from a groundwater model. The approach was demonstrated for the 14 locations shown in **Figure 5-6**. **Table 5-4** presents the calculated land subsidence at the 14 locations based on water levels predicted by the CGC GAM in 1999 and by the DFC GAM Run based on the Baseline Option 1 pumping file. Over the 70-year period, the anticipated increase in land subsidence at the 14 locations ranges between 0.1 and 1.2 feet. INTERA emphasizes that the values in **Table 5-4** have several major assumptions that should to be investigated and vetted fully prior to acting on any predicted land subsidence.

For this joint-planning session, no district proposed a DFC for land subsidence, but several districts are interested in establishing monitoring systems to measure land subsidence and for continuing further research into improving GMA 15's ability to predict land subsidence. As information becomes available, several GCDs may adjust their management plans and groundwater rules to prevent land subsidence, until which time the conditions are appropriate to propose DFCs for land subsidence.

Table 5-4 Prediction of land subsidence at fourteen sites in GMA 15 for the years 2000 and 2070 using drawdown simulated by the Central Gulf Coast GAM (Chowdhury and others, 2004) and clay thickness data from Young and others (2010; 2012)

ID	County	Drawdown (ft)								Clay Thickness (ft)				Land Subsidence (ft)	
		Chicot		Evangeline		Burkeville		Jasper							
		1940-2000	1940-2070	1940-2000	1940-2070	1940-2000	1940-2070	1940-2000	1940-2070	Chicot	Evangeline	Burkeville	Jasper	1940-2000	1940-2070
1	Calhoun	7.4	3.4	12.4	18.9	-	-	-	-	226	1299	418	925	0.4	0.5
2	Calhoun	-0.8	2.2	22.9	40.6	-	-	-	-	369	1442	407	1377	0.7	1.2
3	Dewitt	-	-	0.8	1.0	3.4	9.8	7.9	24.1	-	349	318	516	0.1	0.3
4	Dewitt	-	-	9.5	15.6	51.7	73.0	142.3	185.2	-	116	331	537	1.9	2.5
5	Jackson	18.7	55.7	64.7	88.1	39.2	56.3	22.0	45.4	139	683	224	618	1.4	2.2
6	Jackson	12.1	32.4	55.9	78.4	33.0	52.6	-	-	360	1096	339	966	1.5	2.3
7	Matagorda	-1.7	1.2	39.4	57.4	-	-	-	-	482	1569	652	1220	1.2	1.8
8	Matagorda	2.1	0.8	37.9	49.0	13.1	27.0	-	-	203	1264	415	1400	1.1	1.5
9	Refugio	5.2	1.8	3.4	10.1	-0.1	3.9	-	-	128	835	270	722	0.1	0.2
10	Refugio	0.3	1.2	4.1	15.5	-	-	-	-	264	1141	264	726	0.1	0.4
11	Victoria	5.0	8.0	13.2	40.1	1.7	6.4	-	-	207	757	225	550	0.2	0.7
12	Victoria	27.0	34.9	45.3	52.5	38.0	43.9	26.2	33.0	108	605	190	785	1.2	1.4
13	Wharton	75.4	94.1	156.7	149.8	61.9	90.2	27.9	59.9	84	780	266	610	3.2	3.7
14	Wharton	8.7	27.5	57.4	91.0	44.5	80.9	38.2	72.2	78	599	287	842	1.6	2.8

5.6 Socioeconomics

Texas Water Code Section 36.108 (d)(6) requires that GCDs consider socioeconomic impacts reasonably expected to occur as a result of the proposed DFCs for relevant aquifers as part of the joint-planning process. There is a lack of information available to GCDs regarding socioeconomic impacts that would be considered relevant to the joint-planning process. However, Texas statute requires that regional water plans include a quantitative description of the socioeconomic impacts of not meeting the identified water needs. Historically, this analysis has been performed for regional water planning groups by the TWDB. As a result, this section will rely heavily on the TWDB analyses for planning regions within GMA 15. In addition, GMA 15 Representatives participated in a questionnaire that covered several topics, including potential socioeconomic impacts of the proposed DFC. In addition to a short review of the TWDB regional planning socioeconomic impact analysis, this section will end with a qualitative discussion of socioeconomic impacts of the proposed DFCs based upon the questionnaire and discussion in public meetings held by GMA 15.

5.6.1 Regional Planning Assessment of Socioeconomic Impact

Consideration of socioeconomic impacts as part of water planning in Texas has been a fundamental element of the planning process dating back to the 1990s. Texas Water Code Section 16.051 (a) states that the TWDB "shall prepare, develop, formulate, and adopt a comprehensive state water plan that...

shall provide for... further economic development." Title 31 of the Texas Administrative Code, Section 357.7 (4)(A) states, "The executive administrator shall provide available technical assistance to the regional water planning groups, upon request, on water supply and demand analysis, including methods to evaluate the social and economic impacts of not meeting needs." The socioeconomic analysis provided by the TWDB to support planning groups provides the only available consistent analysis of socioeconomic impacts of unmet water needs available for the state and as such is a valuable analysis for joint planning.

Socioeconomic analysis of unmet water needs is performed by the TWDB at the request of the individual regional water planning groups and is based on water supply needs from the regional water plans. A general description of the methodology and approach is reproduced below from "Socioeconomic Impacts of Projected Water Shortages for the Region P Regional Water Planning Group" (Ellis, Cho and Kluge, 2015a).

> "The analysis was performed using an economic modeling software package, IMPLAN (Impact for Planning Analysis), as well as other economic analysis techniques, and represents a snapshot of socioeconomic impacts that may occur during a single year during a drought of record within each of the planning decades. For each water use category, the evaluation focused on estimating income losses and job losses. The income losses represent an approximation of gross domestic product (GDP) that would be foregone if water needs are not met.
>
> The analysis also provides estimates of financial transfer impacts, which include tax losses (state, local, and utility tax collections); water trucking costs; and utility revenue losses. In addition, social impacts were estimated, encompassing lost consumer surplus (a welfare economics measure of consumer wellbeing); as well as population and school enrollment losses."

At the beginning of this round of joint-planning, GMA 15 Representatives only had access to the 2011 Regional Water Plan socioeconomic analyses (Norvell and Shaw, 2010a, 2010b, 2010c and 2010d). INTERA sent these technical reports to GMA 15 for circulation among district representatives on October 13, 2015. Since that time, the 2016 Regional Water Plans have been approved with updated socioeconomic analyses (Ellis, Cho and Kluge, 2015a, 2015b, 2015c and 2015d). Results presented in this section are taken from the 2016 Regional Water Plans, and all impact estimates are in 2013 dollars.

The socioeconomic impact analysis provided by the TWDB to Region K, Region L, Region N and Region P regional water planning groups for the 2016 regional water plans informed the district representatives' considerations of socioeconomic impacts reasonably expected to occur as a result of the proposed DFCs for relevant aquifers in GMA 15. These technical memoranda are included in their entirety as **Appendix O**, **Appendix P, Appendix Q** and **Appendix R**, respectively. To illustrate the impacts of not meeting water supply needs, examples for specific water user groups for each of the four regional water planning areas (K, L, N and O) along with regional summaries for Region L were presented to GMA 15 Representatives. These details are provided in **Appendix S**, which provides INTERA's presentation made to the GMA 15 Representatives on April 29, 2016.

A consistent method of evaluating losses across regions is to review regional social impacts calculated by the TWDB in their analysis. **Table 5-5** provides a summary of the consumer surplus losses, population losses and school enrollment losses from not meeting water supply needs for Region L in GMA 15. Region

L is presented because impacts to Region L are most significant. One can review all sector impacts as well as social impacts for all regions through review of **Appendices O through R**.

Table 5-5 Region-wide Social Impacts of Water Shortages in Region L (from Ellis, Cho and Kluge, 2015b).

Impact Measures	2020	2030	2040	2050	2060	2070
Consumer surplus losses ($ millions)	$29	$58	$108	$171	$264	$403
Population losses	3,356	3,821	4,324	4,693	5,591	9,199
School enrollment losses	621	707	800	868	1,034	1,702

* Year 2013 dollars, rounded. Entries denoted by a dash (-) indicate no economic impact. Entries denoted by a zero ($0) indicate income losses less than $500,000

The total economic impacts are significant, with Region L experiencing $1.99 billion in income losses and almost 18,300 job losses in 2020 if no water management strategies are implemented to meet projected shortages. Region K could suffer income losses of $1.557 billion in 2020 and a loss of 9,877 jobs. Region P income losses could be $9 million in 2020, with job losses estimated at 279. In Region N, income losses could be $4.49 billion in 2020, with job losses estimated at 24,000.

5.6.2 Other Considerations of Socioeconomic Impacts

While the information on socioeconomic impacts of not meeting water supply needs as quantified in the adopted 2016 regional water plans is useful for GMA 15 Representatives to consider, the factor to consider in joint-planning is what socioeconomic impacts result from the DFCs.

The challenge in joint-planning relative to regional planning is that no standardized local or regional socioeconomics analytical tool has been developed to support joint-planning. Also, the nature of socioeconomic impacts from proposed DFCs is unique from one GCD to another within a common GMA in that two or more GCDs may share a common DFC, but the method adopted by the individual GCD to achieve the DFC through local regulatory plans will inevitably result in differences in socioeconomic impacts.

Instead, GMA 15 - Representatives, through public meetings and through a questionnaire process, had discussions of qualitative socioeconomic impacts that may result from proposed DFCs. These impacts were both positive and negative, depending on the timing of the consideration. A summary of the results of the GMA 15 discussion and the results from the questionnaire can be found in INTERA's July 15, 2015 GMA 15 presentation provided in **Appendix M** of this report.

Among the concerns expressed by the GCD is the economic impact of water level drawdown. Lower water levels in a well can cause types of costs: deeper well cost and pumping cost. In GMA 15, Goliad County GCD performed a preliminary cost impact analysis, which is provided in **Appendix T**. When an existing water source is no longer productive a replacement well is required or in the case of a new location, the well will need to be drilled deeper. In Goliad County, the depth between productive sands varies from 50-100 feet in most areas. A budget price for a new well, drilled well only, is $6500. Adding 75 feet to the depth adds $1500 to the cost. Goliad County GCD estimates that for each drop of 10 feet of water level to wells that pump a cumulative total of 7000 acre feet per year, the additional annual pumping cost is approximately $1,000,000.

Based on a review of the TWDB socioeconomic impact analysis for Region K, L, N, and P and related factors,

GMA 15 members do not anticipate that the adoption of the DFCs of GMA 15 will adversely impact the socioeconomics in GMA 15 during the planning horizon and would 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.

5.7 Private Property Rights

Texas Water Code Section 36.108(d)(7) requires that district representatives consider the impact of proposed DFCs 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 Texas Water Code Section 36.002. GMA 15 recognizes that the primary vehicle in which private property rights are protected in GMA 15 is through each GCD's management plan and groundwater rules. Because the local hydrogeological conditions, environmental, and socioeconomic factors vary across GMA 15, the manner in which GCDs protect private property rights may vary among the GCDs.

GMA 15 members considered property rights when it reviewed other district groundwater management plan, participated in the GMA's survey questions regarding property rights, and it discussed recent court cases involving groundwater. The GMA 15 survey questions asked each GCD to describe the consequences related to private property rights, especially negative impacts, that may occur if the adopted DFCs did not achieve 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. During the July 2015 meeting, GMA 15 members discussed the potential consequences of too lax or too restrictive DFCs on personal property rights. In short, there are undesirable consequences that affect individual landowners if the DFCs are too lax or too restrictive. Some of the issues addressed by the district representatives are documented in INTERA's presentation (**Appendix M**) that provides GCD responses to the survey's questions regarding personal property rights. To assist GCDs with responding to public comments on the proposed DFCs, INTERA presented the information in **Appendix U** at the GMA 15 meeting on April 29, 2016. A keystone to all discussions regarding personal property rights is the Texas Water Code Section 36.002, which reads as follows:

> "Sec 36.002 Ownership of Groundwater.
> (a) The legislature recognizes that a landowner owns the groundwater below the surface of the landowner's land as real property.
> (b) The groundwater ownership and rights described by this section:
>
> *1)* entitle the landowner, including a landowner's lessees, heirs, or assigns, to drill for and produce the groundwater below the surface of real property, subject to Subsection (d), without causing waste or malicious drainage of other property or negligently causing subsidence, but does not entitle a landowner, including a landowner's lessees, heirs, or assigns, to the right to capture a specific amount of groundwater below the surface of that landowner's land; and
> *2)* do not affect the existence of common law defenses or other defenses to liability under the rule of capture.
>
> (c)Nothing in this code shall be construed as granting the authority to deprive or divest a landowner, including a landowner's lessees, heirs, or assigns, of the groundwater

ownership and rights described by this section.
(d)This section does not:

1) prohibit a district from limiting or prohibiting the drilling of a well by a landowner for failure or inability to comply with minimum well spacing or tract size requirements adopted by the district;
2) affect the ability of a district to regulate groundwater production as authorized under Section 36.113, 36.116, or 36.122 or otherwise under this chapter or a special law governing a district; or
3) require that a rule adopted by a district allocate to each landowner a proportionate share of available groundwater for production from the aquifer based on the number of acres owned by the landowner.

(e)This section does not affect the ability to regulate groundwater in any manner authorized under:

1) Chapter 626, Acts of the 73rd Legislature, Regular Session, 1993, for the Edwards Aquifer Authority;
2) Chapter 8801, Special District Local Laws Code, for the Harris-Galveston Subsidence District; and
3) Chapter 8834, Special District Local Laws Code, for the Fort Bend Subsidence District."

Based on a review of the districts management plans and related factors, the majority of the GMA 15 members do not anticipate that the adoption of the DFCs of GMA 15 will impact the hydrological conditions within GMA 15 significantly affect personal property rights associated with groundwater during the planning horizon and would 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. Among the GCDs that did not embrace this position was Goliad County GCD. Goliad County GCD's position is that the adoption of the DFC could significantly impact interests and rights in private property within Goliad County.

5.8 Feasibility of Achieving the Proposed Desired Future Condition

Texas Water Code Section 36.108 (d)(8) requires that GCDs, during the joint-planning process, consider the feasibility of achieving the proposed DFC(s). This requirement was added to the joint-planning process with the passage of Senate Bill 660 by the 82nd Texas Legislature in 2011. However, this review concept actually dates back to the rules adopted by the TWDB in 2007 to provide guidance as to what the TWDB would consider during a petition process regarding the reasonableness of an adopted DFC. In these rules, the TWDB required that an adopted DFC must be physically possible from a hydrological perspective.

During the TWDB's review of multiple petitions regarding the reasonableness of adopted DFCs in GMAs from 2010 to 2011, the evaluation of whether or not an adopted DFC was physically possible was based on whether or not the DFC(s) could be reasonably simulated using the TWDB's adopted GAM for the

aquifer(s) in question. This was a valid approach because if an adopted DFC was not physically possible, then, under the physical laws of hydrology as incorporated in the mathematical calculations executed during model simulations, the model would not execute the prescribed simulation successfully.

GMA 15 considers a valid evaluation of the feasibility of DFCs as whether or not the proposed DFCs are consistent with the DFCs predicted by the CGC GAM, using appropriate and reasonable environmental conditions and within the confidence limits of the CGC GAM. GMA 15 recognizes the GAMs as representing the best science for understanding the groundwater flow systems in GAM 15, while at the same time recognizing that the GAMs have been demonstrated to contain error and uncertainty. As such, GMA 15 will presume that DFCs are feasible if they can be generated by a GAM within a reasonable tolerance. GMA 15 spent several meetings discussing the potential limitations of the CGC GAM, and what reasonable tolerance limits are for CGC predictions of average drawdown values (see **Appendix M**). Among these reasons for using tolerance criteria for evaluating the feasibility of a DFC are:

- GAM Predictive Uncertainty/Error
- Unknown Errors in Stargin 1999 Water Level Conditions
- Uncertainty in Future Environmental Conditions (for instance recharge and rivers levels)
- Uncertainty in Future Pumping Rates & Locations
- Error/Uncertainty in Measurement of DFCs to Demonstrate Compliance
- Non-uniqueness of model calibration

In light of the issues above and other known limitations and possible errors in the CGC GAM, GMA 15 members agreed that DFCs would be considerable feasible, compatible and physically possible if the difference between the proposed DFCs and the DFC predicted by the CGC GAM are within 3.5 feet, except in the case of Goliad County. For this comparison, the DFCs of interest are average drawdown values from 2000 to 2070 for an aquifer in a county. Factors considered for a determining tolerance criterion of 3.5 feet include:

- Residuals and RMSE between the measured and simulated values for historical water levels produced by the CGC GAM;
- Sensitivity of the simulated drawdown to the recharge rate used in the predictive simulation and estimates of uncertainty in the magnitude and distribution of historical and predicted recharge rates;
- Sensitivity of the simulated drawdown to the hydraulic properties of the aquifer properties in the predicted simulation and observed differences between measured hydraulic aquifer properties and modeled aquifer hydraulic properties in the CGC GAM;
- Uncertainty in the temporal and spatial distribution of historical and future pumping in the GMA 15 counties; and
- The list of evidence and sources of GAM predictive uncertainty in **Appendix M**.

GMA 15 considers the proposed Goliad County DFCs to be compatible and physically possible if the difference between the proposed and predicted DFCs are within 5.0 feet. Factors considered by GMA 15 for determining the tolerance criterion of 5.0 feet have been documented by Goliad County GCD (see **Appendix L** and **Appendix V**) and include:

- an evaluation of water level change in 60 Evangeline Aquifer wells from 2003 to 2015, which indicates that the GAM underpredicts drawdown in the Evangeline Aquifer underlying Goliad County;

- an evaluation of water level change in 15 Chicot Aquifer wells from 2003 to 2015, which indicates that the GAM underpredicts drawdown in the Chicot Aquifer underlying Goliad County;
- an evaluation of gain-loss studies performed by the United States Geological Survey that indicates that the GAM overpredicts leakage from the streams in areas of pumping; and
- evidence suggesting that the GAM's average recharge rate for Goliad County is too high.

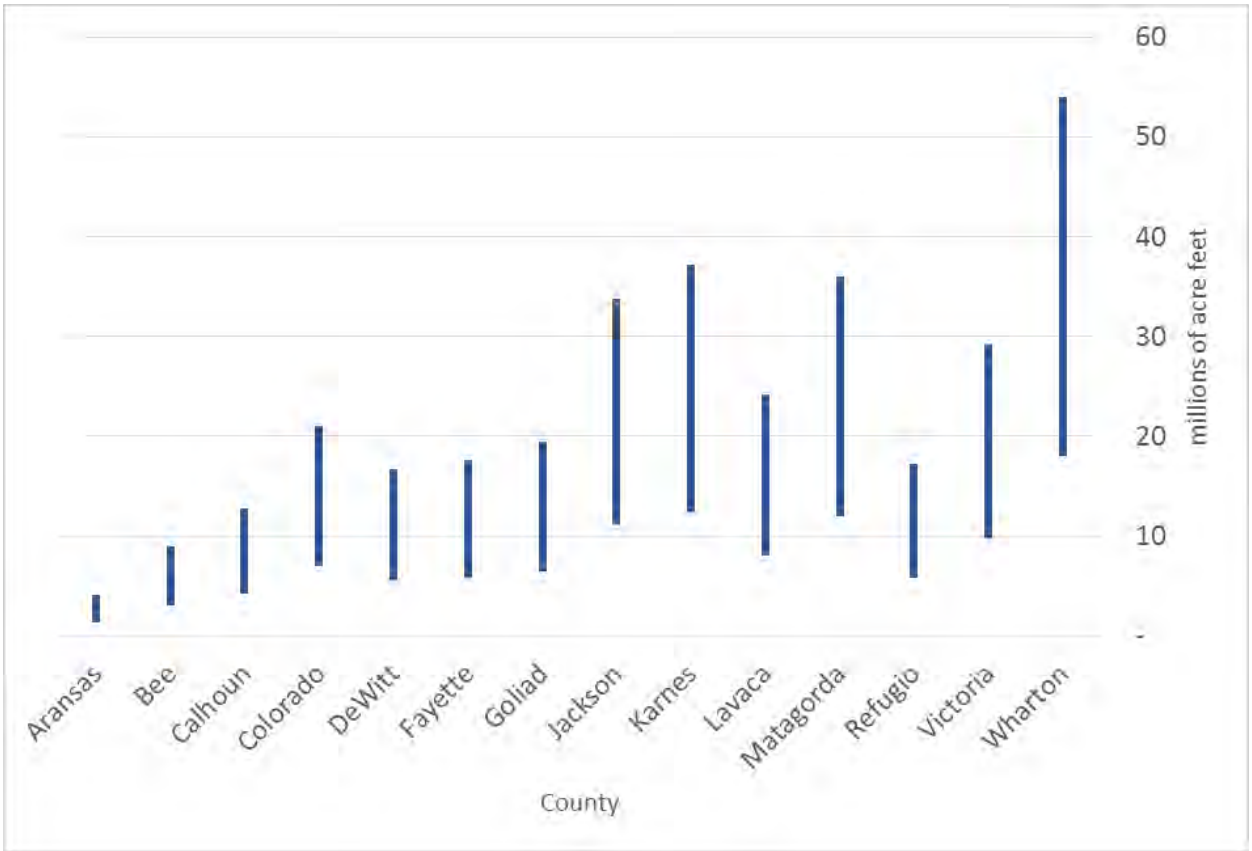

Figure 5-1 Total Estimated Recoverable Storage by County for the Gulf Coast Aquifer Provided by Wade and Anaya (2014).

Matagorda	2030				2050				2070			
	Chicot	Evangeline	Burkeville	Jasper	Chicot	Evangeline	Burkeville	Jasper	Chicot	Evangeline	Burkeville	Jasper
Inflow												
River Leakage	792	0	0	-	792	0	0	-	792	0	0	-
Recharge	22,372	0	0	-	22,372	0	0	-	22,372	0	0	-
Net Stream Leakage	32,163	0	0	-	33,575	0	0	-	34,247	0	0	-
Net Vertical Leakage Upper	-	9,009	-	-	-	9,306	-	-	-	9,533	-	-
Net Vertical Leakage Lower	-	318	0	-	-	291	0	-	-	262	0	-
Net Lateral Flow From Brazoria	-	1,218	-	-	-	1,212	-	-	-	1,180	-	-
Net Lateral Flow From Wharton	2,288	-	3	-	1,731	-	2	-	1,466	-	-	-
Total Inflow	*57,615*	*10,545*	*3*	-	*58,470*	*10,809*	2	-	*58,877*	*10,975*	-	-
Outflow												
Wells	31,733	7,121	0	-	31,733	7,121	0	-	31,733	7,121	0	-
Drains	243	0	0	-	241	0	0	-	240	0	0	-
Et	3,023	0	0	-	3,011	0	0	-	3,005	0	0	-
Net Head Dep Bounds	5,277	0	0	-	5,118	0	0	-	5,053	0	0	-
Net Vertical Leakage Upper	-	-	318	-	-	-	291	-	-	-	262	-
Net Vertical Leakage Lower	9,009	-	-	-	9,306	-	-	-	9,533	-	-	-
Net Lateral Flow To Brazoria	2,791	-	6	-	2,807	-	6	-	2,819	-	6	-
Net Lateral Flow To Calhoun	57	-	-	-	56	-	-	-	56	-	-	-
Net Lateral Flow To Jackson	346	595	-	-	579	610	-	-	662	620	-	-
Net Lateral Flow To Wharton	-	2,914	-	-	-	3,122	-	-	-	3,267	-	-
Net Lateral Outflow To Other Areas	6,176	-	-	-	6,014	-	-	-	5,948	-	-	-
Total Outflow	*58,655*	*10,630*	*324*	-	*58,865*	*10,853*	*297*	-	*59,069*	*11,008*	*268*	-
Inflow - Outflow	-1,040	-85	-321	-	-395	-44	-295	-	-192	-33	-268	-
Storage Change	-1,045	-70	-321	-	-395	-38	-295	-	-191	-24	-267	-
Model Error	5	-15	0	-	0	-6	0	-	-1	-9	-1	-
Model Error (percent)	0.01%	0.14%	0.00%	-	0.00%	0.06%	0.00%	-	0.00%	0.08%	0.37%	-

Refugio	2030				2050				2070			
	Chicot	Evangeline	Burkeville	Jasper	Chicot	Evangeline	Burkeville	Jasper	Chicot	Evangeline	Burkeville	Jasper
Inflow												
Recharge	14,562	0	0	-	14,562	0	0	-	14,562	0	0	-
Net Vertical Leakage Lower	397	98	0	-	305	92	0	-	250	85	0	-
Net Lateral Flow From Bee	5,130	2,573	16	-	5,077	2,549	15	-	4,944	2,530	15	-
Net Lateral Flow From Goliad	3,118	2,809	12	-	3,101	2,806	12	-	3,098	2,807	12	-
Net Lateral Flow From Victoria	223	-	-	-	166	-	-	-	163	-	-	-
Total Inflow	*23,430*	*5,480*	*28*	-	*23,211*	*5,447*	*27*	-	*23,017*	*5,422*	*27*	-
Outflow												
Wells	3,226	2,624	0	-	3,226	2,624	0	-	3,226	2,624	0	-
Drains	111	0	0	-	110	0	0	-	110	0	0	-
Et	1,846	0	0	-	1,843	0	0	-	1,842	0	0	-
Head Dep Bounds	4,905	0	0	-	4,888	0	0	-	4,882	0	0	-
Net Stream Leakage	4,419	0	0	-	3,985	0	0	-	3,707	0	0	-
Net Vertical Leakage Upper	-	397	98	-	-	305	92	-	-	250	85	-
Net Lateral Flow To Aransas	2,195	34	-	-	2,193	33	-	-	2,193	33	-	-
Net Lateral Flow To Calhoun	489	108	-	-	494	115	-	-	497	122	-	-
Net Lateral Flow To San Patricio	2,883	789	3	-	3,026	809	3	-	3,108	820	4	-
Net Lateral Flow To Victoria	-	1,520	-	-	-	1,540	-	-	-	1,551	-	-
Net Lateral Outflow To Other Areas	3,477	24	-	-	3,473	25	-	-	3,472	24	-	-
Total Outflow	*23,551*	*5,496*	*101*	-	*23,238*	*5,451*	*95*	-	*23,037*	*5,424*	*89*	-
Inflow - Outflow	-121	-16	-73	-	-27	-4	-68	-	-20	-2	-62	-
Storage Change	-123	-20	-73	-	-30	-4	-68	-	-21	-4	-62	-
Model Error	2	4	0	-	3	0	0	-	1	2	0	-
Model Error (percent)	0.01%	0.07%	0.00%	-	0.01%	0.00%	0.00%	-	0.00%	0.04%	0.00%	-

Figure 5-2 Water budgets calculated for Matagorda and Refugio counties from GMA 15 Baseline Option 1 DFC model simulation

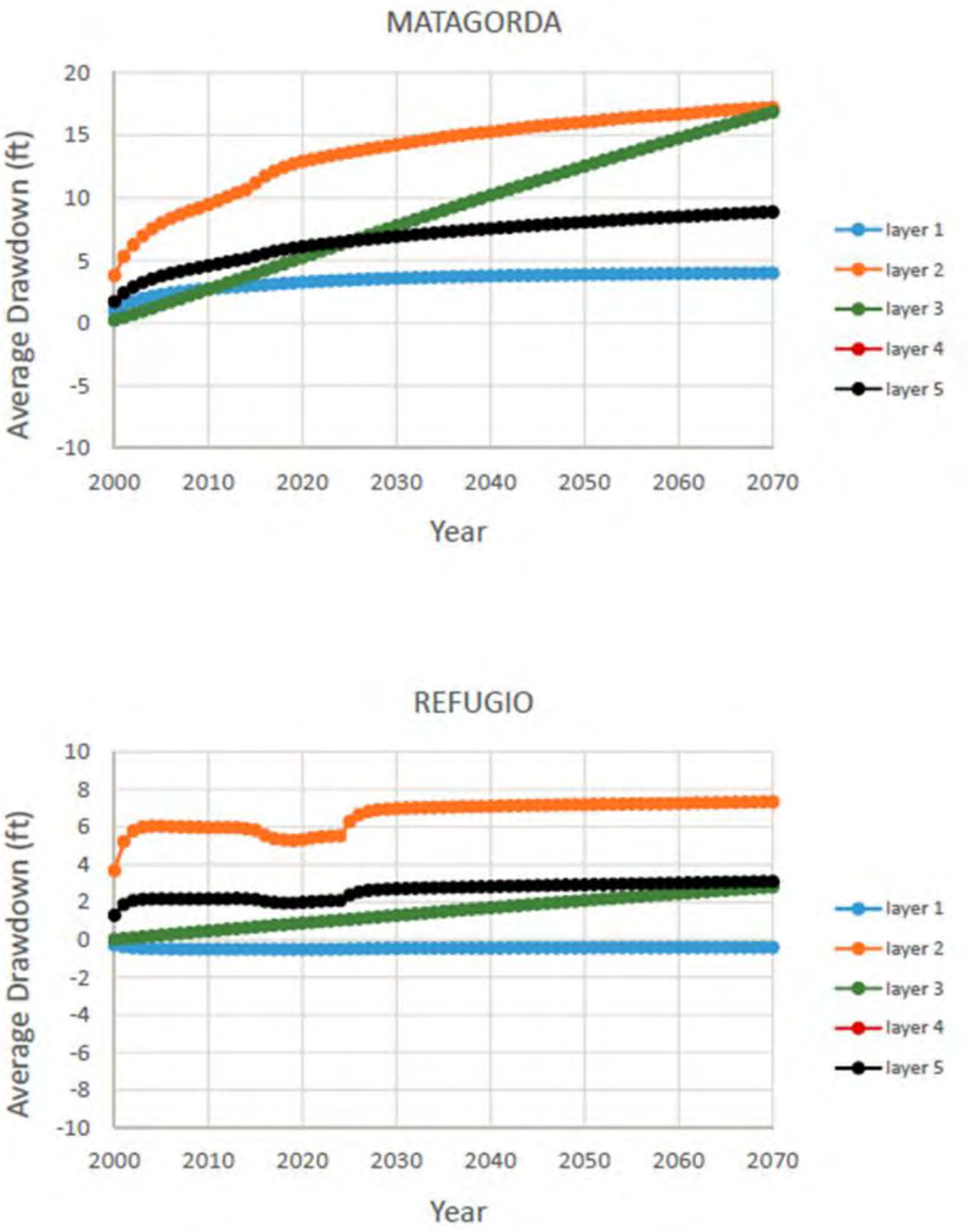

Figure 5-3 Average drawdown curves from 2000 to 2070 calculated for Matagorda and Refugio counties from GMA 15 Baseline Option 1 DFC model simulation (model layer 1 represents the Chicot Aquifer, layer 2 the Evangeline Aquifer, layer 3 the Burkeville confining unit, and layer 4 the Jasper Aquifer)

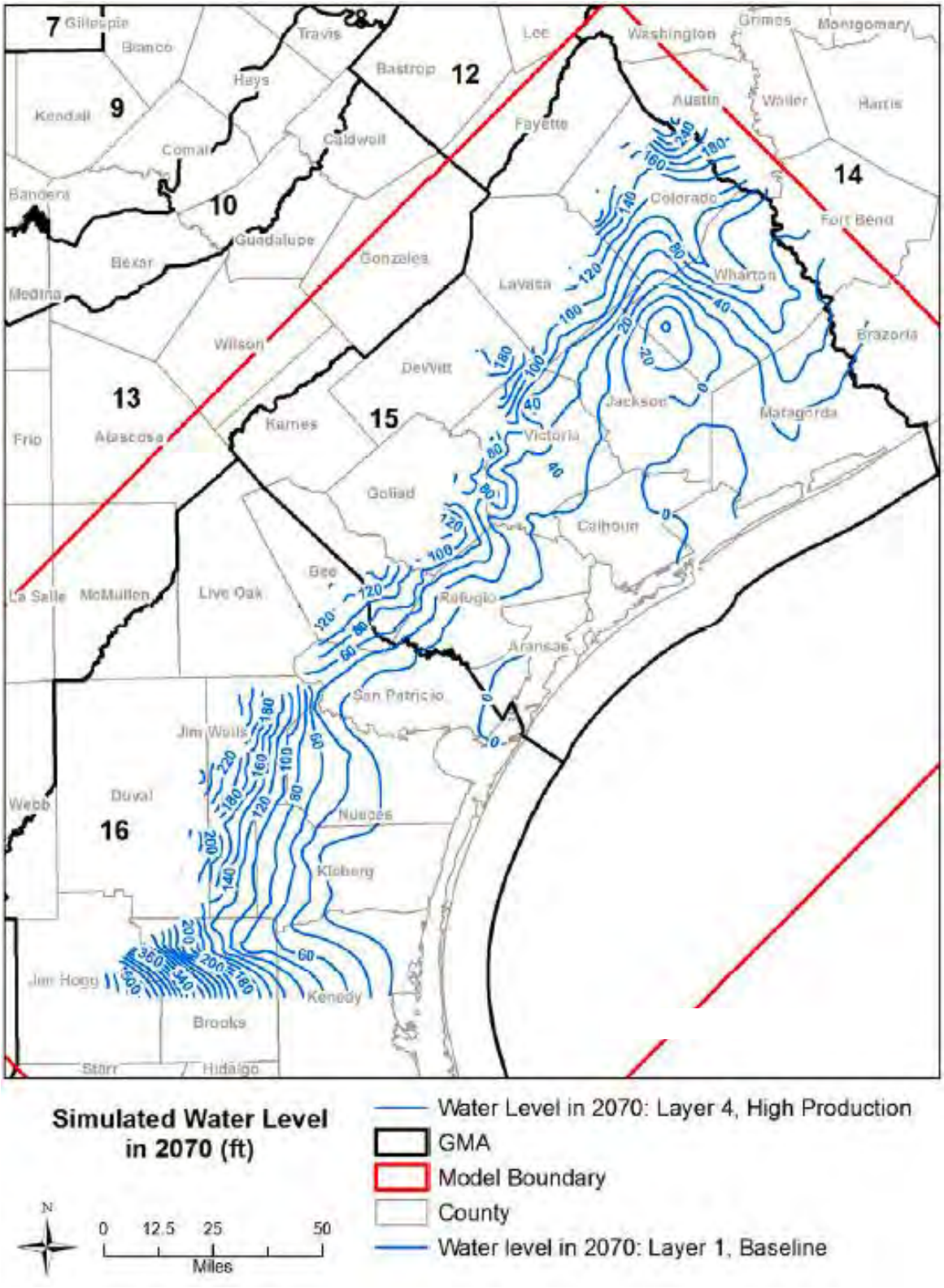

Figure 5-4 Contours of 2070 water levels for the Chicot Aquifer for from GMA 15 Baseline Option 1 DFC model simulation

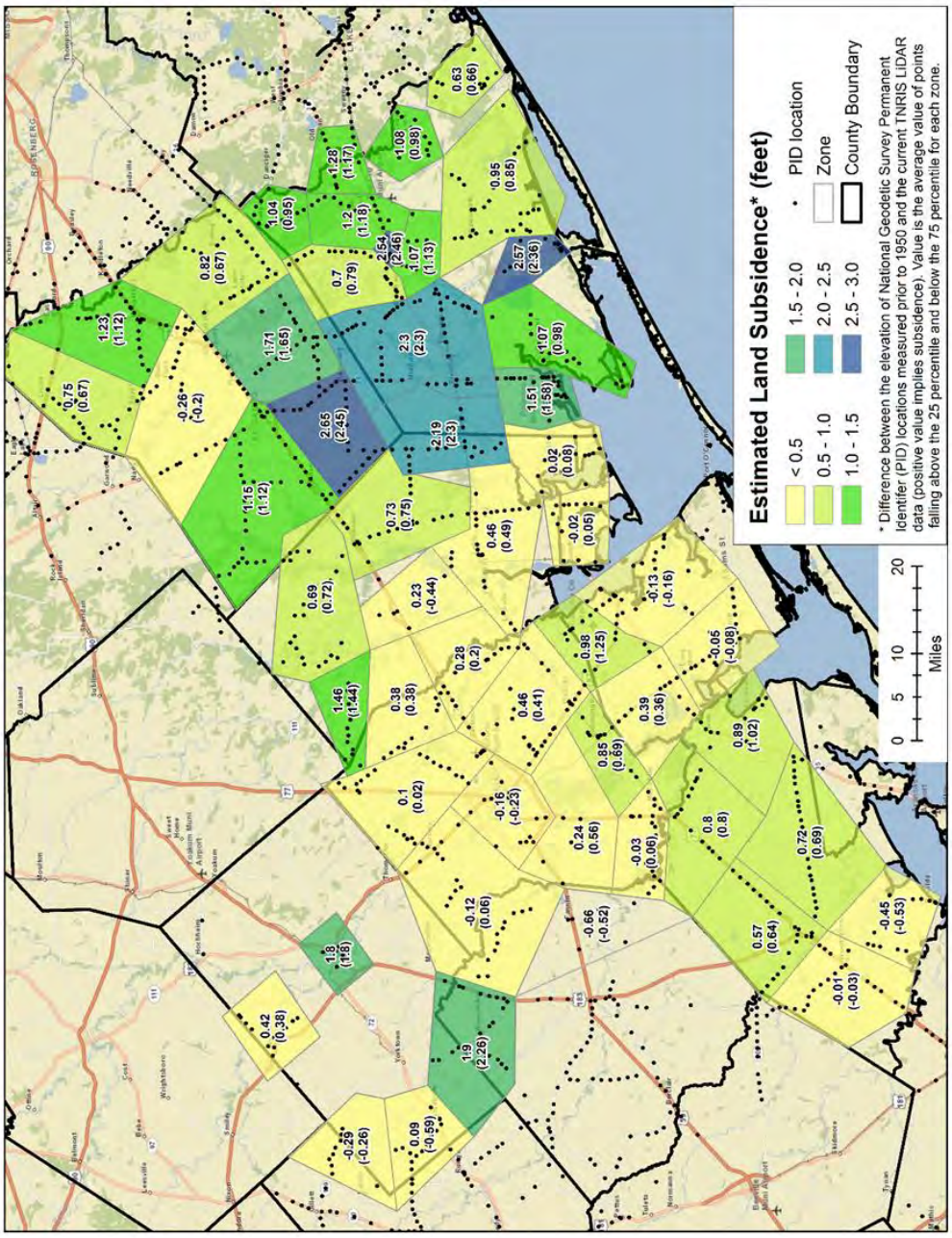

Figure 5-5 Estimated average land subsidence from before 1950 to after 2003 for specific polygons as determined by the difference between ground surface elevation from PIDs surveyed prior to 1950 and from LIDAR surveys after 2006 at the locations of the PIDs. Land Subsidence values are expressed as averages and medians (in parenthesis) of the differences calculated at PIDS located inside the polygons. Positive values indicate lower ground surface elevation at later time. Negative values indicate higher ground surface elevation at later time.

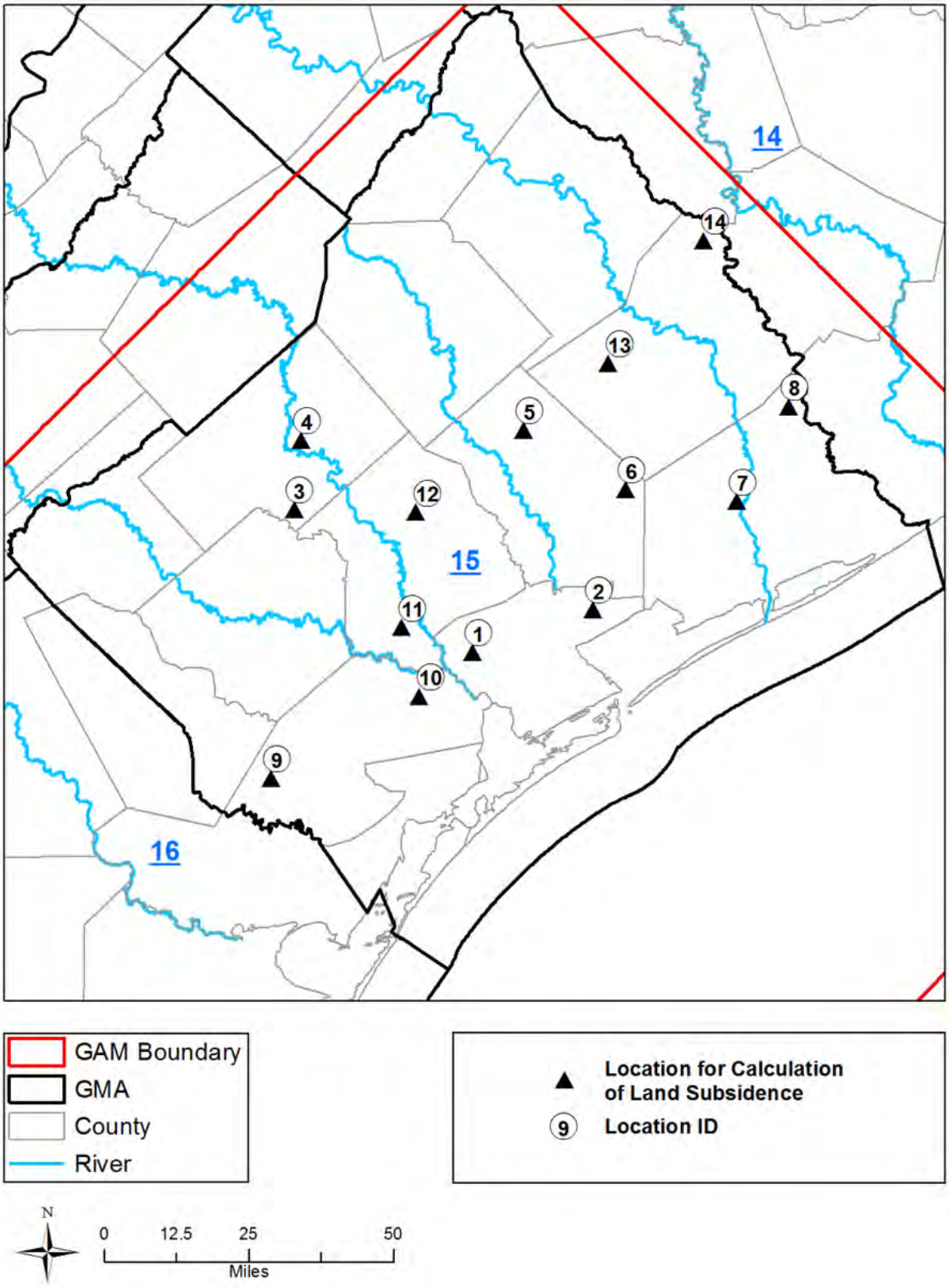

Figure 5-6 Locations in GMA 15 where land subsidence is calculated in Table 5-6.

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Desired Future Condition Explanatory Report for Groundwater Management Area 16

Prepared for Groundwater Management Area 16
Member Districts:

Bee Groundwater Conservation District
Brush Country Groundwater Conservation District
Corpus Christi ASR Conservation District
Duval County Groundwater Conservation District
Kenedy County Groundwater Conservation District
Live Oak Groundwater Conservation District
McMullen Groundwater Conservation District
Red Sands Groundwater Conservation District
San Patricio Groundwater Conservation District
Starr County Groundwater Conservation District

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January 2022

GEOSCIENTIST SEAL

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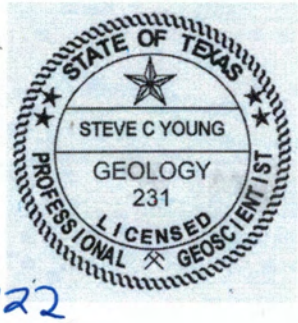

Dr. Steve Young was the technical lead responsible for assembling, interpreting, and documenting the information in the explanatory report. He is also the principal writer of the report.

Steven C Young

Signature

1/20/2022

Date

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ACRONYMS AND ABBREVIATIONS

%	percent
AFY	acre-feet per year
ASRCD	Aquifer Storage and Recovery District
DFC	Desired Future Condition
ft	feet
GAM	Groundwater Availability Model
GCAS	Gulf Coast Aquifer System
GCD	Groundwater Conservation District
GFM	Groundwater Flow Model
GMA	Groundwater Management Area
MAG	modeled available groundwater
NADA	Neighbors Against Destroying Aquifers
TERS	total estimated recoverable storage
TWC	Texas Water Code
TWDB	Texas Water Development Board
UWCD	Underground Water Conservation District

1.0 GROUNDWATER MANAGEMENT AREA 16

Groundwater Management Areas (GMAs) were created "in order to provide for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence caused by withdrawal of water from those groundwater reservoirs or their subdivisions, consistent with the objectives of Section 59, Article XVI, Texas Constitution…" (Texas Water Code [TWC] §35.001). GMA 16 is the southernmost of sixteen GMAs in the state and stretches from Corpus Christi to the Mexican border along the Gulf of Mexico coastline. (**Figure 1-1**).

GMA 16 includes all or portions of sixteen counties: Bee, Brooks, Cameron, Duval, Hidalgo, Jim Hogg, Jim Wells, Kenedy, Kleberg, Live Oak, McMullen, Nueces, San Patricio, Starr, Webb, and Willacy (**Figure 1-2**). **Table 1-1** lists the sixteen counties and their projected populations through 2070. Most counties in the GMA, particularly along the Rio Grande, are expected to grow over the next 50 years with Cameron, Hidalgo, and Webb counties experiencing the highest growth rates. Hidalgo County alone is expected to add over to 1.1 million people. Projected growth is much slower in the northeast section of the GMA, with the lowest growth rates in McMullen, Live Oak, and Kenedy counties, whose populations are projected to remain about the same over the next 50 years.

As part of the joint groundwater planning process, groundwater conservation districts (GCDs) falling within a GMA are required to coordinate and develop Desired Future Conditions (DFCs) for the aquifers within the GMA. Ten GCDs participate in joint planning through GMA 16: Bee GCD, Brush Country GCD, Corpus Christi Aquifer Storage and Recovery Conservation District (ASRCD), Duval County GCD, Kenedy County GCD, Live Oak Underground Water Conservation District (UWCD), McMullen GCD, Red Sands GCD, San Patricio County GCD, and Starr County GCD (Figure 1-2). **Table 1-2** lists the names of the designated representatives for the ten districts.

Based on the Texas Water Development Board (TWDB) delineations of major and minor Texas aquifers, GMA 16 contains portions of two major aquifers, the Gulf Coast Aquifer and the Carrizo-Wilcox Aquifer, and one minor aquifer, the Yegua-Jackson Aquifer (**Figure 1-3**). The primary aquifer used in GMA 16 is the Gulf Coast Aquifer. Four formations within the Gulf Coast Aquifer are considered as separate aquifers for joint planning purposes: the Chicot Aquifer, the Evangeline Aquifer, the Burkeville confining unit, and the Jasper Aquifer. Bee, Live Oak, and McMullen counties contain small areas of the downdip portion of the Carrizo-Wilcox Aquifer. Jim Hogg, Duval, Live Oak, and Starr counties contain small areas of Yegua-Jackson Aquifer. The Carrizo-Wilcox and Yegua-Jackson aquifers are not major sources of groundwater in GMA 16. Section 2 provides additional information on the Carrizo-Wilcox and Yegua-Jackson aquifers within GMA 16.

GMA 16 overlaps the Region M (Rio Grande Valley), and Region N (Coastal Bend) Regional Water Planning Areas (RWPAs) (**Figure 1-4**). GMA 16 participates in the regional water planning process in Texas by maintaining representatives in both of these Regional Water Planning Groups.

GMA 16 held joint planning meetings September 2019 through November 2021. **Table 1-3** lists the dates and the major discussion topics of the GMA 16 meetings. The minutes for these meetings are included as **Appendix A** of this report. Following the adoption of the proposed DFCs at the meeting on March 23, 2021, the GCDs held public meetings to present and discuss the proposed DFCs and solicit public

comment. Only Bee County GCD received a written comment during the public comment period. **Appendix B** contains the public comment received by Bee County.

The only public comment received by GMA 16 was discussed during GMA 16 meeting on September 21. Bee County GCD did not propose to change their DFCs in response to the public comment. The public comment was provided by Neighbors Against Destroying Aquifers (NADA). NADA expressed concerns about Bee County GCD achieving the proposed DFCs for the Gulf Coast Aquifer System (GCAS) of 7 feet (ft) drawdown between 2000 and 2080 for GMA 15, and 93 ft of drawdown between 2010 and 2070 for GMA 16. In their letter, NADA states the water level monitoring data in Bee County indicates that the GMA 16 drawdown of 93 ft is feasible whereas the GMA 15 drawdown of 7 ft is not feasible. In addition to their feasibility analysis of proposed DFCs, NADA provides recommendations regarding revised drawdown-based DFCs, addition a water quality-based DFCs, and rules changes. These recommendations were considered by Bee County GCD in their evaluation of the proposed DFCs.

The proposed DFCs were adopted by resolution during the GMA 16 November 2021 meeting. **Appendix C** provides the resolution. The adopted DFCs are discussed in Chapter 2.

Table 1-1 GMA 16 County Population Projections (from Region M & Region N draft Regional Water Plans)

COUNTY	2020	2030	2040	2050	2060	2070
Bee	33,478	34,879	35,487	35,545	35,579	35,590
Brooks	7,783	8,252	8,722	9,181	9,595	9,979
Cameron	478,974	559,593	641,376	729,461	820,068	912,941
Duval	12,715	13,470	14,098	14,644	15,080	15,435
Hidalgo	981,890	1,219,225	1,457,502	1,696,257	1,935,015	2,167,137
Jim Hogg	5,853	6,356	6,790	7,274	7,694	8,082
Jim Wells	44,987	48,690	52,052	55,533	58,600	61,410
Kenedy	463	498	504	507	508	508
Kleberg	35,567	38,963	42,202	45,324	48,251	50,989
Live Oak	11,683	11,690	11,690	11,690	11,690	11,690
McMullen	734	734	734	734	734	734
Nueces	374,157	407,534	428,513	440,797	449,936	456,056
San Patricio	68,760	72,114	74,043	75,451	76,405	77,049
Starr	70,803	80,085	88,633	97,107	104,687	111,555
Webb	318,028	393,284	464,960	530,330	591,945	647,433
Willacy	25,264	28,479	31,559	34,840	38,012	41,121

Table 1-2 Designated Representatives of the Ten Districts in Groundwater Management Area 16

Groundwater Conservation District	Designated Representative
Corpus Christi Aquifer Storage and Recover Conservation District	Esteban Ramos
Bee GCD	Lonnie Stewart
Brush County GCD	Luis Pena
Duval County	George Gonzalez
Kenedy County GCD	Andy Garza
Live Oak UWCD	Scott Bledsoe
McMullen GCD	Lonnie Stewart
Red Sands GCD	Armando Vela
San Patricio County GCD	Charles Ring
Starr County GCD	Reyna Guerra

Table 1-3 GMA 16 Joint Planning Meeting Dates and Topics of Discussion

Date	Major Discussion Topics
9/24/2019	▪ Discuss joint planning requirements and roles of consultant (INTERA) and Districts ▪ Discuss approach for non-GCD counties, non-relevant aquifers, and timeframe for simulations ▪ Solicit updated pumping data from GCDs
1/28/2020	▪ Discuss results of modeled pumping scenarios, using updated pumping data from GCDs ▪ Discuss options for calculating DFC/MAG values, including alternatives to TWDB assumptions ▪ Discuss 1st factor “Aquifer Uses and Conditions”
7/28/2020	▪ Discuss 2nd factor “Hydrologic Conditions” ▪ Discuss 3rd factor “Water supply needs and management strategies” ▪ Discuss 4th factor “Impact on private property rights” ▪ Discuss 5th factor “Impact on subsidence”
10/27/2020	▪ Discuss 6th factor “SocioEconomic Impacts” ▪ Discuss 7th factor “Other Environmental Impacts” ▪ Discuss TWDB update of the conceptual model for Gulf Coast Aquifer System GAM
1/28/2021	▪ TWDB reported on; (1) regional water plans; (2) brackish production zones; (3) ASR study assessment; (4) agricultural grants ▪ Discussed the TWDB flowchart and schedule for the DFC and MAG process ▪ INTERA presented the DFC model simulations for pumping scenarios # 1 and #2.
3/23/2021	▪ Discussed the TWDB flowchart and schedule for the DFC and MAG process ▪ INTERA presented the average drawdowns for DFC model simulations for pumping scenario #2 ▪ Agree to propose the DFCs that are generated from pumping scenario #2
9/21/2021	▪ TWDB explain the submittal process for the explanatory report ▪ INTERA provided an update on the writing of the explanatory report ▪ Discuss the public comments received by Bee County GCD, which were the only set of public comments received. ▪ Discussed appointing a representative for Region M and N ▪ Starr County reported they had an approved management plan and adopted rules
11/23/2021	▪ Approve Resolution for Adopting the Desired Future Conditions ▪ Declare Carrizo-Wilcox and Yegua-Jackson as non-relevant aquifers ▪ Review Explanatory Report

*ASR = aquifer storage and recovery, MAG = modeled available groundwater

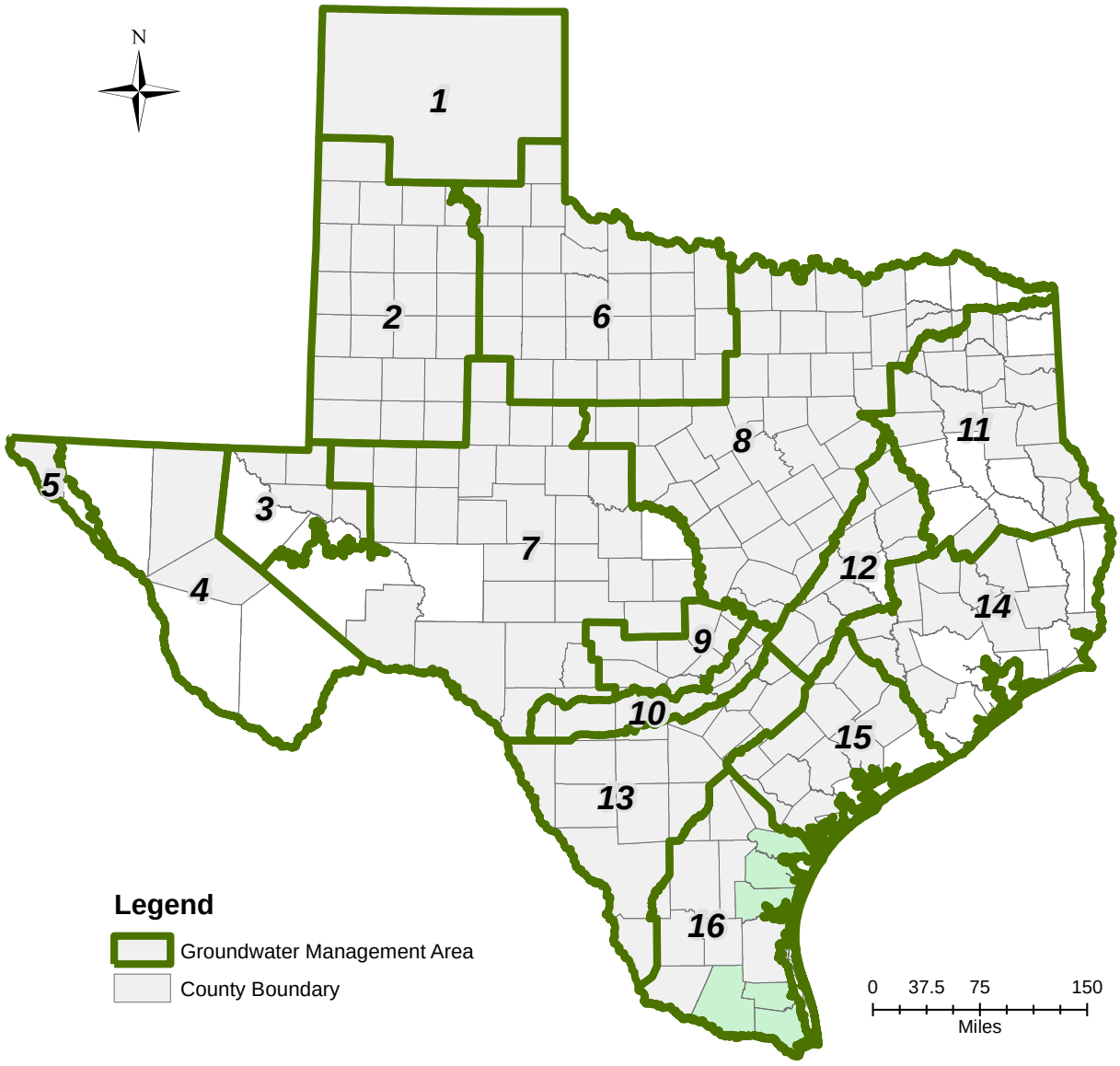

Figure 1-1 Location of Groundwater Management Area 16

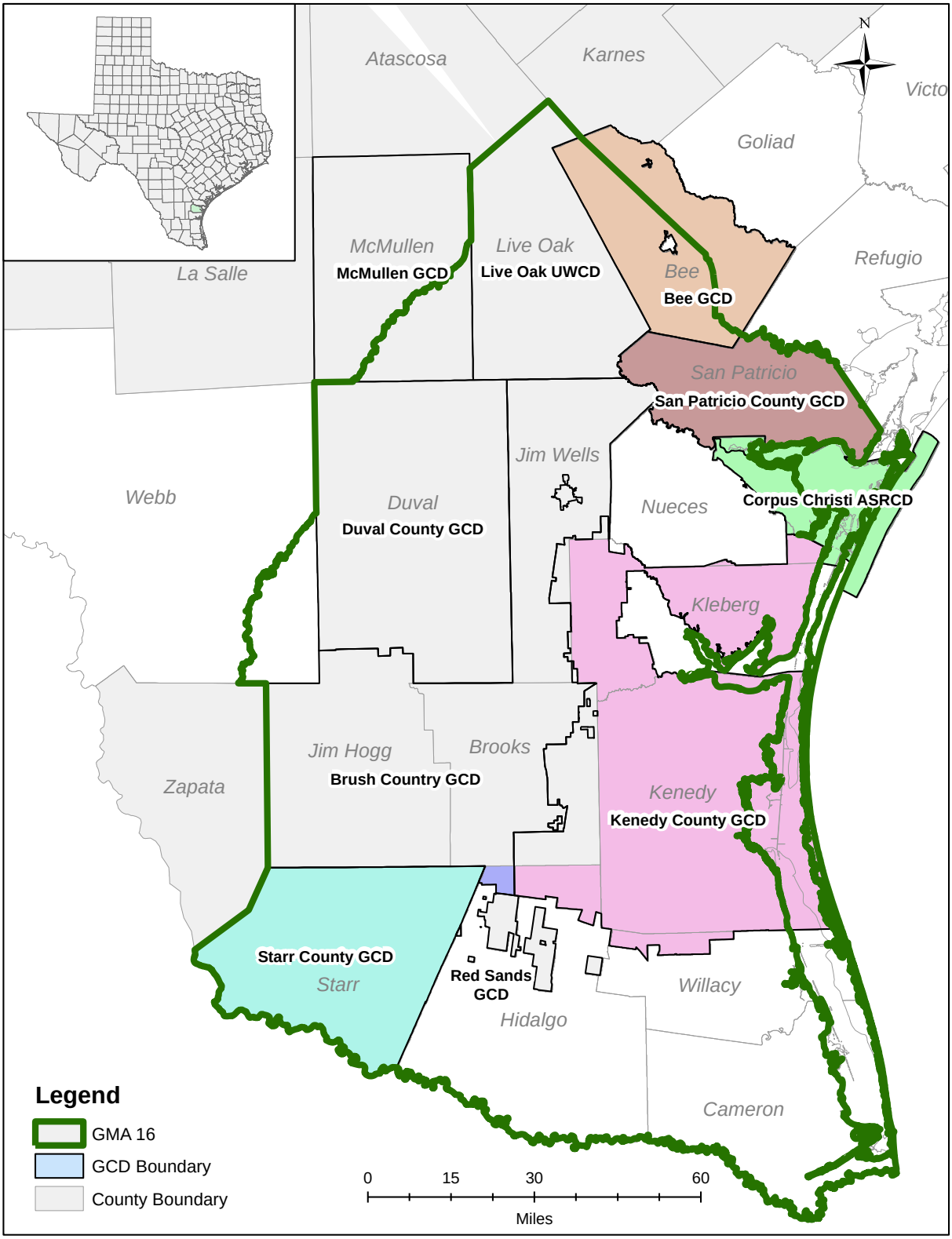

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Figure 1-2 Counties and GCDs in GMA 16

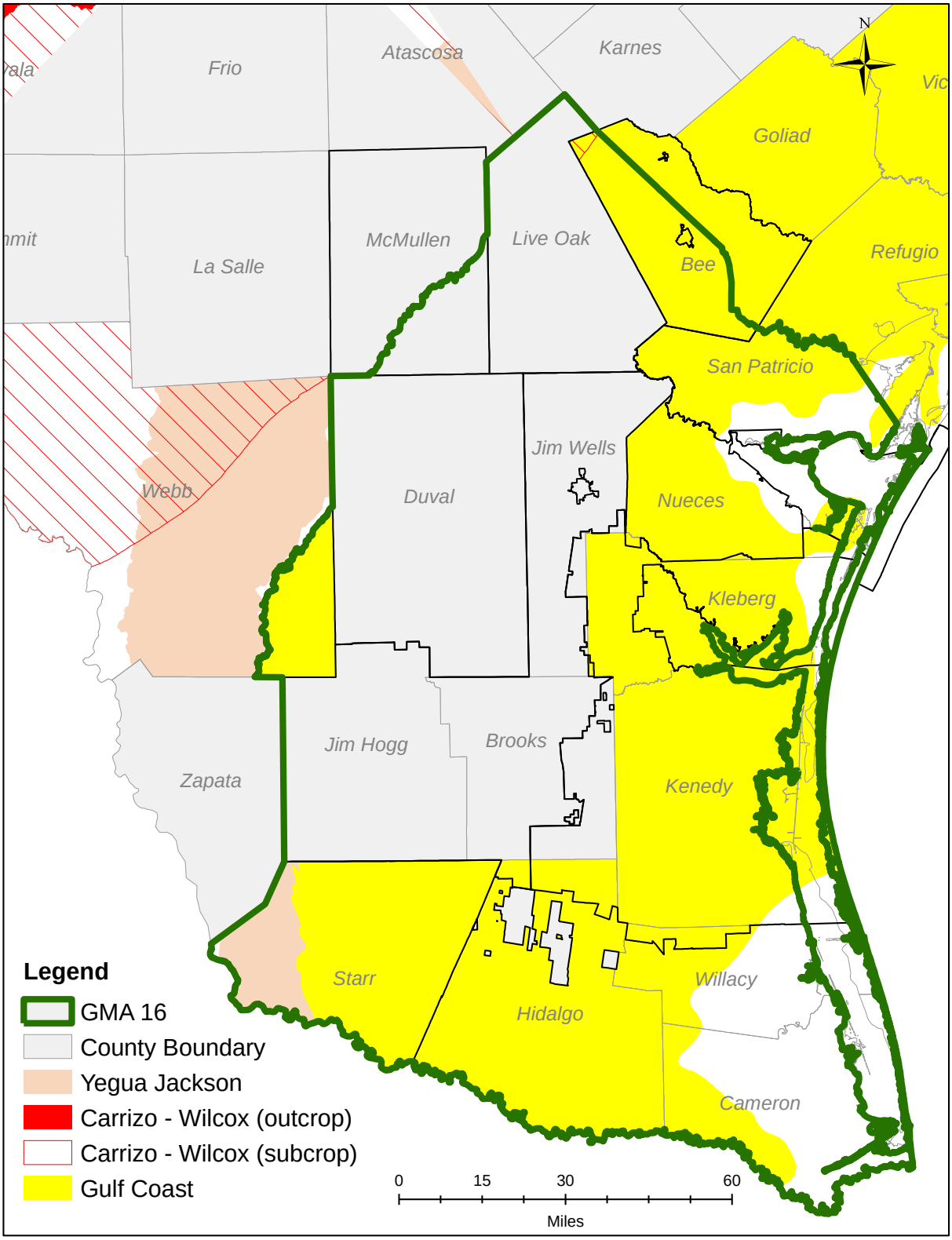

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Figure 1-3 Aquifers in GMA 16

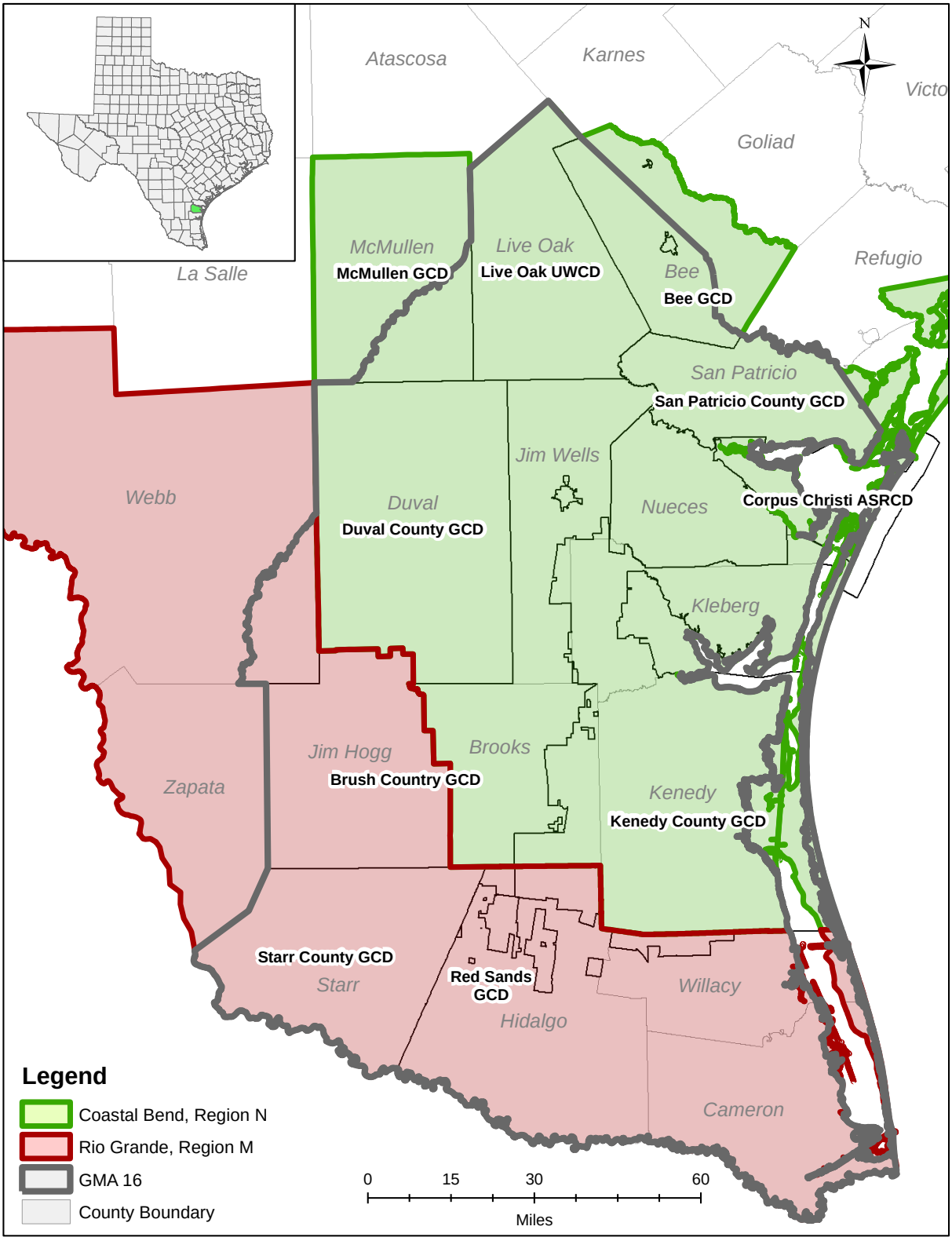

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Figure 1-4 RWPAs overlapping GMA 16

2.0 GMA 16 DFCS

The current round of joint planning followed the same approach for developing DFCs as used previously in 2011 and 2017. Alternative pumping scenarios were simulated using the GMA 16 Groundwater Availability Model (GAM) (Hutchison et al, 2011) and different methods for calculating DFCs and accounting for pumping were discussed. GMA 16 also considered the nine factors discussed in Section 3 when developing future pumping and evaluating the results of the model simulations. In particular, the GMA considered future water management strategies as proposed in the Regional Water Plan when evaluating pumping scenarios. The model results and the nine factors were discussed in public meetings (Table 1-2) prior to adopting these DFCs.

2.1 Gulf Coast Aquifer

The primary aquifer used in GMA 16 is the Gulf Coast Aquifer. Four formations within the Gulf Coast Aquifer are considered as separate aquifers for joint planning purposes: the Chicot Aquifer, the Evangeline Aquifer, the Burkeville confining unit, and the Jasper Aquifer. Regionally, the Burkeville Formation is considered a confining unit between the Evangeline and the Jasper aquifers. However, this formation is a local source of water in several areas of the GMA and so is treated as an aquifer for joint planning purposes.

On November 23, 2016, GMA 16 representatives approved a resolution titled Resolution to Adopt the DFCs for GMA 16 (**Appendix C**). In this resolution, GMA 16 adopted DFCs for each GCD (except for the Corpus Christi ASRCD) and non-District county within the GMA (District-specific DFCs) and a DFC for the entire (GMA-wide DFC). The GMAs adopted District-specific DFCs and GMA-wide DFCs for the Chicot Aquifer, the Evangeline Aquifer, the Burkeville Confining Unit, and the Jasper Aquifer individually as well as for the entire Gulf Coast Aquifer (these four formations combined). The adopted DFCs represent acceptable levels of drawdown for each District/non-District county and for the entire GMA as measured from 2010 to 2080. This timeline was chosen in order to be consistent with the timeline for the next round of regional/state water planning.

The adopted DFCs are presented in **Table 2-1**. All of Districts adopted a single DFCs for the Gulf Coast Aquifer System. The adopted DFCs are based on the average simulated drawdown within each region (District/non-District county or GMA) as calculated using the GMA 16 GAM (Hutchison and others, 2011) using the pumping rates provided in GMA 16 Pumping Scenario #2.

Table 2-2 lists average drawdowns from 2010 to 2080 for the Chicot, Evangeline, Burkeville Confining Unit, and the Jasper produced from Pumping Scenario #2. The average drawdowns were calculated using the boundaries for counties, GCDs, GMAs, and active aquifers as defined in the grid file "alt1_gma16_grid_poly05114.shp" produced by TWDB (available at https://www.twdb.texas.gov/groundwater/models/alt/gma16/gma16.asp). The GAM simulation of Pumping Scenario #2 will be provided to the TWDB along with the explanatory report. Table 2-1 provides the average drawdowns from 2010 to 2080 for the Chicot Aquifer, Evangeline Aquifer, Burkeville Confining Unit, and the Jasper Aquifer.

2.2 Carrizo-Wilcox Aquifer

Appendix D contains the GMA 16 memorandum that declares the Carrizo-Wilcox Aquifer in GMA 16 as a non-relevant aquifer for the purposes of joint planning. The decision to assign the Carrizo-Wilcox Aquifer as a non-relevant aquifer was discussed during the 9/24/2019, 1/28/2020, 11/23/2021 GMA 16 meetings. The portion of Carrizo-Wilcox Aquifer falling within the GMA is small (Figure 1-3), occurring only in Bee, Live Oak, and McMullen counties. While McMullen County does report pumping from the Carrizo-Wilcox Aquifer (based on TWDB historical groundwater pumping values), this pumping mainly occurs outside the GMA 16 boundary and so falls under the GMA 13 joint planning process. Otherwise, the portion of Carrizo-Wilcox Aquifer within GMA 16 occurs at depths (greater than 5,000 ft) that are generally considered economically infeasible for development (Kelley et al., 2004) and so current and estimated future Carrizo-Wilcox pumping is considered to be insignificant. Another important consideration in DFC development is the ability to monitor whether a DFC is achieved. Given the depth and lack of wells in this aquifer, monitoring this aquifer would be difficult and costly. Due to monitoring considerations, combined with the insignificant amount of current and predicted future pumping, GMA 16 declared the Carrizo-Wilcox Aquifer as non-relevant for joint planning purposes.

2.3 Yegua-Jackson

Appendix E contains the GMA 16 memorandum that declares the Yegua-Jackson Aquifer in GMA 16 as a non-relevant aquifer for the purposes of joint planning. The decision to assign the Carrizo-Wilcox Aquifer as a non-relevant aquifer was discussed during the 9/24/2019, 1/28/2020, 11/23/2021 GMA 16 meetings. The portion of Yegua-Jackson Aquifer falling within the GMA 16 is shown in Figure 1-3. The aquifer occurs in Duval, Jim Hogg, Live Oak, and Starr counties. For 2018 and 2019 (the latest years with data) the TWDB historical pumping is less than 50 acre feet per year for Duval, Jim Hogg, and Live Oak counties. Starr County historical pumping for 2018 and 2019 is less than 175 acre-ft per year. As with the Carrizo- Wilcox Aquifer, monitoring this aquifer would be difficult and costly. Due to high costs for groundwater monitoring and the relatively small amount of current pumping, and minimum impact on the water levels in the Gulf Coast Aquifer, GMA 16 declared the Yegua-Jackson Aquifer as a non-relevant aquifer. GMA 16 plans to re-elevate the status of the Yegua-Jackson as a non-relevant aquifer during future joint planning cycles.

Table 2-1 GMA 16 Adopted DFCs

Groundwater Conservation District	Average Drawdown (ft) Across the GCD in the Gulf Coast Aquifer System from January 1, 2010 to December 31, 2079
Bee GCD	93
Brush County GCD	89
Duval County	137
Kenedy County GCD	27
Live Oak UWCD	45
McMullen GCD	12
Red Sands GCD	60
San Patricio County GCD	69
Starr County GCD	94

Table 2-2 Average Drawdown Calculated for the Gulf Coast aquifer System and for the Gulf Coast Aquifers from January 2010 to December 2079 by GCD

GCD or Region	Simulated Averaged Drawdown (ft) 2010-2080*				
	Chicot	Evangeline	Burkeville	Jasper	Gulf Coast Aquifer System
Bee GCD	126	102	90	75	93
Brush County GCD	60	101	88	89	89
Duval County	99	183	121	109	137
Kenedy County GCD	18	56	18	18	27
Live Oak UWCD	100	83	79	25	45
McMullen GCD	0	0	0	12	12
Red Sands GCD	48	62	61	60	60
San Patricio County GCD	114	84	39	39	69
Starr County GCD	0	112	100	76	94
Non-district Cameron	125	196	78	78	119
Non-district Hidalgo	153	170	119	117	138
Non-district Kleberg	15	46	11	11	21
Non-district Nueces	33	40	15	15	26
Non-district Webb	0	226	0	91	161
Non-district Willacy	47	85	23	23	44
GMA 16 TOTAL	61	110	67	65	78

* 1/1/2010 to 12/31/2079

3.0 TECHNICAL JUSTIFICATION

A groundwater model is a tool that can be used to better understand the cause-and-effect relationship that different groundwater management strategies have on a groundwater system. To make informed decisions while developing DFCs, the GMA must consider the effects or the impacts of a DFC on each of the nine statutory factors listed in TWC §36.108(d). A groundwater model can be used to evaluate the impacts of various management strategies and provide the information that GCDs need as they consider these factors and develop DFCs.

3.1 GMA 16 Groundwater Flow Model

As discussed in Section 2, the proposed DFCs for the Gulf Coast Aquifer in GMA 16 were developed based on simulations of future pumping using the GMA 16 Groundwater Flow Model (GFM) (Hutchison et al, 2011). Since neither the existing groundwater models for the southern portion or the central portion of the Gulf Coast Aquifer fully encompass GMA 16, TWDB specifically developed this alternative model to use as a tool for the development of DFCs for GMA 16. It should be noted that the TWDB is currently developing a new Gulf Coast Aquifer System GAM that encompasses the combined areas of GMAs 15 and 16. However, until this model is completed, the 2011 GMA 16 GFM remains the most appropriate tool for joint planning purposes.

The GMA 16 GFM consists of six model layers. Model layers 1 through 4 represents the Chicot Aquifer, the Evangeline Aquifer, the Burkeville Confining Unit, and the Jasper Aquifer, respectively. Layer 5 represents the Yegua-Jackson Aquifer, including some portions of the Catahoula Formation. Layer 6 represents the combined strata of the Sparta, Queen City, and Carrizo-Wilcox Aquifers. **Figure 3-1** is a conceptual diagram of flow through and between each of the six model layers.

3.2 Simulations of Desired Future Conditions

During the previous joint planning cycle, the GMA 16 GFM was used to generate simulations of DFCs. The DFC simulations focused on predicting changes in water levels caused by changes in pumping during the time period 2010 through 2060. During the current joint planning cycle, the DFC simulations were extended to be 70-year simulations, representing the period 2010 through 2080. Drawdown was calculated from January 1, 2010 to December 31, 2079.

GMA 16 developed two updated pumping files and ran groundwater model simulations, the results of which were discussed and approved in public meetings. The first pumping file was based on the pumping file approved by the GMA 16 Board during the last joint planning cycle. The updated version of the pumping file added stress periods that extended pumping at an unchanged rate from 2060 to 2080 (**Figure 3-2**). The second pumping file also extended pumping to 2080 but incorporated pumping changes submitted by the member districts and their representatives (**Figure 3-3**). For districts that did not request pumping changes, pumping was left at an unchanged rate from 2060 to 2080.

Although the GMA 16 GFM remains the most appropriate tool for evaluating GMA 16 DFCs, the groundwater model and the simulated results should be considered tools to help the GMA make decisions, rather than as the sole source of DFC-related decisions. All groundwater models have inherent

uncertainty due to gaps in field data, ranges of potential input parameters, and assumptions made due to a model's spatial resolution, among other factors. The following section reviews some technical details that should be considered when evaluating these model results.

In the GMA 16 GFM, all model layers are considered fully confined even though outcrop areas in reality would typically be considered unconfined. Confined aquifers respond more quickly to pumping because the draining of unconfined pore space occurs more slowly than the reduction of potentiometric pressure in a confined aquifer. As a result, simulated drawdowns in the outcrop areas of the Gulf Coast Aquifer should be considered conservative estimates, in that model results likely represent greater drawdowns than would realistically be expected in the outcrop areas.

Another consequence with the GMA 16 GFM assuming all model layers are fully confined is that the model confined cells to continue pumping even when a cell "goes dry" (the potentiometric surface falls below the bottom elevation of the pumping cell). Dry cells occur in the updip areas of the Gulf Coast model layers during the simulations. As a result, the simulated drawdowns would produce physically unrealistic model results that overestimate drawdown, particularly in the outcrop areas.

GMA 16 discussed preliminary DFC simulations during their meeting on January 28, 2020. One of the key discussion topics was the development of Modeled Available Groundwater (MAG) from the DFC simulations performed by GMA 16 during the last planning cycle. Several GMA 16 stakeholders had questions about why the MAGs for several counties did not include all of the pumping that had occurred in the county. During their presentation, INTERA explained that the TWDB excluded all pumping outside of the official TWDB boundary for the Gulf Coast Aquifer system from the MAG. **Figure 3-4** shows, for example, that a portion of San Patricio County, lies outside of the TWDB official boundary for the Gulf Coast aquifer system. **Appendix F** provides a copy of the INTERA presentation that discusses several technical aspects related to the determination of MAG and DFCs.

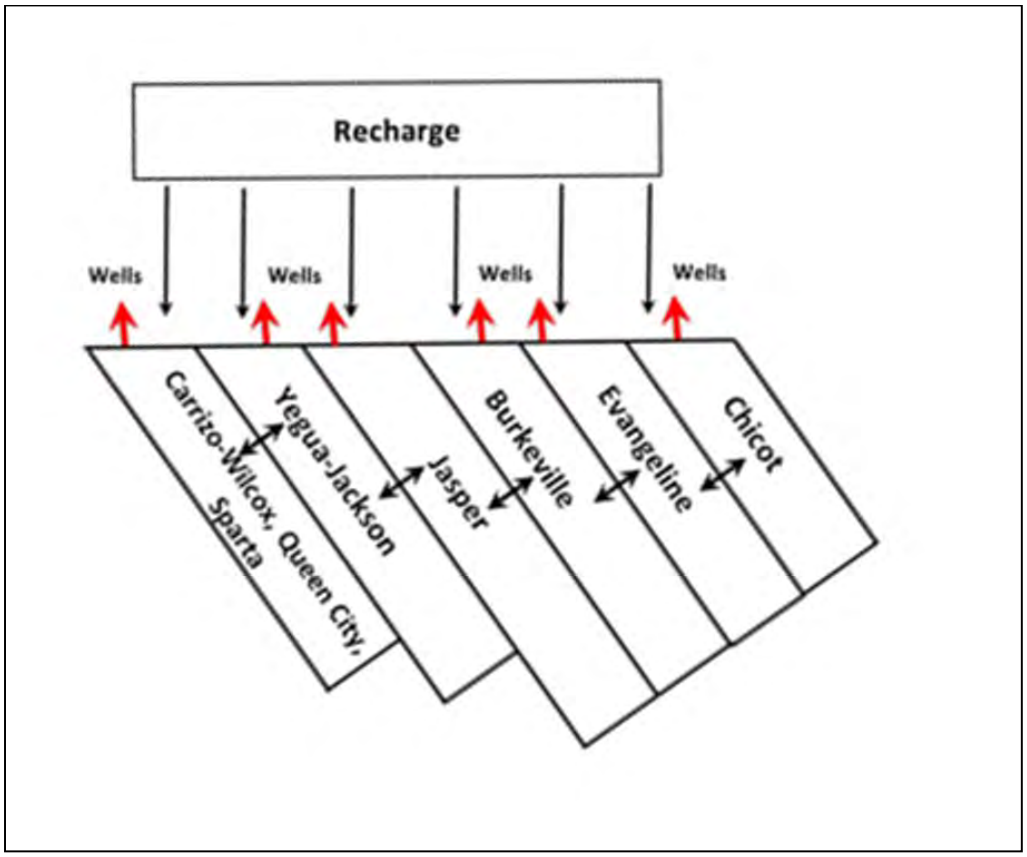

Figure 3-1 Conceptual model of flow in GMA 16 GAM (O'Rourke, 2017)

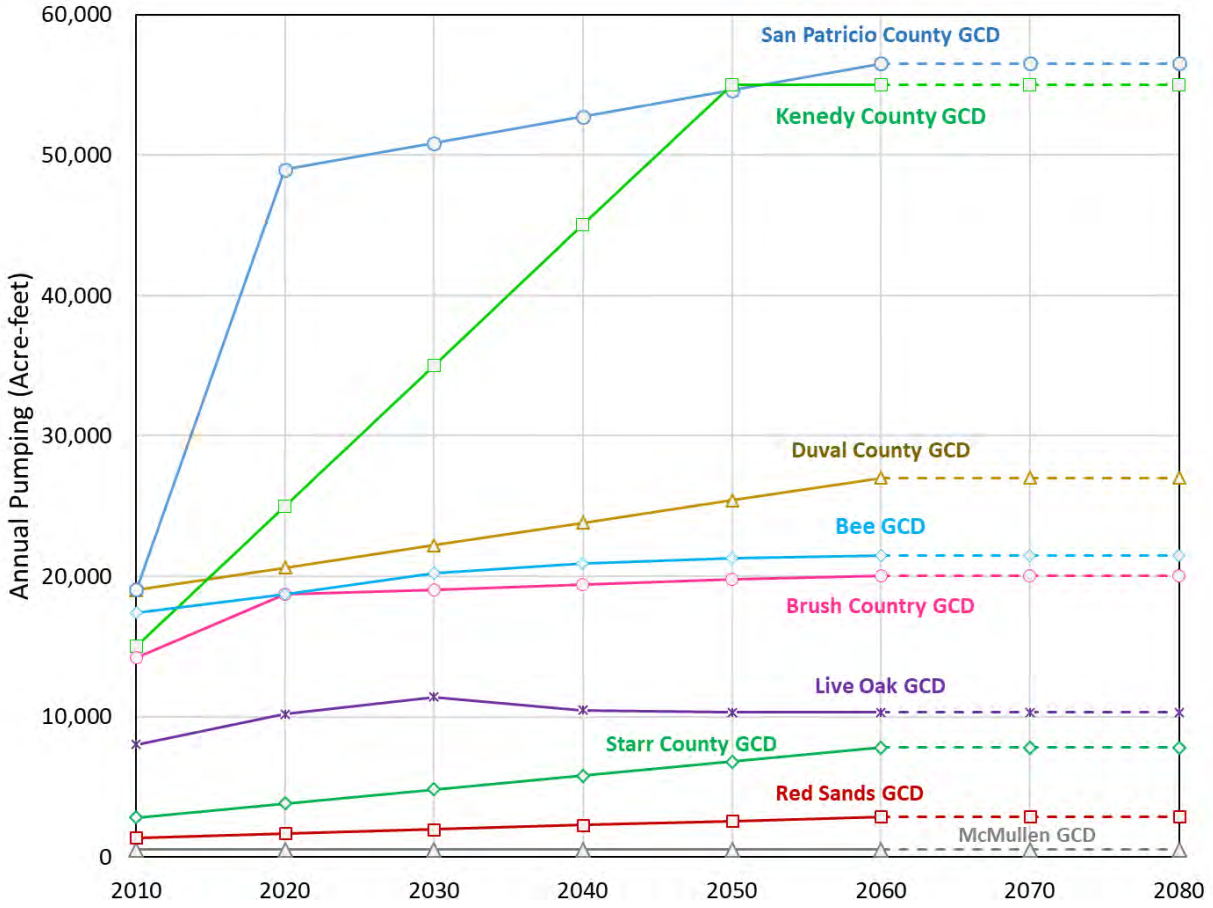

Figure 3-2 Pumping Scenario 1 with unchanged pumping extended from 2060 to 2080

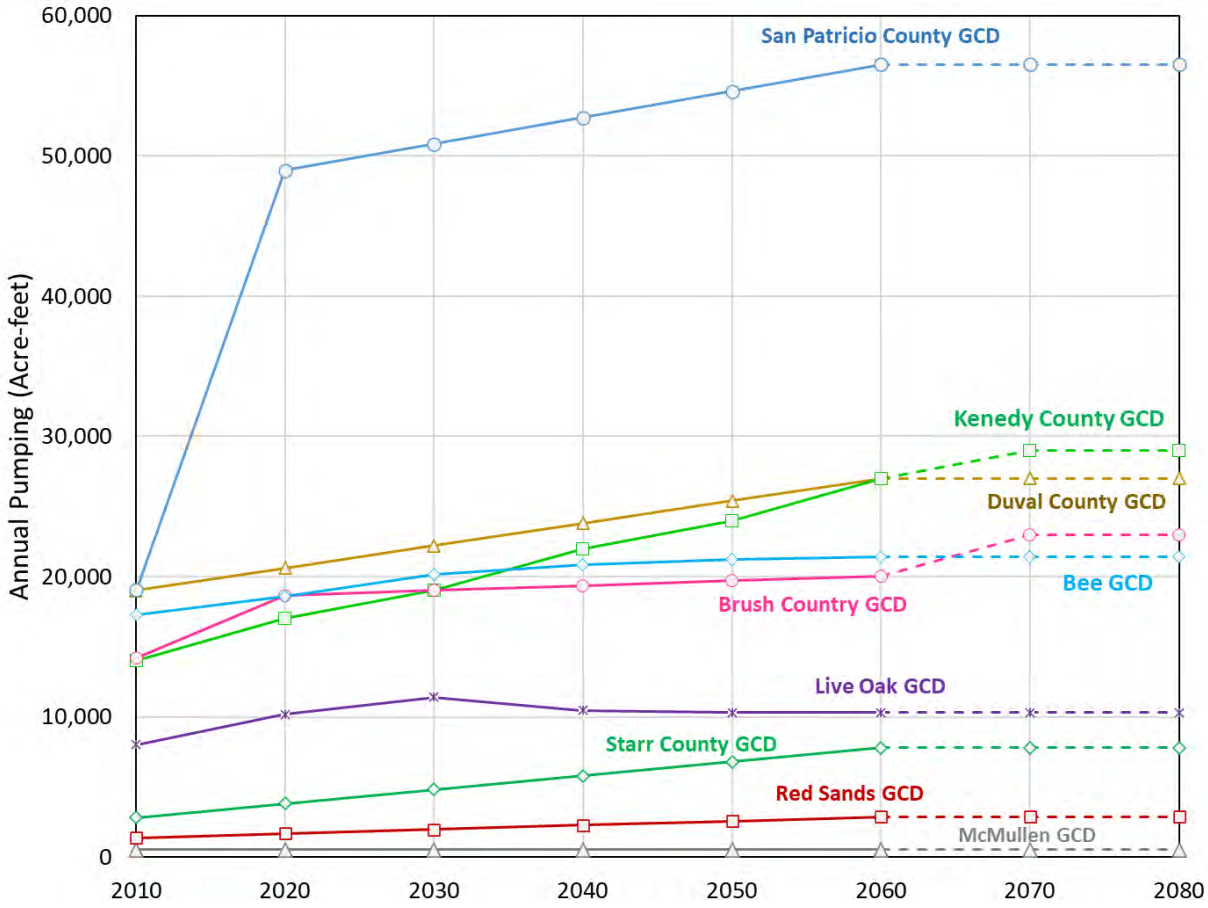

Figure 3-3 Pumping Scenario 2 with pumping updates extended from 2060 to 2080

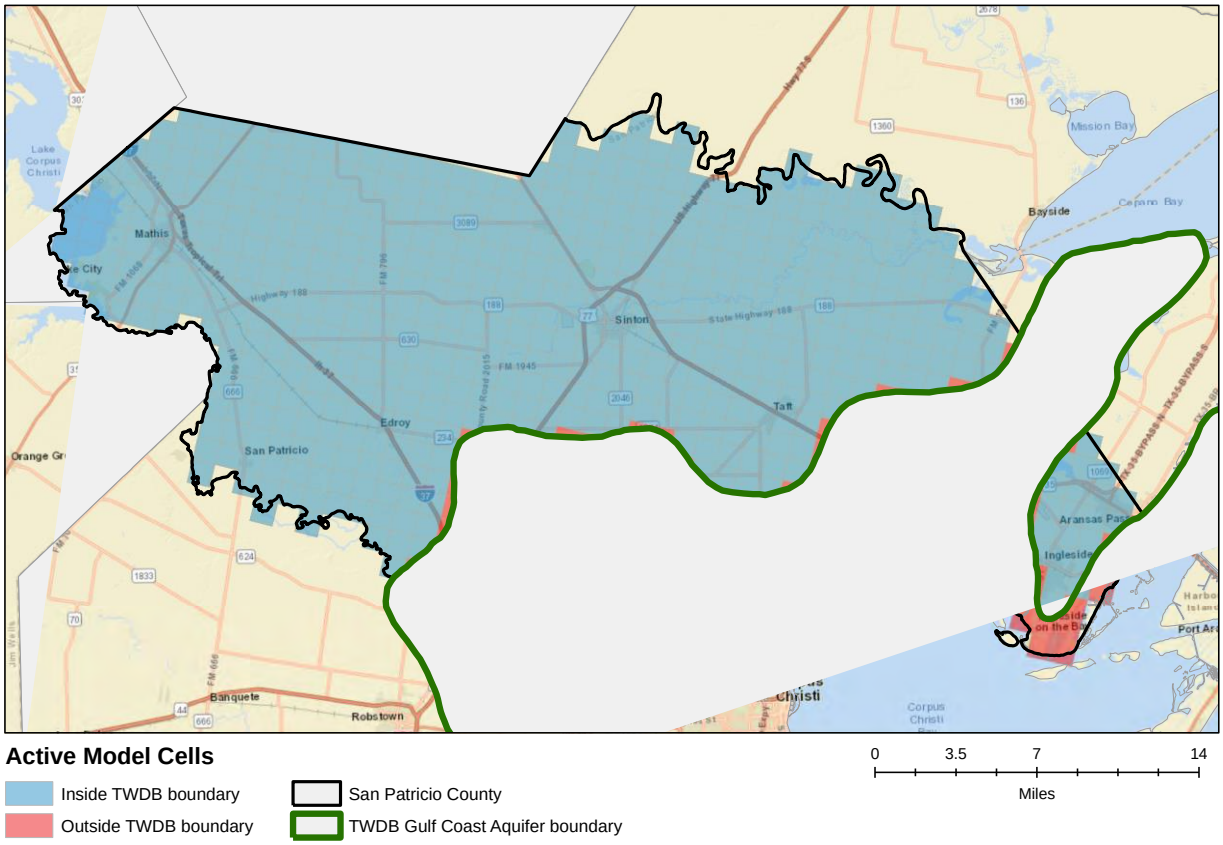

Figure 3-4 Map of San Patricio County showing the portions of the county are inside and outside of the TWDB official boundary for the Texas Gulf Coast Aquifer System

4.0 CONSIDERATION OF TEXAS WATER CODE NINE FACTORS

The following sections summarize the information that GMA 16 and each of its member districts used in its deliberations and discussions to evaluate the proposed DFCs with regard to the nine factors required by Texas Water Code Section 36.108(d).

4.1 Aquifer Uses and Conditions

Texas Water Code Section 36.108 (d)(1) requires that, during the joint-planning process, GCDs shall consider "aquifer uses or conditions within the management area, including conditions that differ substantially from one geographic area to another." In developing the proposed DFCs, GMA 16 and each of its member districts considered the following information regarding aquifer uses and conditions:

- Estimates of pumping from 2000 to 2017 from the TWDB Historical Groundwater Pumpage database from the Gulf Coast Aquifer and non-relevant aquifers.
- Estimates of Gulf Coast Aquifer pumping from 2000 to 2017 by use type from the TWDB Historical Groundwater Pumpage database.
- Groundwater monitoring data (aquifer water-level elevations and calculated drawdowns from 2000) from the TWDB Groundwater database for the years 2000 to 2019.

On January 28, 2020, INTERA discussed the information cite above in a titled "Groundwater Management Area 16 Joint Planning Cycle 2019-2022 : Aquifer Uses & Conditions" at the public GMA 16 Board meeting. This presentation is included as **Appendix G**. This information was used to evaluate baseline hydrogeologic conditions prior to the start of the seventy-year period being considered for the new DFC. In general, the Gulf Coast Aquifer in GMA 16 has not been as heavily developed as in other parts of the state and reported pumping in most counties appears either stable or in decline over the past 10 years. The monitoring well water level hydrographs are sparse across GMA 16, but in general do not indicate declining water levels in the period between 2000 and 2020. Several counties had individual wells with increasing water levels since 2000. However, in most counties, water levels appear essentially static, with water levels in most wells remaining within +/- 10 feet of 2000 water levels.

4.2 Water Supply Needs and Water Management Strategies

Texas Water Code Section 36.108 (d)(2) requires that, during the joint-planning process, GCDs shall consider "the water supply needs and water management strategies included in the state water plan." The State Water Plan is a combination of regional water plans created by regional planning groups across the state. Portions of GMA 16 fall within Regional Water Planning Areas M and N. For the current joint-planning process, GMA 16 relied on the draft 2021 Regional Water Plans for Region M (Rio Grande Valley), and Region N (Coastal Bend), as these were the most up-to-date estimates of future water needs and water management strategies within the GMA during the current joint planning process. GCD representatives from GMA 16 regularly attended the planning meetings for Regions M and N. In addition, the consultants from Regions M and N provided GMA 16 with in-person or written comments on the Regional Water Plan which improved the Board's understanding of this topic and provided insight for consideration during the DFC development process. GMA 16 and each of its member districts considered the following information regarding water supply needs and water management strategies:

- Existing Groundwater Supplies data from the draft 2021 Regional Water Plans
- Predicted Demand data from the draft 2021 Regional Water Plans
- Proposed Water Management Strategies (with groundwater source) data from the draft 2021 Regional Water Plans
- Future pumping estimates used in developing the proposed DFCs

On July 28, 2020, INTERA discussed the information cited above in a presentation titled "Groundwater Management Area 16 Joint Planning Cycle 2019-2022 : Water Supply Needs & Management Strategies" at the public GMA 16 Board meeting. This presentation is included as **Appendix H** In general, water demand is estimated to remain relatively stable in most counties, with 2070 demand remaining within 10 percent (%) of 2020 demand. The exceptions include McMullen and Willacy counties where demand is projected to decline 60 and 15% respectively, over this period. In addition, demand is projected to increase about 15% in Nueces County and a little over 20% in both Jim Wells and Kleberg counties. In counties where existing water supplies do not meet predicted demand, the Regional Water Plans provide Proposed Water Management Strategies to cover the deficit. While the GMA 16 counties in Region M (with the exception of Jim Hogg County) largely rely on non-groundwater Water Management Strategies, a majority of the new water supply for the GMA 16 counties in Region N is expected to come from increased groundwater production in the Gulf Coast Aquifer. The pumping scenario used to develop the proposed DFCs was evaluated against the Regional Water Plan and found to sufficiently account for both existing groundwater supplies and proposed water management strategies that use groundwater as a source.

4.3 Hydrologic Conditions within GMA 16

Texas Water Code Section 36.108 (d)(3) requires that, during the joint-planning process, GCDs shall consider "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." In developing the proposed DFCs, GMA 16 and each of its member districts considered the following information regarding hydrologic conditions within the GMA:

- Geology and hydrogeology of the four component hydrogeologic layers of the Gulf Coast Aquifer system: the Chicot Aquifer, Evangeline Aquifer, Burkeville Confining Unit, and the Jasper Aquifer.
- Total estimated recoverable storage (TERS) from the Gulf Coast Aquifer by county and GCD from the TWDB report GAM RUN 12-025 (Jigmond and Wade, 2013)
- Average annual recharge, inflows, and discharge from the Gulf Coast Aquifer by GCD from TWDB GAM run reports.
- Comparison of modeled pumping used to develop the DFCs to TERS and the average annual recharge, inflows and discharge calculations.

On July 28, 2020, INTERA discussed the information cite above in a presentation titled "Groundwater Management Area 16 Joint Planning Cycle 2019-2022: Hydrological Conditions" at the public GMA 16 Board meeting. This presentation is included as **Appendix I**.

4.3.1 Total Estimated Recoverable Storage

TWDB provided calculations of TERS by county and GCD in GMA 16 in Jigmond and Wade (2013). A copy of this report is included as **Appendix J**. The calculated TERS values by GCD are provided in **Table 4-1**.

The TERS is the amount of groundwater represented by recovery scenarios from 25 to 75% recovery of the total porosity-adjusted aquifer volume. As shown in Table 4-1, the TERS for GMA 16 ranges from approximately 251 to 752 million acre-feet of groundwater, or 25 and 75%, respectively, of the total storage volume of about one billion acre-feet.

The calculated TERS value is an estimate of physical availability and is considered during the DFC development process because it can be useful for illustrating the large volumes of groundwater in storage in a given aquifer. However, the TERS calculation relies on several simplifying assumptions that also factored into GMA 16's consideration of TERS. For instance, the TERS calculation does not distinguish between fresh and brackish or saline water and so can include water that is not fit for use without extensive treatment. The TERS calculation includes groundwater within the entire aquifer thickness and so can include water that is deep and not economically feasible to develop. The TERS calculation also does not take into account other pumping effects that the GMA has to consider during DFC development, such as spring flow or subsidence. In GMA 16, the calculated TERS value is much greater than the highest practicable level of groundwater production, and this is reflected in the pumping scenarios used for developing the proposed DFCs.

4.3.2 Average Annual Recharge, Inflows and Discharge

TWDB provided calculations of Annual Recharge, Inflow and Discharges for each GCD in the following GAM Run reports : GAM Run 17-015 (Bee GCD), GAM Run 17-001 (Brush Country GCD), GAM Run 18-012 (Corpus Christi ASRCD), GAM Run 16-011(Duval County GCD), GAM Run 16-009 (Kenedy County GCD), GAM Run 14-014 (Live Oak UWCD), GAM Run 17-011 (McMullen GCD), GAM Run 16-008 (Red Sands GCD), GAM Run 16-003 (San Patricio GCD), and GAM Run 18-016 (Starr County GCD). These inflows and outflows represent the average annual value in the over the historical period of 1980 to 2000. These values were calculated from the alternative numerical groundwater flow model for the Gulf Coast Aquifer in GMA 16 (Hutchison et al., 2011) for Brush Country GCD and Kenedy County GCD, from the southern portion of the Gulf Coast Aquifer GAM (Chowdhury and Mace, 2007) for Red Sands GCD and Starr County GCD, and from the central portion of the Gulf Coast Aquifer GAM (Chowdhury and others, 2004) for Bee GCD, Corpus Christi ASRCD, Live Oak UWCD, San Patricio GCD, Duval County GCD, and McMullen GCD.

While these groundwater models are the best tools to evaluate regional groundwater flow, it should be noted that there is inherent uncertainty to the calculation of inflows and outflows. The models are simplified with square mile grid cells and not necessarily calibrated to the degree needed to reliably quantify surface-groundwater interaction. During the discussion at the GMA 16 board meeting, inflows and outflows were compared to the minimum and maximum modeled pumping values from the pumping scenario used to develop the proposed DFCs. Based on this review, the GMA does not anticipate the implementation of the proposed DFCs to significantly impact the hydrological conditions of the GMA during the planning horizon.

Table 4-1 Total Estimated Recoverable Storage in GMA 16 by GCD (from Jigmond and Wade, 2013)

Groundwater Conservation District	Total Storage (acre-feet)	25% of Total Storage (acre-feet)	75% of total Storage (acre-feet)
Bee	25,000,000	6,250,000	18,750,000
Brush Country	150,000,000	37,500,000	112,500,000
Corpus Christi ASRCD	6,000,000	1,500,000	4,500,000
Duval County	45,000,000	11,250,000	33,750,000
Kenedy County	360,000,000	90,000,000	270,000,000
Live Oak	35,000,000	8,750,000	26,250,000
McMullen	2,100,00	525,000	1,575,000
Red Sands	3,100,000	775,000	2,325,000
San Patricio County	51,000,000	12,750,000	38,250,000
Starr County	15,000,000	3,750,000	11,250,000
No District	310,000,000	77,500,000	232,500,000
Total	1,002,200,000	250,550,000	751,650,000

4.4 Other Environmental Impacts Including Spring Flow and Other Interactions Between Groundwater and Surface Water

Texas Water Code §36.108 (d)(4) requires that, during the joint-planning process, districts shall consider "other environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water." In developing the proposed DFCs, GMA 16 and each of its member districts considered the following information regarding other environmental impacts within the GMA:

- The physical mechanisms whereby groundwater pumping can cause impacts to the environment such as reduced flows to springs, reduced flows to streams, and lowering the water table
- Hydrological conditions associated with sea water intrusion
- How the GMA 16 GFM simulates surface water – groundwater interaction
- How the GMA 16 GFM simulates spring – groundwater interaction
- How the GMA 16 GFM simulates ocean – groundwater interaction

On October 27, 2020, INTERA discussed the information cited above in a presentation titled "Groundwater Management Area 16 Joint Planning Cycle 2019-2022 : Other Environmental Impacts" at the public GMA 16 Board meeting. This presentation is included as **Appendix K**. The presentation provides the simulated water budgets and water levels for Pumping Scenario #2, which is the set or pumping rates to develop the adopted DFCs in Table 2-1.

As discussed previously, the purpose of the GMA 16 GAM is to evaluate regional drawdown in support of developing DFCs. It may not be suited to adequately predict groundwater-surface water interaction in a quantitative fashion. Water budgets presented previously indicate that reduced water levels may affect streams in the GMA. However, GMA 16 anticipates that the pumping rates associated with the DFC scenario will not impact environmental conditions significantly during the planning horizon and would 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.

4.5 Subsidence

TWC 36.108 (d)(5) requires that, during the joint-planning process, GCDs shall consider "the impact on subsidence." In developing the proposed DFCs, GMA 16 and each of its member districts considered the following information regarding subsidence within the GMA:

- Options for measuring land subsidence
- Physical mechanisms that cause land subsidence In
- Historical study of subsidence along the Texas Gulf Coast in Texas Department of Water Resources Report 272 (Ratzlaff, 1982)
- TWDB report Vulnerability of Texas Aquifers to Subsidence (Furnans and others, 2017)
- TWDB report Predictive Simulation Report: Lower Rio Grande Valley Groundwater Transport Model (Hutchison, 2017)
- Analysis of areas of high drawdown in GMA 16.

On July 28, 2020, INTERA discussed the information cited above in a presentation titled "Groundwater Management Area 16 Joint Planning Cycle 2019-2022: Consideration of Land Subsidence" at the public GMA 16 Board meeting. This presentation is included as **Appendix L**.

Dewatering of clay layers can lead to compaction and ultimately observable subsidence if significant dewatering continues over time. While subsidence due to pumping in the Gulf Coast Aquifer has been well-documented in other parts of the state, particularly Houston (see Kasmarek, 2013), subsidence has not historically been identified as an issue in GMA 16. But, because the Gulf Coast Aquifer in GMA 16 is similar to the strata in the Houston area, with multiple interlayered strata of clays and sands, the potential for subsidence was considered during DFC development.

Texas Department of Water Resources Report 272 (Ratzlaff 1982) provides a study of subsidence along the Texas Gulf Coast. The report does not document any significant subsidence between 1918 and 1975 in the counties of Jim Wells, Kleberg, Nueces, and San Patricio. The maximum measured subsidence between 1918 and 1951 in the area encompassing Brooks, Cameron, Kenedy, Hidalgo, and Willacy counties was only 0.42 ft, with 90% of the subsidence occurring before 1943. The only location in GMA 16 with more than 0.5 ft of land subsidence was in Saxet Oil and Gas field near western Corpus Christi where measured subsidence between 1942 and 1975 was 5.28 ft. This subsidence is likely due to historical oil and gas production, not groundwater pumping. In addition to the available measurements of land subsidence, the INTERA presentation discuss the results of two recent TWDB reports (Furnans and others, 2017; Hutchison, 2017) that provides methods for estimating land subsidence in GMA 16.

The largest long-term groundwater drawdowns (about 200 ft since the 1930s) measured in GMA 16 have occurred in Kleberg County, near Kingsville, TX. As there is no reported evidence of land subsidence in that area, it seems unlikely that land subsidence from groundwater pumping is currently a concern for the GMA. GCDs can address land subsidence through their management plans and groundwater rules, if so desired. Based on the considerations during this joint-planning session, no district proposed a DFC for land subsidence.

4.6 Socioeconomic Impacts

TWC 36.108 (d)(6) requires that, during the joint-planning process, GCDs shall consider "socioeconomic impacts reasonably expected to occur." The TWDB prepared reports on the socioeconomic impacts of not meeting the water needs identified for each of the Regional Water Planning Groups. The socioeconomic impact reports were prepared to support the development of the draft 2021 Regional Water Plans. In developing the proposed DFCs, GMA 16 and each of its member districts considered the following information regarding socioeconomic impacts within the GMA:

- An overview of the TWDB socioeconomic impact report for Region M and N for not meeting the identified water needs in the counties in GMA 16 with respect to sales income, tax revenue, jobs, population, and school enrollment
- The socio-economic impact was grouped according to the following grouping: irrigation, livestock, manufacturing, mining, municipal, and stream electric power
- Whether or not the proposed DFCs could impede the implementation of any proposed water management strategies that depend on groundwater

On October 27, 2020, INTERA presented this information in a presentation titled "Groundwater Management Area 16 Joint Planning Cycle 2019-2022: Socioeconomic Impact Consideration" at the public GMA 16 Board meeting. This presentation is included as **Appendix M**. The GMA considered the socioeconomic impact reports in developing their DFCs. GMA 16 evaluated the development of a DFC in the context of potentially not meeting the identified needs in Regions N and M because certain recommended water management strategies may not be possible.

Based on the groundwater production that occur in Pumping Scenario #2, GMA 16 determined that the anticipated DFCs based on Pumping Scenario #2 would not restrict implementation any of the proposed water management strategies in Region M or N. In addition, the GMA 16 found that any unmet water needs are principally due to TWDB MAG calculation methodology (which do not account for pumping outside of the TWDB official aquifer boundaries) and not because GMA 16 DFCs are overly restrictive.

4.7 Impact on Private Property Rights

The requirement that districts shall consider the socioeconomic impacts before voting on the DFCs of the aquifers was added to the statues of joint planning with the passage of Senate Bill 660 in 2011. As part of their continued efforts to meet the "balance test" described in Subsection 36.108 (d-2) of the TWC, GMA 16 has considered socioeconomic impacts for this third round of joint planning.

The potential socioeconomic impacts reasonably expected to occur due to DFCs were discussed in a GMA 16 meeting on July 18, 2020. GMA 16 discuss the INTERA presentation titled "Groundwater Management Area 16 Joint Planning Cycle: 2019-2022 Consideration of Private Property Rights." This presentation is included as **Appendix N**. GMA 16 held numerous meetings during the joint planning that provided opportunities for unrestricted public comment regarding socioeconomic impacts or the potential for them to occur. In this manner, district representatives were able to obtain stakeholder input from across GMA 16's geographical boundaries from a variety of interest areas such as recreation, real estate, commerce, irrigation and agriculture, political subdivisions, environmental groups, private property, tourism, cities, groundwater developers, river authorities and others. From a qualitative perspective, GMA 16 realizes that both positive and negative socioeconomic impacts may potentially

result from the implementation of the proposed DFCs. In their deliberations while creating DFCs, district representatives aimed to achieve a balance of the positive and negative impacts.

GMA 16 considered the following socioeconomic considerations that would potentially have a positive impact upon the adoption of the proposed DFCs:

- Proposed DFCs in some areas of the GMA may reduce or eliminate the costs of lowering pumps and either deepening existing wells or constructing new wells.
- Proposed DFCs may serve to sustain or enhance economic growth due to assurances provided by diversified water portfolios.
- Proposed DFCs may result in a short-term reduction in utility rates due to reduction in cost of water management strategy implementation.

Comparatively, the following socioeconomic considerations were identified as potentially having a negative impact upon the adoption of the proposed DFCs:

- Proposed DFCs may require conversion of part or all of a supply to an alternative supply or supplies, which may have increased costs associated with infrastructure, operation and maintenance.
- Proposed DFCs in some areas of the GMA may result in significant but unquantified production cost increases due to continuing to lower water levels in wells.
- Proposed DFCs may result in a reduced groundwater supply being available on a long-term basis.
- Proposed DFCs may require the lowering of well pumps and/or the deepening of existing wells or constructing new wells.

4.8 Feasibility of Achieving the DFC

TWC 36.108 (d)(8) requires that GCDs, during the joint groundwater planning process, consider the feasibility of achieving the proposed DFC(s). This requirement was added to the joint groundwater planning process with the passage of Senate Bill 660 by the 82nd Texas Legislature in 2011. This review concept can be traced back to 2007, when the TWDB adopted rules that provided guidance for petitions contesting the reasonableness of an adopted DFC. Under these 2007 rules, the TWDB required that an adopted DFC must be physically possible from a hydrological perspective.

GMA 16 has deemed that the adopted DFCs are feasible based on two considerations. One consideration that the DFCs are physically possible from a hydrogeological perspective. The GMA 16 GFM has shown that the DFCs are physically compatible by generating the DFCs by running the GMA 16 GFM with the Pumping Scenario #2. The other consideration is that the DFCs are administratively feasible. In reviewing their respective DFCs, each GCD did not identify any administrative rule or policy that would prevent the GCD from achieving their DFCs.

4.9 Other Information

TWC 36.108 (d)(9) requires that, during the joint-planning process, GCDs shall consider "any other information relevant to the specific desired future conditions." The additional information considered by the GMA was initially discussed during the second round of joint planning but continued during the third round of joint planning. The additional information related to:

1. Region M water management strategy for groundwater desalination;
2. Investment backed expectations for private groundwater development in San Patricio County GCD;
3. Groundwater development for the City of Alice, Texas municipal water supply.

5.0 DISCUSSION OF OTHER DFCS CONSIDERED

TWC 36.108(d-3)(4) requires that, during the joint groundwater planning process, GCDs shall "list other desired future condition options considered, if any, and the reasons why those options were not adopted."

There were no other DFCs that were voted on during the current round of joint groundwater planning after the adopted DFCs were proposed during the March 26, 2021 meeting. There were, however, discussions on the methodology for calculating DFCs and modeled pumping within the GMA during the joint planning process. These methodologies were discussed at the January 28, 2020 GMA 16 meeting. In one variation, DFCs and MAG were calculated to include the area outside the official TWDB boundary of the Gulf Coast Aquifer. This was in response to concerns raised by the Region M Regional Water Planning Group that the current methodology ignores pumping in the Gulf Coast Aquifer outside the official TWDB boundary. Since this methodology change had little to no effect on DFCs, the GMA did not choose to adopt this alternative methodology.

6.0 POLICY JUSTIFICATION

The adoption of DFCs by GCDs, pursuant to the requirements and procedures set forth in TWC Chapter 36, is an important policy-making function. DFCs are planning goals that state a desired condition of the groundwater resources in the future in order to promote better long-term management of those resources. GCDs are authorized to utilize different approaches in developing and adopting DFCs based on local conditions and the consideration of other statutory criteria as set forth in TWC 36.108.

GMA 16 and each of its member districts evaluated DFCs with considerations to the nine factors required by TWC 36.108(d). In addition to these nine factors, GMA 16 and the individual districts evaluated DFCs with regard to providing a balance between the highest practicable level of groundwater production and the conservation, preservation, protection and recharging, and prevention of waste of groundwater in GMA 16. While much of this process was guided by scientific analysis including GAM simulations of future pumping scnearios, the actual creation of DFCs requires a blending of both science and policy. The incorporation of policy provides the ability to account for the limitations and uncertainty inherent in GAMs, and provide guidance for and define the bounds of what these scientific tools can reasonably be expected to accomplish.

In evaluating the DFCs, GMA 16 and the individual districts recognize that: (1) the production capability of the aquifers varies significantly across GMA 16, (2) historical groundwater production is significantly different across GMA 16, and (3) the importance of groundwater production to the social-economic livelihood of an area is significantly varied among the districts. As a result of this recognition, a key GMA 16 policy decision was to allow districts to set different DFCs for the portion of an aquifer within their boundaries, as long as the different DFCs could be shown to be compatible and physically possible. The allowance of different DFCs among the districts is justified for several reasons. First, TWC 36.108(d)(1) authorizes the adoption of different DFCs for different geographic areas over the same aquifer based on the boundaries of political subdivisions. The statute expressly and specifically directs GCDs "to consider uses or conditions of an *aquifer* within the management area, including conditions that differ substantially from one geographic area to another "when developing and adopting DFCs for:

1. Each aquifer, subdivision of an aquifer, or geologic strata located in whole or in part within the boundaries of the management area; or
2. Each geographic area overlying an aquifer in whole or in part or subdivision of an aquifer within the boundaries of the management area."

The Legislature's addition of the phrase "in whole or in part" makes it clear that GCDs may establish a "different" DFC for a geographic area that does not cover the entire aquifer but only part of that aquifer. Moreover, the plain meaning of the term "geographic area" in this context would include an area defined by political boundaries, such as those of a GCD or a county.

Secondly, GMA 16 is composed of several different GCDs, each of which manages a separate portion of the aquifer. By statute, GCDs cannot regulate outside of their district boundary, and the rules that they adopt to manage groundwater only apply within their boundaries. Therefore, GMA 16 recognized that separate DFCs had to be defined for each GCD within the GMA.

The only written public comment on the proposed DFCs, which were adopted, concerned Bee County GCD. The comments were discussed in the public GMA 16 meeting on September 21, 2021 and discussed in Section 1. These public comments were considered by Bee County GCD in their evaluation

of the final DFCs. The DFCs that GMA 16 considered and proposed for final adoption provided acceptable drawdown levels in the various aquifers on a county-by county basis and across the entire GMA 16 area.

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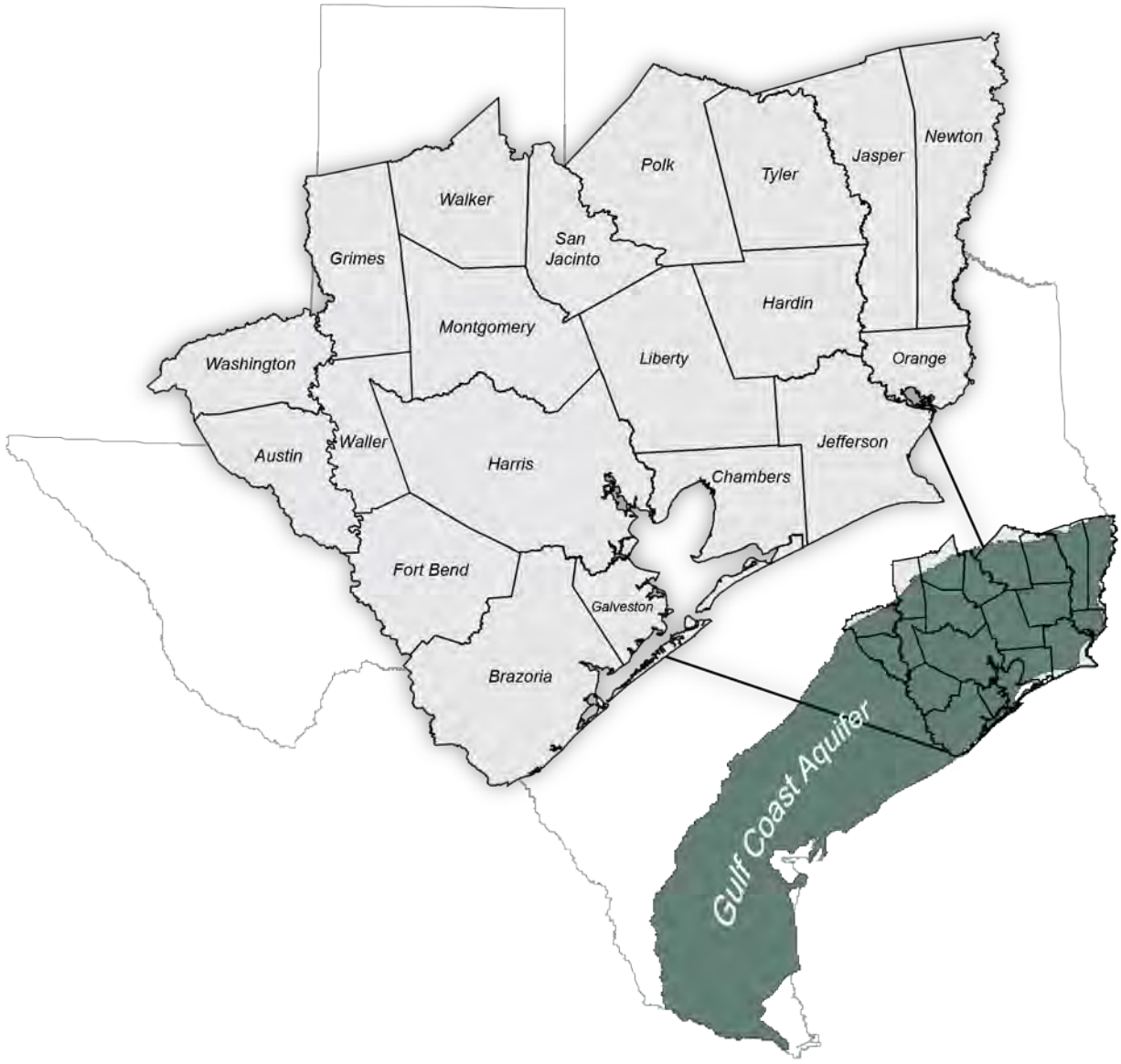

DESIRED FUTURE CONDITIONS EXPLANATORY REPORT

Prepared by the Groundwater Conservation Districts in Groundwater Management Area 14

Submitted to the Texas Water Development Board Mach 4, 2022

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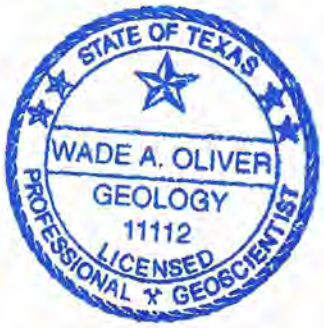
PROFESSIONAL GEOSCIENTIST SEAL

The hydrogeologic components (Sections 4.1, 4.3, 4.4, 4.5, 4.9 and Appendix R) of this explanatory report were prepared or overseen by the following Licensed Professional Geoscientist:



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EXECUTIVE SUMMARY

Groundwater Conservation District Representatives ("District Representatives") in Groundwater Management Area 14 ("GMA 14") developed this Explanatory Report as part of the requirements included in Texas Water Code Section 36.108 for developing desired future conditions ("DFCs"). A DFC is defined as "the desired, quantified condition of groundwater resources (such as water levels, spring flows, or volume) within a management area at one or more specified future times as defined by participating groundwater conservation districts within a groundwater management area as part of the joint planning process." (31 Texas Administrative Code Section 356.10(9)).

This GMA 14 Explanatory Report contains two main elements required in Tex. Water Code Section 36.108 for the joint planning process: the statement of desired future conditions adopted by the District Representatives for the Gulf Coast Aquifer in GMA 14 during a regularly scheduled meeting on January 5, 2022, and documentation of all data, analyses, and supporting materials including policy and technical issues considered by the District Representatives during the current round of joint planning.

The Texas Water Development Board ("TWDB") has made available an "Explanatory Report Checklist," which is used to determine administrative completeness with respect to the requirements of statute and administrative rules. To facilitate this review by TWDB, a populated Explanatory Report Checklist is included in Appendix A. Each of the required considerations included in Texas Water Code Section 36.108(d)(1-9) are listed below and discussed in detail in this Explanatory Report:

1. Aquifer Uses and Conditions
2. Water Supply Needs and Water Management Strategies
3. Hydrologic Conditions
4. Environmental Impacts
5. Subsidence
6. Socioeconomic Impacts
7. Private Property Rights
8. Feasibility of Achieving the DFCs
9. Other Relevant Information

Texas Water Development Board ("TWDB") designated the counties in Texas containing the northern portion of the Gulf Coast Aquifer System as GMA 14 (Figure 1-1). The Gulf Coast Aquifer System is made up of the Chicot Aquifer, Evangeline Aquifer, Burkeville Confining Unit, and Jasper Aquifer. The counties in GMA 14 are listed below along with the type of entity responsible for groundwater management in each county, if applicable:

Groundwater Management Entity Type	Groundwater Management Entity Name	County
Groundwater Conservation District "GMA 14 District Representatives"	Bluebonnet GCD	Austin
		Grimes
		Walker
		Waller
	Brazoria County GCD	Brazoria
	Lone Star GCD	Montgomery
	Lower Trinity GCD	Polk
		San Jacinto
	Southeast Texas GCD	Hardin
		Jasper
		Newton
		Tyler
Subsidence District	Fort Bend Subsidence District	Fort Bend
	Harris-Galveston Subsidence District	Galveston
		Harris
Counties without a Groundwater Management Entity (such as a GCD or Subsidence District)		Chambers
		Jefferson
		Liberty
		Orange
		Washington

GMA 14 District Representatives last adopted DFCs in 2016 and, as specified in Texas Water Code Section 36.108, are required to review and propose for adoption DFCs every 5 years. The DFCs adopted in 2016 for Lone Star GCD were the subject of multiple petitions declaring ultimately that Lone Star GCD's DFCs "no longer reasonable." After Lone Star GCD's 2016 DFCs were found to be no longer reasonable, the District Representatives convened and Lone Star GCD requested that its DFCs be revised immediately. The majority of District Representatives declined to revise Lone Star GCD's DFCs as an amendment to the second round of joint planning. Instead, District Representatives voted to revise Lone Star GCD's DFCs during the third round of joint planning when all DFCs were being developed. The District Representatives made a concerted effort during the current round of joint planning to develop, propose and adopt DFCs that address the issues identified in the petitions from 2016.

During the process of developing DFCs, District Representatives extensively reviewed and evaluated DFC options, public feedback, and the factors above to ensure that the adopted DFCs "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" (Texas Water Code Section 36.108(d-2)). As part of the process, the District Representatives quantified the potential endpoints of this balance, determining the amount of pumping in each county consistent with no additional drawdown (representing conservation) and depletion of half of the available predevelopment drawdown (one way to approximate highest practicable pumping).

At the April 9, 2021 GMA 14 joint planning meeting, the District Representatives proposed for adoption the following DFCs for the Gulf Coast Aquifer within the bounds of Austin, Brazoria, Chambers, Grimes, Hardin, Jasper, Jefferson, Liberty, Montgomery, Newton, Orange, Polk, San Jacinto, Tyler, Walker, Waller, and Washington counties:

> *In each county in GMA 14, no less than 70 percent median available drawdown remaining in 2080 and no more than an average of 1.0 additional foot of subsidence between 2009 and 2080.*

This single DFC statement applicable to each county was developed in part to ensure a more uniform management standard across the aquifer while still accounting for the significant hydrogeologic variability in GMA 14. The statement uses multiple metrics – median available drawdown and average additional subsidence – to capture that the limiting factor for groundwater availability in some areas of GMA 14 is different than in others. As discussed below, the "and" in the DFC statement was changed to an "or."

The proposed DFCs were mailed to the individual GCDs on April 20, 2021. All Districts subsequently posted the public notices for individual GCD public hearings on the proposed DFCs as required by Texas Government Code Chapter 551 and by Texas Water Code Section 36.108(e). Copies of the public notices given for all required public hearings are contained in Appendix B.

After receiving comments during the public comment period, the District Representatives met on October 5, 2021 to consider public comments and potential revisions to the proposed DFCs. The public comments as compiled and summarized by the District Representatives are shown in Appendix C. At the October 5, 2021 GMA 14 meeting, the District Representatives approved in form the "*RESOLUTION FOR THE APPROVAL OF DESIRED FUTURE CONDITIONS FOR AQUIFERS IN GROUNDWATER MANAGEMENT AREA 14*," which included the following DFCs for the Gulf Coast Aquifer within the bounds of GMA 14:

In each county in GMA 14, no less than 70 percent median available drawdown remaining in 2080 or no more than an average of 1.0 additional foot of subsidence between 2009 and 2080.

This Explanatory Report documents that the District Representatives in GMA 14 have considered all of the elements required by Texas Water Code Section 36.108(d-3) in establishing the 2021 DFCs by: 1) identifying each desired future condition; 2) providing the policy and technical justifications for each desired future condition; 3) documenting that the factors under Texas Water Code Section 36.108(d) were considered by the Districts along with how the adopted desired future conditions impact each factor; 4) listing other desired future condition options considered, if any, and the reasons why those options were not adopted; and 5) discussing reasons why recommendations made by any advisory committee and relevant public comments received by the districts were or were not incorporated into the Desired Future Conditions. This Explanatory Report documents each of these elements, the process for developing the DFCs, and confirms that the adopted DFCs are reasonable.

1. INTRODUCTION

1.1 JOINT GROUNDWATER PLANNING IN GMA 14

In Texas, the legislature has declared groundwater conservation districts ("GCDs") as the preferred method of groundwater management (Texas Water Code Section 36.0015). Local GCDs manage, preserve, and protect the groundwater resources within their jurisdiction pursuant to their statutory powers and duties as set forth in Chapter 36 of the Texas Water Code and their respective enabling legislation. In 2005, the Texas Legislature passed legislation that created a joint planning process by which GCDs located within a groundwater management area must conduct joint planning to develop Desired Future Conditions ("DFCs"). These DFCs describe how the GCDs in the management area want the groundwater resources of the region to look in the future. They must also 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 (Texas Water Code Section 36.108(d-2)). GCDs develop their management plans with goals and objectives consistent with achieving the adopted desired future conditions of the relevant aquifers as adopted during the joint planning process (Texas Water Code Section 36.1085).

A groundwater management area ("GMA") is a geographic area designated and delineated by the Texas Water Development Board ("TWDB") under Chapter 35 of the Texas Water Code as an area suitable for management of groundwater resources. TWDB designated sixteen (16) GMAs, which together cover the entire State of Texas. TWDB designated the area encompassing all of Austin, Brazoria, Chambers, Fort Bend, Galveston, Grimes, Hardin, Harris, Jasper, Jefferson, Liberty, Montgomery, Newton, Orange, Polk, San Jacinto, Tyler, Walker, Waller and Washington counties as Groundwater Management Area 14 ("GMA 14"), shown in Figure 1-1. GMA 14 is located along the Upper Texas Gulf Coast, and groundwater management efforts for GMA 14 are primarily focused on the Gulf Coast Aquifer System.

The Bluebonnet Groundwater Conservation District (Austin, Grimes, Walker and Waller counties), Brazoria County Groundwater Conservation District (Brazoria County), Lone Star Groundwater Conservation District (Montgomery County), Lower Trinity Groundwater Conservation District (Polk and San Jacinto counties), and Southeast Texas Groundwater Conservation District (Hardin, Jasper, Newton and Tyler counties) are GCDs located wholly within the boundaries of GMA 14 (Figure 1-1). As required by Chapter 36 of the Texas Water Code and further described herein, these GCDs have engaged in joint planning and, in that regard, have adopted DFCs for the relevant groundwater resources underlying GMA 14.

The Fort Bend Subsidence District (Fort Bend County) and Harris-Galveston Subsidence District (Harris and Galveston counties) are also located within GMA 14 and have authority to regulate groundwater withdrawals. However, these districts were created by the Texas Legislature specifically to end or prevent subsidence and are not bound by DFCs adopted in joint planning as are the five GCDs in GMA 14 as dictated by Chapter 36. However, in the interest of sharing the responsibility of planning for shared groundwater resources, the GCDs, the subsidence districts, and Chamber and Washington counties entered into an Interlocal Agreement for Governmental Functions and Services Related to Joint Planning in GMA 14 ("Interlocal Agreement") that allows them to share costs and expenses associated with joint planning activities and the preparation of desired future conditions. The term "Participants" as used herein collectively refers to the parties of the Interlocal Agreement.

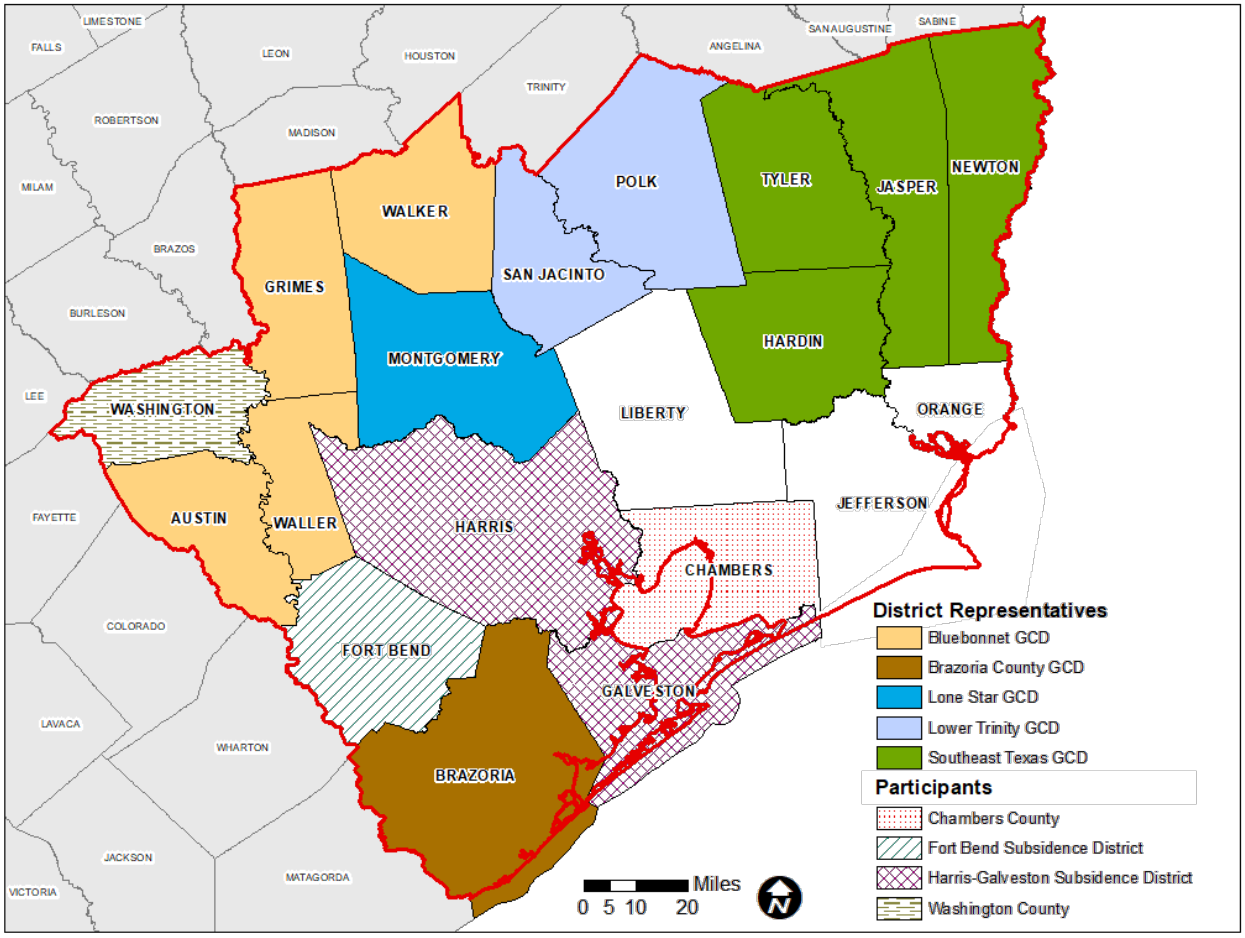

FIGURE 1-1. DISTRICT REPRESENTATIVES AND PARTICIPANTS IN IN GROUNDWATER MANAGEMENT AREA 14. NOTE THAT ONLY THE FIVE DISTRICT REPRESENTATIVES OF THE GROUNDWATER CONSERVATION DISTRICTS ARE VOTING MEMBERS IN JOINT PLANNING.

1.2 Fundamentals of the Joint Planning Process

The joint planning process for coordination of groundwater management activities by GCDs was first amended by the Texas Legislature to include the requirement to establish DFCs with the passage of House Bill ("HB") 1763 in 2005. HB 1763 amended Chapter 36 of the Texas Water Code to require representatives of GCDs located within a GMA to meet and adopt DFCs for the aquifers underlying the GMA no later than September 1, 2010, and every five years thereafter. After the first round of DFCs were adopted by the initial 2010 deadline, the joint planning process was significantly expanded prior to the second round of DFCs with the passage of Senate Bill ("SB") 660 in 2011. In order to better align the joint planning process with Texas' regional water planning process, the Texas Legislature passed HB 2215 in 2017, which set the deadline for proposing DFCs for adoption during the current (third) round of joint planning as May 1, 2021, and the deadline for finally adopting DFCs as January 5, 2022.

Texas Water Code Section 36.108 provides the current requirements applicable to this third round of joint planning and DFC development. As set forth in the statute, representatives from each GCD within each GMA are required to meet at least annually to conduct joint planning; consider each other's groundwater management plans and, accomplishments in the GMA; and, proposals to adopt new or amend existing DFCs. At least every five years, the GCD representatives must meet to consider groundwater availability models and other data and information for the GMA and propose for adoption DFCs for the relevant aquifers within the GMA (Texas Water Code Section 36.108).

The primary tools for analyzing groundwater conditions and for groundwater management are numerical groundwater availability models. These models are used to assess the effects of past, current, and future pumping and droughts on groundwater availability. In correspondence dated February 18, 2014, TWDB formally approved the updated Houston Area Groundwater Model ("HAGM") as the official Groundwater Availability Model ("GAM") for the northern segment of the Gulf Coast Aquifer System. The 2016 DFCs and the DFCs documented in this report were both developed using the HAGM.

In developing proposed DFCs, the GCDs must consider nine statutory factors: (1) aquifer uses and conditions within the management area, including conditions that differ substantially from one geographic area to another; (2) the water supply needs and water management strategies included in the state water plan; (3) hydrogeological conditions; (4) other environmental impacts; (5) the impact on subsidence; (6) socioeconomic impacts reasonably expected to occur; (7) the impact on the interests and rights in private property; (8) the feasibility of achieving the DFC; and (9) any other relevant information (Texas Water Code Section 36.108(d)(1-9)). After consideration of these factors, the representatives of the GCDs in the GMA ("District Representatives") must approve proposed DFCs by a two-thirds vote.

Once approved by the District Representatives during joint planning, the proposed DFCs are sent to the individual GCDs within the GMA and a public comment period of at least 90 days begins. During the public comment period, each GCD is required to hold a public hearing on the proposed DFCs. After the public hearing and comment period, each GCD is required to compile for consideration at the next joint planning meeting a summary of the relevant comments received, suggested revisions to the proposed DFCs, and the basis for the suggested revisions. The District Representatives are required to reconvene to review the summary reports prepared by each GCD, consider proposed changes to the DFCs, and finally adopt DFCs by a resolution adopted by two-thirds vote of all the District Representatives in the GMA. Upon final adoption, the District Representatives are required to, among other things, prepare and submit an Explanatory Report to TWDB and each GCD in the GMA (Texas Water Code Section 36.108(d-3)).

The joint planning process, described in Chapter 36 of the Texas Water Code and followed by the District Representatives in GMA 14, is a public and transparent process where all planning decisions are made in open, publicly noticed meetings. GMA 14 began this third round of joint planning in 2019. Over the course of several years, the District Representatives in GMA 14 held many joint planning meetings, and in a coordinated effort to manage the groundwater resources, adopted DFCs for GMA 14. A timeline of the GMA 14 joint planning process and significant events, including but not limited to consideration of model run results, consideration of information applicable to each of the statutory factors, proposal of DFCs for adoption, the public comment period, and final adoption of DFCs is provided in Section 3.

This Explanatory Report provides an official record demonstrating compliance with all statutory requirements applicable to the joint planning process and the adoption of DFCs. As part of this Explanatory Report, documentation of all meetings conducted by the Participants in GMA 14, including duly posted GMA 14 meeting agendas, and approved GMA 14 meeting minutes is included in Appendix D. This documentation establishes that through appointed District Representatives, the GCDs in GMA 14 participated in joint planning over the course of several years to develop DFCs as required by statute. As described in the agendas and meeting minutes, the District Representatives considered statutory criteria required prior to proposing DFCs for adoption and properly adopted DFCs in accordance with procedural requirements.

Also, included in this Explanatory Report are the five individual GCD Summary Reports prepared and presented at the October 5, 2021 GMA 14 joint planning meeting, which includes copies of all comments received by each GCD (Appendix C). These Summary Reports contain documentation of all public comments received by the individual GCDs during the public comment period on the proposed DFCs, along with any recommendations for changes

to the proposed DFCs offered by the individual GCDs that were considered by the Participants. On January 5, 2022, the District Representatives adopted DFCs for the groundwater resources in GMA 14 as further described in this Explanatory Report.

1.3 AQUIFERS WITHIN GMA 14

As defined by TWDB, the major aquifers in GMA 14 are shown in Figure 1-2. The Gulf Coast Aquifer System, which includes the Chicot Aquifer, Evangeline Aquifer, Burkeville Confining Unit, Jasper Aquifer and portions of the Catahoula Formation (where applicable) is the primary groundwater resource in each county in GMA 14. TWDB Report 380 (George, Mace, & Petrossian, 2011) provides a good summary of the main characteristics of the Gulf Coast Aquifer:

"The Gulf Coast Aquifer is a major aquifer paralleling the Gulf of Mexico coastline from the Louisiana border to the border of Mexico. It consists of several aquifers, including the Jasper, Evangeline, and Chicot aquifers, which are composed of discontinuous sand, silt, clay, and gravel beds. The maximum total sand thickness of the Gulf Coast Aquifer ranges from 700 feet in the south to 1,300 feet in the north. Freshwater saturated thickness averages about 1,000 feet. Water quality varies with depth and locality: it is generally good in the central and northeastern parts of the aquifer, where the water contains less than 500 milligrams per liter of total dissolved solids, but declines to the south, where it typically contains 1,000 to more than 10,000 milligrams per liter of total dissolved solids and where the productivity of the aquifer decreases. High levels of radionuclides, thought mainly to be naturally occurring, are found in some wells in Harris County in the outcrop and in South Texas. The aquifer is used for municipal, industrial, and irrigation purposes. In Harris, Galveston, Fort Bend, Jasper, and Wharton counties, water level declines of as much as 350 feet have led to land subsidence."

A small portion of the Carrizo-Wilcox Aquifer, which is a major source of groundwater in areas to the north and west of GMA 14, is present within GMA 14 in the northern areas of Grimes, Walker, and Washington counties.

The minor aquifers in GMA 14 as defined by TWDB are shown in Figure 1-3. These include the Brazos River Alluvium Aquifer, Queen City Aquifer, Sparta Aquifer, and Yegua-Jackson Aquifer. As shown in Figure 1-3, the Brazos River Alluvium Aquifer is adjacent to the Brazos River and runs through the western portion of GMA 14 into Fort Bend County. The remaining minor aquifers are present in the northern portions of GMA 14, primarily in those areas outside the extent of the Gulf Coast Aquifer system.

TWDB rules allow for portions of major and minor aquifers to be classified as non-relevant for joint planning purposes if their aquifer characteristics, groundwater demands, and current groundwater uses do not warrant adoption of a desired future condition. After review, District Representatives in GMA 14 have classified all portions of the following aquifers located within GMA 14 as non-relevant aquifers for joint planning: (1) Carrizo-Wilcox Aquifer,

(2) Queen City Aquifer, (3) Sparta Aquifer, (4) Yegua-Jackson Aquifer, and (5) Brazos River Alluvium Aquifer. A summary of each non-relevant aquifer, which includes a description of aquifer characteristics, groundwater demands, groundwater uses, and total estimated recoverable storage, is provided in Appendix E.

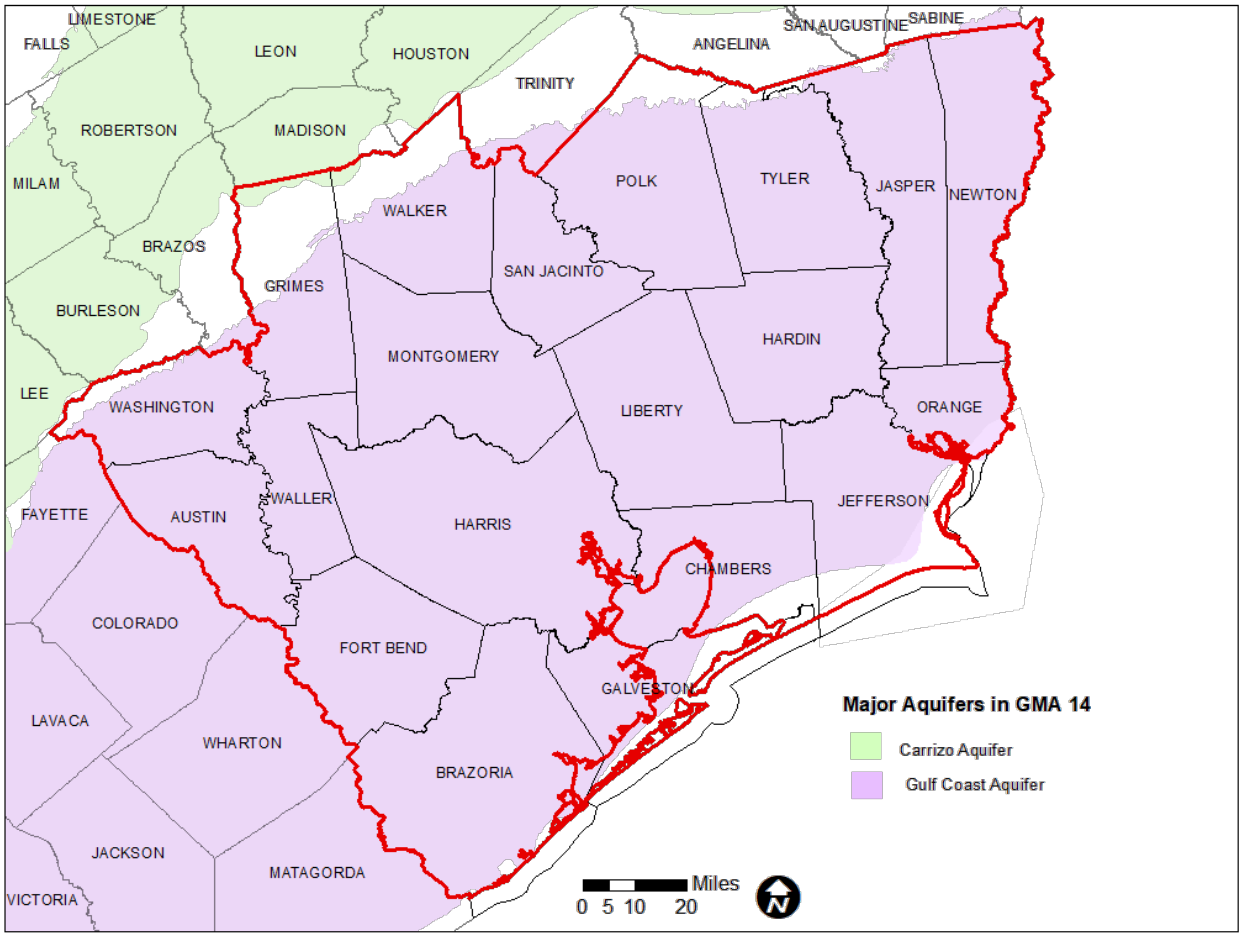

FIGURE 1-2. MAJOR AQUIFERS IN GMA 14

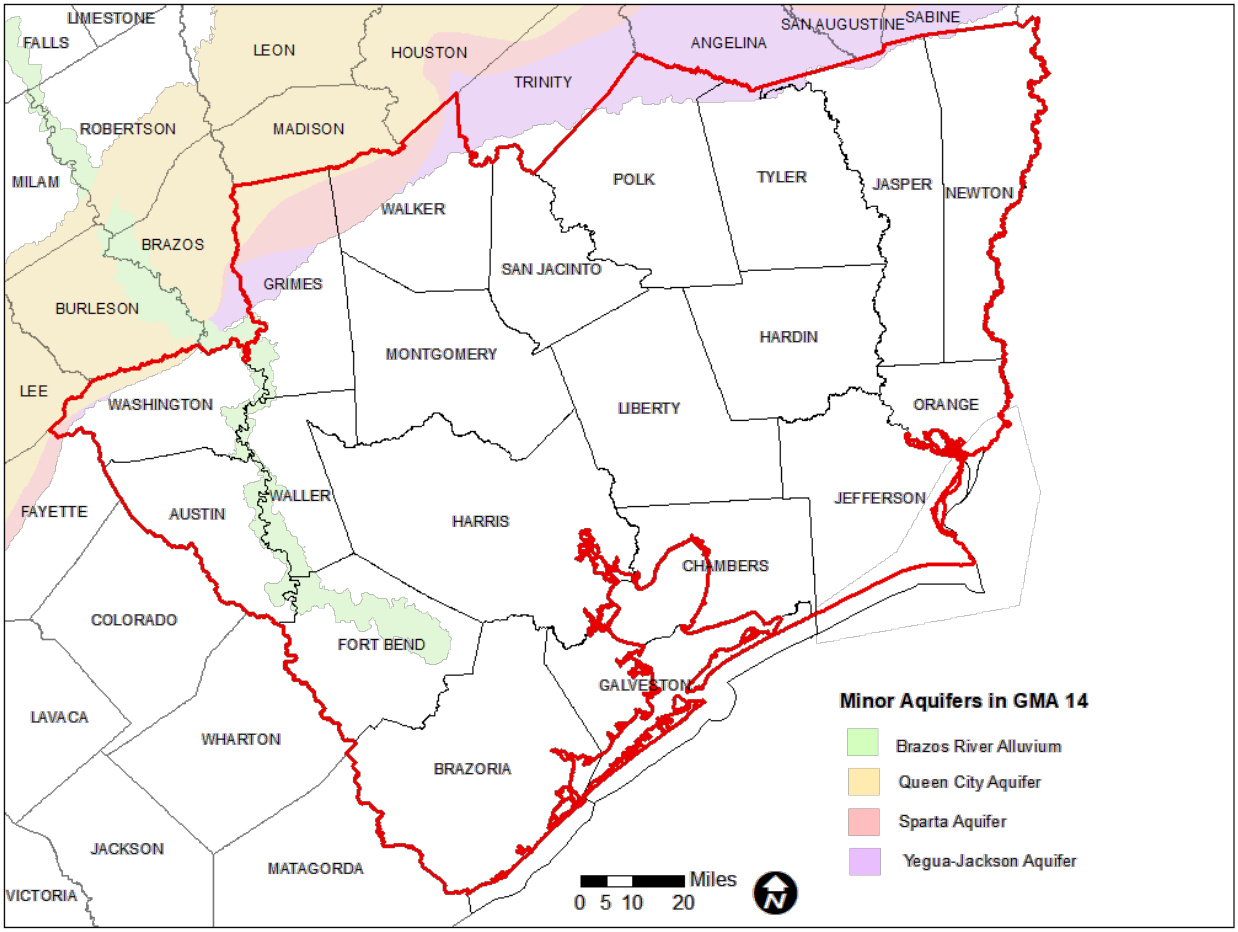

FIGURE 1-3. MINOR AQUIFERS IN GMA 14

2. GMA 14 Desired Future Conditions

2.1 DFC Metrics and Balancing Test

During the current round of joint planning, the GMA 14 District Representatives followed an intentional process for developing DFCs that are reasonable and address issues identified with DFCs previously adopted in GMA 14.

Criticism of Previous DFC Metrics

Chapter 36 of the Texas Water Code defines a Desired Future Condition as "a quantitative description, adopted in accordance with Section 36.108, of the desired condition of the groundwater resources in a management area at one or more specified future times." Though DFCs must be quantitative, there is no additional guidance given as to what characteristic of the aquifer should be quantified. This characteristic is known as the DFC "metric". In the 2016 round of joint planning in GMA 14, the DFCs were articulated using metrics of average drawdown in each unit of the Gulf Coast Aquifer in each county, average drawdown in each unit of the Gulf Coast Aquifer across GMA 14, and maximum subsidence in select counties. The 2016 DFCs were developed using the Houston Area Groundwater Model ("HAGM") (Kasmarek, 2012). The result of this selection of metrics is that there were 66 separate DFCs for GMA 14 during the 2016 round of joint planning. Using Austin County as an example, in addition to the four GMA 14-wide DFCs, five DFCs were applicable in the county including:

- From estimated year 2009 conditions, the average drawdown of the Chicot Aquifer should not exceed approximately 39 feet after 61 years.
- From estimated year 2009 conditions, the average drawdown of the Evangeline Aquifer should not exceed approximately 23 feet after 61 years.
- From estimated year 2009 conditions, the average drawdown of the Burkeville confining unit should not exceed approximately 23 feet after 61 years.
- From estimated year 2009 conditions, the average drawdown of the Jasper Aquifer should not exceed approximately 76 feet after 61 years.
- From estimated year 1890 conditions, the maximum subsidence in Austin County should not exceed approximately 2.83 feet by the year 2070.

These DFCs were subject to numerous comments and the DFCs adopted for Lone Star GCD in 2016 were the subject of multiple petitions challenging their reasonableness. Issues raised in the comments and petitions included criticisms that they 1) were reverse engineered, 2) did not adequately balance the development of the aquifer with conservation, and 3) had management standards that seemed to change arbitrarily at county boundaries instead of treating the aquifer as a "common reservoir."

Addressing Reverse Engineering with Median Percent Available Drawdown Remaining

The GMA 14 District Representatives sought to address these criticisms during the current round of joint planning through changes to the DFC development process and by selecting more appropriate metrics. One metric considered and ultimately used was median percent "available drawdown" remaining in wells. Though the term available drawdown has varied definitions within hydrogeology, the meaning used in developing the DFCs in this round of planning is shown in Figure 2-1 where available drawdown represents the height of the water column in a well between the water level in the well (as defined by the associated aquifer in the HAGM) and the bottom of the well (as defined by the well depth from land surface). Unlike other definitions of available drawdown, this definition does not consider the depth to the aquifer top or the setting of the pump. The median available drawdown was evaluated rather than the mean because the median -- the middle well in a list of all wells within a county sorted by percent medial drawdown remaining -- is not influenced by outliers.

Median percent available drawdown remaining in wells is a useful metric for characterizing different areas of the Gulf Coast Aquifer in GMA 14 because it is relevant regardless of whether the aquifer is thin or thick, shallow or deep. The percent of available drawdown metric allows for reasonable comparison between wells that may have less than 50 feet of available drawdown and deeper areas that may have more than 1000 feet of available drawdown.

Another reason the above definition of available drawdown was used is that well location and depth are two of the most widely available characteristics for wells in GMA 14 and in Texas more broadly. Data from each of the water wells available from the TWDB Groundwater and Submitted Drillers Reports with available depth information was assigned to an aquifer layer (Chicot, Evangeline, Burkeville, or Jasper). Since well screen information is not as widely available as well depth, the aquifer assignments were made using the aquifer present at the deeper of 80 percent of the total well depth or 50 feet shallower than the total well depth. Figure 2-2 shows the distribution of wells by aquifer used for the analysis. It is important to note that changes in the model base elevation of aquifers may change the aquifer designation of wells and may have an impact on these simulated results.

With aquifer assignment, depth, and modeled water level information available for each of the wells in Figure 2-2, the District Representatives first considered the median change in available drawdown between pre-development and 2009 (the historical period of the model). This is shown in Table 2-1. As shown in Table 2-1, counties that have historically not used much groundwater have a high percentage of median available drawdown remaining.

Counties that have historically produced higher quantities of groundwater (i.e., Fort Bend and Harris Counties) have the lower percentage of median available drawdown remaining. Table 2-1 also shows the modeled pumping for 2009 from the HAGM and the modeled maximum subsidence in each county between pre-development and 2009.

The use of median available drawdown remaining allowed for the development of model runs using the HAGM that targeted a specific percent of available drawdown remaining in each county as opposed to running the model based primarily on a prescribed volume of pumping. By setting a target metric beforehand and iteratively running the model to determine the pumping consistent with that condition, the District Representatives sought to address the critique that the DFCs during the 2016 round of joint planning were "reverse engineered."

Addressing the Balancing Test Quantitatively

In addition to developing DFCs that were not "reverse engineered," the District Representatives in GMA 14 sought to ensure that the DFCs appropriately balanced both conservation and development of groundwater. Texas Water Code Section 36.108(d-2) states, in part, that adopted DFCs "must 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." This requirement for development of DFCs is referred to here as the "balancing test."

The two ends of the balancing test described in Texas Water Code Section 36.108(d-2) represent the competing priorities and interests that must be considered when developing DFCs. It highlights that there are benefits and harms associated both with developing groundwater and with not developing groundwater. Texas Water Code Section 36.108(d-2) does not define the two ends of the balancing test in a manner that is readily quantified. The District Representatives, however, sought to develop a quantitative description of the Gulf Coast Aquifer System in each county that reasonably represents each end of the balancing test to ensure that the proposed and adopted DFCs developed were well within this range.

To estimate the highest practicable level of groundwater production, the District Representatives considered a median depletion of 50 percent of the pre-development available drawdown in wells in each county. This analysis does not consider many factors including environmental impacts, subsidence, the costs to produce water, and water demands. Pumping was adjusted in the model to the extent possible to match the target median available drawdown depletion in each county simultaneously beginning in 2010 and running through 2070. Note that pumping in the Harris-Galveston Subsidence District and Fort Bend Subsidence District was not changed during this process and held constant at the level of their current (2013) regulatory plans.

Lone Star GCD's concern with this approach is that it did not allow for any variation in pumping in Harris, Galveston, or Fort Bend counties because the pumping estimates in those counties were fixed in every scenario (and iterative simulation) based on the adopted 2013 regulatory plans in HGSD and FBSD. The assumption of "fixed pumping" for the three counties does have an impact on surrounding counties and GMA 14. The approach and assumptions only allow for evaluation of changes to pumping in other counties. Lone Star GCD expressed concerns regarding impacts that Harris County pumping has on Montgomery County particularly in southern Montgomery County where stakeholders have expressed concerns on water level declines and subsidence.

The results of the analysis of using a median depletion of 50 percent of the pre-development available drawdown as an example of the highest practicable level of groundwater production are shown in Table 2-2. For GMA 14, the modeled pumping in 2070 that achieves a median 50 percent depletion of pre-development available drawdown in each county is approximately 2.5 million acre-feet per year. This compares to the pumping in GMA 14 for 2009 from Table 2-1 of approximately 720,000 acre-feet per year. For context, the modeled recharge to GMA 14 is approximately 510,000 acre-feet per year.

A similar approach was used to evaluate the other end of the balancing test: the "conservation, preservation, protection, recharging, and prevention of waste of groundwater and control of subsidence in the management area." Using the percent median available drawdown remaining metric, the District Representatives reviewed and considered a median of zero drawdown between 2009 and 2070 (that is, 100 percent of available drawdown remaining) as representative of conservation to an extent that is unlikely to be feasible or realistic to implement. The results of this analysis are shown in Table 2-3. As shown in Table 2-3, the total pumping consistent with this scenario in GMA 14 is approximately 550,000 acre-feet per year. Note that much of this pumping is from Harris and Fort Bend counties, which were not adjusted in the analysis as mentioned above. This "fixed pumping" assumption in Harris, Galveston, and Fort Bend counties decreases the pumping volumes allowed in surrounding counties in order to maintain production in these three counties.

It is also important to note the limitation of the HAGM in these simulations. The limitation of the general head boundary conditions that are implemented in the HAGM are discussed in more detail in Chapter 4 and Appendix K, but for purposes of this discussion on DFCs it is important to note that the results of the two endpoint simulations described above are impacted by the general head boundary conditions in the HAGM.

Following the effort to quantify the endpoints of the balancing test described above, the final information related to the balancing test was reviewed during the August 15, 2019 meeting of the GMA 14 District Representatives and is shown in Table 2-4. This table represents six

model scenarios showing percent of median available drawdown remaining between 2009 and 2070. The 100 percent scenario is the same scenario used to represent the conservation end of the balancing test described above. The other scenarios shown follow the same methodology, but with targets of 90 percent, 80 percent, 70 percent, 60 percent, and 50 percent of the 2009 median available drawdown remaining in each county in 2070. Note that the 50 percent scenario in Table 2-4 differs from the 50 percent scenario in Table 2-2 in that it uses a base year of 2009 instead of pre-development.

Addressing the Common Reservoir through More Uniform Management Standards

Percent available drawdown is an important metric because excessive drawdown may lead to undesirable outcomes such as a need to lower pumps and/or deepen wells, potential issues with water quality, reduced groundwater production efficiency, and/or an influence on economic growth based on water availability. However, the percent of remaining available drawdown in wells is not necessarily the limiting factor on groundwater availability throughout GMA 14. In some areas, especially close to the coast, subsidence can be a key factor for determining groundwater availability (discussed in more detail in Section 4.5).

Though GMA 14 District Representatives sought to create more uniform DFCs for the common reservoir of the Gulf Coast Aquifer System, groundwater availability can be limited by different factors in different areas of the aquifer. To attempt to address this, GMA 14 District Representatives developed a multi-metric approach whereby goal-oriented (i.e., not reverse-engineered) model runs were developed using both percent available drawdown remaining and subsidence in each county simultaneously. A uniform goal was set for each metric across each county in the GMA and pumping was adjusted in each county in GMA 14 until the first limiting metric was reached. Based on modeling and aquifer conditions, each GCD will adopt the applicable limiting factor or factors for the counties within their jurisdiction.

Following review of the above modeling results, the District Representatives requested additional runs with average additional subsidence thresholds up to 1.0 foot. This request was motivated by an issue identified in Brazoria County where implementation of a subsidence threshold of 0.5 feet would not have been feasible given existing aquifer uses and water demands. The relevance and appropriateness of the 1.0-foot metric for additional subsidence for Lone Star GCD was not discussed. Lone Star GCD also requested additional model runs using Run D from the district's Strategic Planning Study as the base pumping distribution in Montgomery County instead of the base pumping distribution from the 2016 round of joint planning.

Following the presentation of updated model run results addressing the above requests, the District Representatives in GMA 14 proposed moving forward with three scenarios for a more detailed review of the remaining factors in Texas Water Code Section 36.108(d)(1-9). These three scenarios were:

- In each county in GMA 14, no less than 70 percent median available drawdown remaining and no more than 1.0 feet average additional subsidence between 2009 and 2080.
- In each county in GMA 14, no less than 80 percent median available drawdown remaining and no more than 1.0 feet average additional subsidence between 2009 and 2080.
- In each county in GMA 14, no less than 70 percent median available drawdown remaining and no more than 1.0 feet average additional subsidence between 2009 and 2080 using the "Run D" well file as a base pumping distribution in Montgomery County.

Methods, results and limitations for each of these model runs are presented in more detail in Appendix R.

As described here, the process followed by the GMA 14 District Representatives was designed to address criticisms raised during the 2016 round of DFCs by developing improved metrics that are applicable across the aquifer, evaluating the balance of conservation and development of groundwater, and attempting to develop consistent management standards across the common reservoir. This process helped inform the development of proposed and final DFCs, as described in the next section.

2.2 Adopted DFCs

After consideration of the balancing test and the three scenarios described in Section 2.1, the policy and technical justifications presented in Section 3, and the information from each of the factors in Section 4, the GMA Representatives on April 9, 2021, unanimously voted to propose the following DFCs for adoption:

> The Member Districts of Groundwater Management Area 14 ("GMA 14") propose the following Desired Future Conditions ("DFCs") for the Gulf Coast Aquifer within Austin, Brazoria, Chambers, Grimes, Hardin, Jasper, Jefferson, Liberty, Montgomery, Newton, Orange, Polk, San Jacinto, Tyler, Walker, Waller, and Washington counties:

> *In each county in GMA 14, no less than 70 percent median available drawdown remaining in 2080 and no more than an average of 1.0 additional foot of subsidence between 2009 and 2080.*
>
> The model simulation consistent with the above proposed DFCs was developed by using the Houston Area Groundwater Model (HAGM) and adjusting the pumping distribution in each county starting with the distribution used in the 2016 round of joint planning in GMA 14.

These proposed DFCs were mailed to each GCD in GMA 14 on April 20, 2021 (Appendix F). Following the public comment period and review of the relevant comments received, the District Representatives in GMA 14 adopted the following desired future conditions as excerpted from GMA 14 Resolution 2021-10-5:

> *In each county in GMA 14, no less than 70 percent median available drawdown remaining in 2080 or no more than an average of 1.0 additional foot of subsidence between 2009 and 2080.*

The resolution in its entirety is presented in Appendix G. This resolution was adopted by GMA 14 District Representatives, after providing notice as required, on January 5, 2022. As clarified at the February 23, 2022 GMA 14 meeting, for the purpose of TWDB developing estimates of modeled available groundwater, the GMA 14 District Representatives consider a model run to be consistent with the DFCs if it matches the above conditions within a tolerance of 3 percent median available drawdown remaining and 0.2 feet of average additional subsidence.

After extensive review and consideration of public comments the GMA 14 District Representatives changed the “and” in the proposed DFC to an “or” in the adopted DFC. The significance of the “or” is evident in Table 2-5, which shows the model results detailed in Appendix R for the adopted multi-metric DFC. The results demonstrate there is a single metric of primary importance in most counties. As discussed in Section 2.1, modeled annual pumping in each county was increased to the point at which any additional pumping would either exceed: 1) the 70% median available drawdown threshold, 2) the average additional subsidence threshold of 1 foot, or 3) surpass an annual pumping rate that is not realistic because it significantly exceeds expected demand. In seven counties (e.g., Grimes, Jasper, Jefferson, Montgomery, Newton, Walker, and Waller) pumping was limited by the available drawdown metric, suggesting that in these counties managing to and monitoring available drawdown is sufficient to comply with adopted DFCs. The average subsidence metric limited annual pumping in Brazoria, Chambers, Liberty, and Orange counties, suggesting that managing to and monitoring subsidence is sufficient to comply with the adopted DFCs. In Austin, Hardin, Polk, San Jacinto, Tyler, and Washington counties annual pumping was not

limited by the available drawdown or subsidence metric but was instead limited by the model limitation of 30,000 acre-feet per year above the maximum projected water demand in the State Water Plan. In Austin, Hardin, Polk, San Jacinto, Tyler, and Washington counties, groundwater pumping is unlikely to threaten non-compliance with the DFCs; however, monitoring both available drawdown and subsidence to the extent feasible in these counties may be useful.

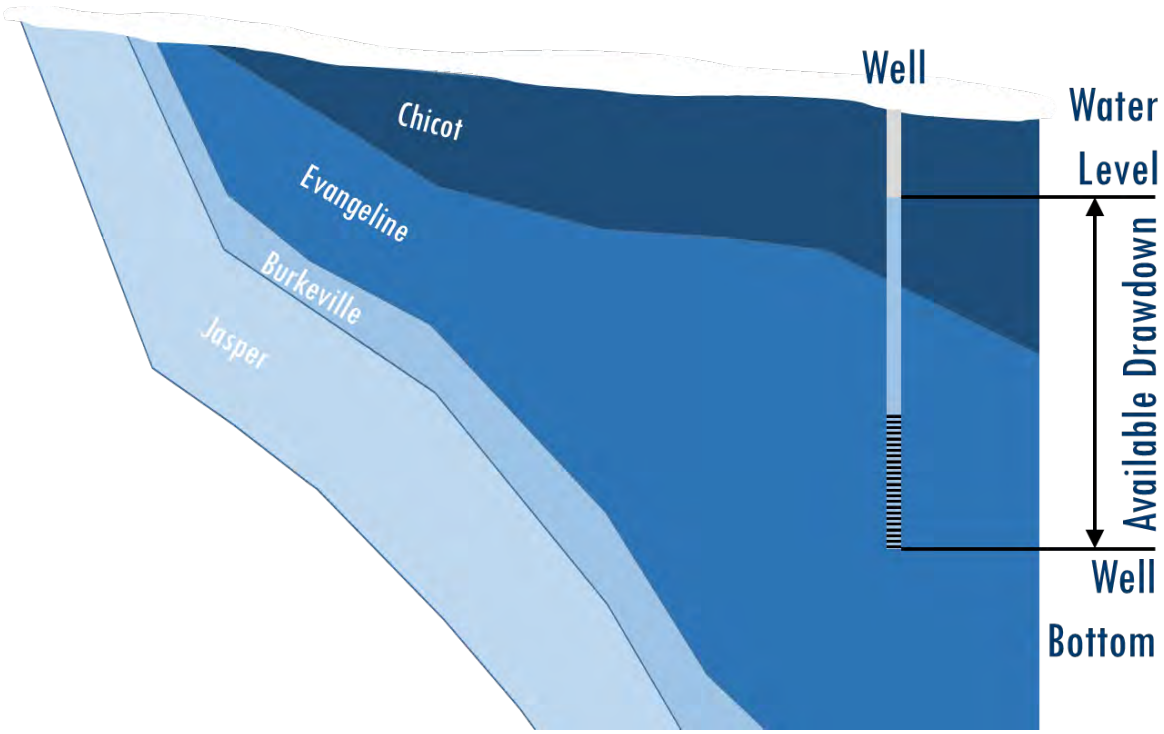

FIGURE 2-1. ILLUSTRATION OF THE CONCEPT OF AVAILABLE DRAWDOWN AS DEFINED FOR USE IN 2022 GMA 14 JOINT PLANNING

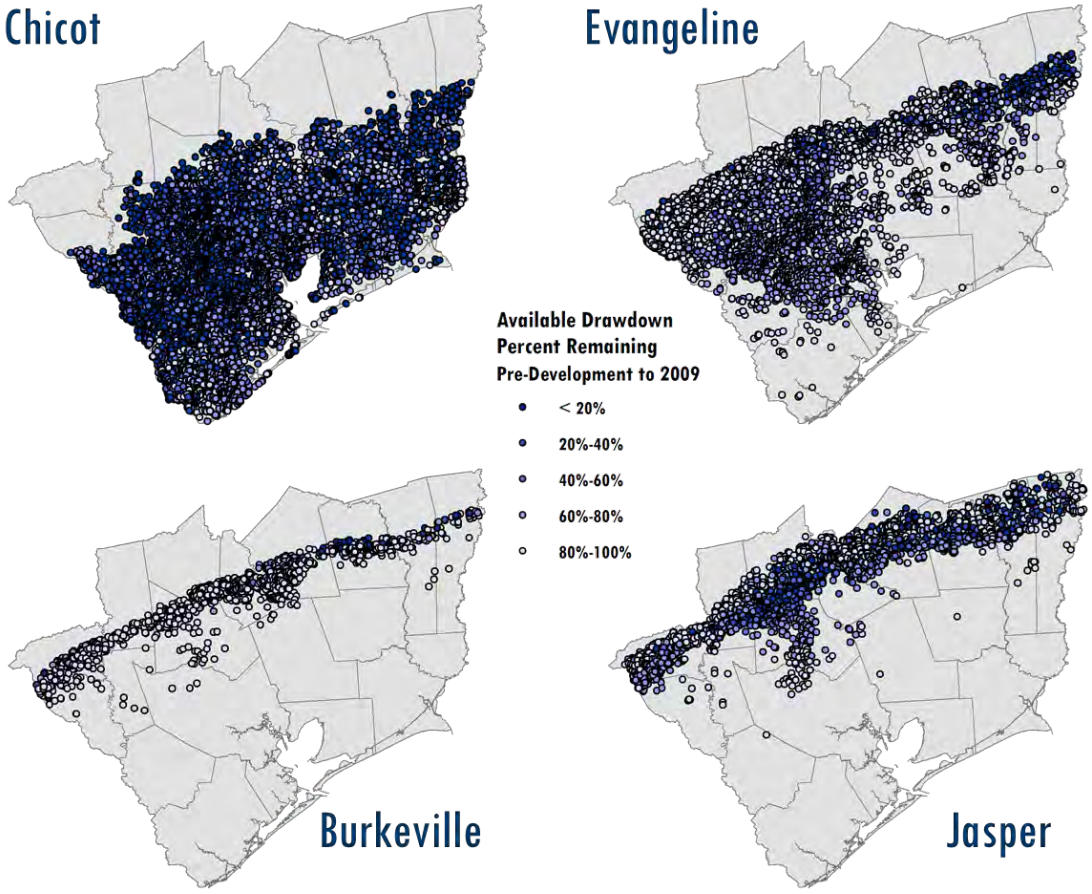

FIGURE 2-2. WELLS USED FOR CALCULATING MEDIAN PERCENT AVAILABLE DRAWDOWN REMAINING

TABLE 2-1. MEDIAN PERCENT OF PRE-DEVELOPMENT AVAILABLE DRAWDOWN REMAINING IN 2009 BY COUNTY IN GMA 14 COMPARED TO 2009 PUMPING AND MAXIMUM SUBSIDENCE IN EACH COUNTY.

County	2009 Modeled Pumping (acre-feet)	Available Drawdown Remaining (Pre-Development to 2009)	2009 Modeled Maximum Subsidence (feet)
Austin	10,002	96%	0.4
Brazoria	41,968	64%	5.9
Chambers	4,328	61%	4.4
Fort Bend	121,022	36%	5.6
Galveston	1,076	68%	6.8
Grimes	3,737	89%	0.1
Hardin	18,992	67%	1.9
Harris	300,652	40%	10.3
Jasper	53,751	60%	4.0
Jefferson	3,049	61%	0.3
Liberty	26,711	66%	3.4
Montgomery	74,100	61%	3.8
Newton	3,041	66%	0.5
Orange	17,192	77%	3.1
Polk	4,178	85%	0.0
San Jacinto	2,545	89%	0.1
Tyler	2,860	76%	0.2
Walker	5,564	85%	0.0
Waller	24,402	66%	2.4
Washington	1,917	92%	0.0
GMA 14	721,085	60%	10.3

TABLE 2-2. ESTIMATED HIGHEST PRACTICABLE LEVEL OF GROUNDWATER PRODUCTION AS DEFINED BY A MEDIAN 50 PERCENT DEPLETION OF PRE-DEVELOPMENT AVAILABLE DRAWDOWN IN EACH COUNTY.

County	2070 Modeled Pumping (acre-feet)	Available Drawdown Remaining (Pre-Development to 2070)	2070 Modeled Maximum Subsidence (feet)	2009 Modeled Recharge (acre-feet)
Austin	672,535	44%	28.0	23,219
Brazoria	129,433	50%	12.4	50,921
Chambers	26,000	52%	7.9	7,553
Fort Bend	168,869	4%	24.2	58,014
Galveston	9,180	60%	12.9	1,370
Grimes	146,227	50%	0.6	5,796
Hardin	59,881	51%	3.4	24,795
Harris	228,813	33%	14.5	131,187
Jasper	67,928	50%	4.6	24,539
Jefferson	1,120	46%	4.3	5,309
Liberty	97,012	50%	7.2	33,799
Montgomery	95,789	50%	6.6	35,994
Newton	60,924	50%	5.3	18,042
Orange	77,079	51%	13.7	11,504
Polk	148,488	50%	1.4	16,940
San Jacinto	152,620	50%	3.1	7,024
Tyler	87,287	50%	2.0	12,675
Walker	70,328	50%	0.4	6,159
Waller	57,458	49%	10.5	25,898
Washington	94,375	49%	0.5	8,449
GMA 14	2,451,346	42%	28.0	509,188

TABLE 2-3. ESTIMATED PUMPING ASSOCIATED WITH THE CONSERVATION, PRESERVATION, PROTECTION, RECHARGING, AND PREVENTION OF WASTE OF GROUNDWATER AND CONTROL OF SUBSIDENCE.

County	2070 Modeled Pumping (acre-feet)	Available Drawdown Remaining (2009 to 2070)	2070 Modeled Maximum Subsidence (feet)	2009 Modeled Recharge (acre-feet)
Austin	14,683	100%	2.4	23,219
Brazoria	5,598	100%	5.9	50,921
Chambers	884	99%	4.4	7,553
Fort Bend	168,869	72%	6.5	58,014
Galveston	9,180	95%	8.4	1,370
Grimes	2,799	100%	0.1	5,796
Hardin	30,980	100%	1.9	24,795
Harris	228,813	100%	10.3	131,187
Jasper	6,627	100%	3.9	24,539
Jefferson	8,625	99%	0.3	5,309
Liberty	17,287	100%	3.4	33,799
Montgomery	9,239	100%	4.0	35,994
Newton	2,737	99%	0.5	18,042
Orange	27,819	100%	3.1	11,504
Polk	708	99%	0.0	16,940
San Jacinto	887	100%	0.1	7,024
Tyler	642	99%	0.3	12,675
Walker	3,560	100%	0.0	6,159
Waller	9,888	100%	3.7	25,898
Washington	2,124	100%	0.0	8,449
GMA 14	551,948	99%	10.3	509,188

TABLE 2-4. PUMPING ASSOCIATED WITH MEDIAN PERCENT AVAILABLE DRAWDOWN REMAINING TARGETS BETWEEN 50 PERCENT AND 100 PERCENT. NOTE THAT PUMPING IN THE SUBSIDENCE DISTRICTS (HIGHLIGHTED) WAS NOT ADJUSTED.

		2070 Modeled Pumping by Scenario (acre-feet)					
		Percent of Remaining Median Available Drawdown - Base Year 2009					
County	2016 DFCs	100%	90%	80%	70%	60%	50%
Austin	22,296	14,683	145,489	256,568	379,151	497,538	622,858
Brazoria	50,587	5,598	50,170	93,965	138,680	185,103	231,049
Chambers	21,642	884	9,934	16,334	32,047	46,519	64,356
Fort Bend	168,869	168,869	168,869	168,869	168,869	168,869	168,869
Galveston	9,180	9,180	9,180	9,180	9,180	9,180	9,180
Grimes	13,996	2,799	25,739	60,462	87,849	117,220	146,841
Hardin	34,926	30,980	42,682	48,308	59,023	70,695	84,646
Harris	228,813	228,813	228,813	228,813	228,813	228,813	228,813
Jasper	67,482	6,627	36,008	53,546	77,682	76,833	90,924
Jefferson	2,470	8,625	2,290	2,203	2,147	2,313	1,254
Liberty	43,229	17,287	32,657	65,682	85,027	109,974	130,340
Montgomery	64,003	9,239	41,614	62,622	91,293	122,352	155,695
Newton	34,218	2,737	11,519	20,870	34,723	48,111	60,916
Orange	19,997	27,819	38,178	53,480	69,737	85,133	99,796
Polk	36,707	708	24,955	54,590	84,025	115,296	144,919
San Jacinto	20,982	887	27,528	57,539	90,464	120,406	150,519
Tyler	38,210	642	15,246	32,061	50,550	68,844	86,997
Walker	17,972	3,560	12,898	27,896	42,090	57,580	71,770
Waller	41,592	9,888	23,204	37,477	50,773	63,630	76,647
Washington	13,031	2,124	18,485	38,054	56,059	74,743	93,375
GMA 14	950,203	551,948	965,459	1,388,520	1,838,183	2,269,153	2,719,766

TABLE 2-5. ESTIMATED MEDIAN AVAILABLE DRAWDOWN REMAINING AND MODELED AVERAGE SUBSIDENCE ASSOCIATED WITH THE ADOPTED DFC.

County	Modeled Annual Pumping (acre-feet)	Maximum Demand Under State Water Plan (acre-feet)	Available Drawdown Remaining (2009 to 2080)	2080 Modeled Average Subsidence (feet)	Limiting Metric
Austin	46,599	16,586	92%	0.4	Demand Limited (30,000 ac-ft threshold)
Brazoria	55,288	420,893	87%	1.0	Subsidence Limited
Chambers	22,219	182,726	76%	1.0	Subsidence Limited
Fort Bend	168,869	168,869*	58%	2.2	Not Applicable
Galveston	9,180	9,180*	87%	1.5	Not Applicable
Grimes	51,486	23,687	70%	0.0	Available Drawdown Limited
Hardin	37,720	7,817	81%	0.6	Demand Limited (30,000 ac-ft threshold)
Harris	228,813	228,812*	83%	0.8	Not Applicable
Jasper	73,283	72,515	69%	0.3	Available Drawdown Limited
Jefferson	15,481	403,061	68%	0.6	Available Drawdown Limited
Liberty	71,728	64,294	76%	1.1	Subsidence Limited
Montgomery	97,012	286,183	68%	0.5	Available Drawdown Limited
Newton	37,587	8,155	70%	0.2	Available Drawdown Limited
Orange	25,204	65,083	91%	1.0	Subsidence Limited
Polk	40,745	10,837	82%	0.0	Demand Limited (30,000 ac-ft threshold)
San Jacinto	35,041	5,059	82%	0.1	Demand Limited (30,000 ac-ft threshold)
Tyler	34,389	4,482	78%	0.0	Demand Limited (30,000 ac-ft threshold)
Walker	42,448	15,458	70%	0.0	Available Drawdown Limited
Waller	55,491	39,686	69%	0.6	Available Drawdown Limited
Washington	40,397	10,416	77%	0.0	Demand Limited (30,000 ac-ft threshold)

highlights limiting metric

*Pumping in Subsidence District is set by the 2013 Regulatory Plan.

3. POLICY AND TECHNICAL JUSTIFICATIONS

Texas Water Code Section 36.108(d-3)(2) requires that the explanatory report provide the policy and technical justifications for each desired future condition. For the current round of joint planning, the policy and technical considerations and justifications for the adopted DFCs are best explained through a review of the timeline spanning their development and adoption. This section will highlight many of the major events and meetings that influenced the development and adoption of the DFCs described in this Explanatory Report.

The timeline included below clearly illustrates both the policy and technical considerations that are weighed by the District Representatives during development and adoption of DFCs. Each district "weights" the factors included in Texas Water Code Section 38.108(d)(1-9) differently. In addition, different districts interpret the role of the joint planning process differently. Some districts view the process as primarily a planning exercise. Other districts view the process as having regulatory implications and critical for providing landowners with a "fair share" of groundwater.

The adopted DFCs represent a balance between development and conservation of groundwater. The adopted DFCs also represent the result of a negotiation among the District Representatives about the best process to follow and method for articulating DFCs. The District Representatives made a clear effort through the joint planning process to address issues identified in the petitions of the 2016 DFCs while also adopting DFCs that are more consistent across GMA 14.

Adoption of DFCs for the Second Round of Joint Planning

On April 29, 2016, the District Representatives in GMA 14 adopted DFCs for the individual units of the Gulf Coast Aquifer System (Chicot, Evangeline, Burkeville, and Jasper) by county and for GMA 14 overall. These DFCs were generally structured as an average drawdown over the 61-year period between 2009 and 2070 for each layer of the aquifer. Bluebonnet GCD also adopted DFCs based on maximum subsidence from pre-development conditions through 2070.

Petitions Appealing DFCs Adopted by Lone Star GCD

On December 2, 2016, Lone Star GCD received a petition from the Cities of Conroe and Magnolia, Texas appealing the DFCs adopted by the district. The petition was submitted to TWDB by Lone Star GCD on December 12, 2016.

On December 6, 2016, Lone Star GCD received a petition from Quadvest, L.P. appealing the DFCs adopted by the district. The petition was submitted to TWDB by Lone Star GCD on December 14, 2016.

TWDB Issues Modeled Available Groundwater

TWDB issued GAM Run 16-024 MAG report (Wade S. C., 2016) on December 15, 2016, documenting development of the estimated modeled available groundwater associated with the DFCs adopted in 2016.

Lone Star GCD Completes Strategic Planning Study, Changes Policy Goal Change and Resolves 2016 Petition

In October 2017, Lone Star GCD received the results of a three-year Strategic Water Resources Planning Study (LBG-Guyton Associates, 2017). As a result of the study, Lone Star GCD declared a change in its policy priorities and goals in October 2017. The district's stated policy goal shifted away from sustainability and toward a policy that "allows measured aquifer level declines." The Lone Star GCD Board unanimously adopted 1) increased pumping levels (from 64,000 acre-feet per year to 100,000 acre-feet per year through 2070) and resulting aquifer conditions included in what is referred to as groundwater availability model "Run D" from the final report for Task 3 of the Planning Study as the District's recommended model scenario; and 2) recommended that the district's General Manager and consultants present the results of the Strategic Water Resources Planning Study, including the recommendation for Run D, to the district representatives of GMA 14 with a request that Run D be considered in the joint planning process as either an amendment to the DFCs previously adopted in 2016 or as a new proposal.

Lone Star GCD and the cities of Conroe and Magnolia reached an agreement regarding the petition filed on December 2, 2016, which included utilizing Run D as the resolution to the petition. Quadvest LP did not oppose the agreement.

Consideration of Run D as the Basis for New or Amended DFCs

Following resolution of the petitions challenging the reasonableness of the DFCs in Montgomery County, Lone Star GCD first requested formal consideration of a "new or amended" DFC based on "Run D of Task 3 of the Lone Star GCD Strategic Water Resources Planning Study." In a letter dated March 9, 2018, Lone Star GCD requested formal consideration of Run D "only as an amendment" to the previously adopted DFC. At the March 27, 2018, meeting of the District Representatives in GMA 14, Lone Star GCD's request to consider Run D only as an amendment to the previously adopted DFC did not pass. Instead, the District Representatives voted to consider Run D in response to its request from the appeal and to develop the third cycle DFCs. This model run (which includes approximately 100,000 acre-feet per year of pumping in Lone Star GCD) and another model run provided by Lone Star GCD using the Run D well file as the base file, became the focus of discussion and consideration throughout the third cycle of joint planning.

As described in a technical analysis of the situation prepared for Bluebonnet GCD, changing the DFC for only Montgomery County (that is, Lone Star GCD) would violate the requirement in Texas Water Code Chapter 36.108(d)(8) that the DFCs be feasible (Hutchison, 2018). Adoption of the drawdowns included in Run D as the DFCs for Montgomery County would change conditions in neighboring counties to such a degree that it would necessitate reevaluation of DFCs throughout GMA 14.

Meeting January 30, 2019 - Beginning Third Round of Joint Planning – Consideration of Aquifer Uses and Conditions

The January 30, 2019 meeting of the Participants began the third round of joint planning in GMA 14 and included discussion and consideration of aquifer uses and conditions throughout the management area. The presentation also included a review of the basics of the joint planning process.

At the meeting, Mr. Harry Hardman, then Vice President of the Lone Star GCD Board of Directors, shared remarks with the Participants describing the status of his district's management plan and efforts to get it approved even though the DFCs in the district adopted in 2016 had been declared "no longer reasonable." Mr. Hardman also shared his desire for GMA 14 to follow a different process for the current round of joint planning that affords "every owner of a common subsurface reservoir a fair share" (also referred to as using a "common reservoir" approach when developing DFCs).

He referenced an interim report in 2018 by the Senate Committee on Agriculture, Water and Rural Affairs that concluded that "two GCDs over the same aquifer with similar science-based hydrological formations should not have dissimilar DFCs." The full comments by Mr. Hardman, as well as all other meeting materials for this and subsequent GMA 14 meetings, are included in Appendix D.

Meeting March 27, 2019 – Consideration of Water Supply Needs and Management Strategies

On March 27, 2019, the Participants in GMA 14 received and considered a presentation of the water supply needs and management strategies in the State Water Plan. Also, during the meeting, Mr. Mike Thornhill, a technical consultant to Lone Star GCD, provided a presentation proposing an alternative path forward for joint planning that focused on delineation of the "common reservoir" for DFCs guided by current water use, water level changes, storage, subsidence and projected future uses. LSGCD requested Run D, that was developed in the second round, to be removed on the basis that it was not developed using the common reservoir approach. The GMA 14 Consultant was directed to evaluate cost and schedule impacts

associated with Mr. Thornhill's presentation for the following joint planning meeting. Mr. Hardman, the District Representative for Lone Star GCD, also moved to remove Run D from consideration as a future methodology and from the scope of work for the third round of joint planning. The motion carried unanimously.

Meeting June 26, 2019 – Consideration of Hydrological Conditions

On June 26, 2019, the Participants in GMA 14 received and considered a presentation of the hydrological conditions in GMA 14, including for each aquifer in the management area the total estimated recoverable storage and the average annual recharge, inflows, and discharge. The Participants also received options for modifying the joint planning process consistent with the presentation provided by Mr. Thornhill during the March 27, 2019 meeting. After considerable discussion, Mr. Hardman moved to postpone discussion of delineation of the DFCs to the end of the joint planning process.

Mr. Hardman elaborated on the situation Lone Star GCD was in, in light of TWDB rejecting their proposed management plan submittal.

Meeting August 15, 2019 – Balancing Test

On August 15, 2019, the Participants in GMA 14 received and considered a presentation on the 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. During this presentation, the concept of median available drawdown remaining was introduced as a potential metric for characterizing aquifer conditions in areas that are hydrologically dissimilar.

During the meeting, representatives for Lone Star GCD expressed a desire to reconsider the second round of DFCs or expedite the third round of DFCs for management plan compliance. After discussion, the Participants requested that a cost estimate for expediting the third round of joint planning be developed for the next meeting. Lone Star GCD was under the impression that the DFCs were to be developed under an expedited schedule already and that an expedited schedule was factored in the GMA 14 Consultant's proposal and would not necessarily cost more money but would just require meeting more often. Mr. Thornhill, a technical consultant to Lone Star GCD, commented that the approach taken by the group relating to the balancing test is acceptable and does not fall into "reverse engineering," which had been a criticism of previous DFCs.

Meeting November 13, 2019 – Designating common reservoirs and choosing model scenarios

During the November 13, 2019 meeting, the Participants considered various model runs including a request by Southeast GCD for 75% remaining available drawdown, a remaining available drawdown proposal by Lone Star GCD, and two remaining available drawdown scenarios by Brazoria GCD. The Participants also considered a cost estimate for expediting the third round of joint planning. Ms. Reiter, as the District Representative for Lone Star GCD, noted that the DFCs at this point would not result in DFCs being developed considerably faster given the time that had already passed though Lone Star GCD was not formally withdrawing its request. Ms. Reiter also noted that Lone Star GCD would be presenting a process for a model run that is new to GMA 14 and wanted to make sure that the GMA 14 District Representatives had adequate time to meaningfully consider and review the model.

The Participants reviewed and considered a presentation by Mr. Thornhill representing Lone Star GCD regarding methods for delineating a common reservoir. The intent of the proposal was to utilize 30 percent of regional and state water plan identified needs to evaluate the potential capability of the aquifer, if allowed, to meet those needs. In addition, Mr. Thornhill noted there would need to be interpretation of the feasibility of strategies, such as if groundwater could take the place of a surface water. Dr. Bill Hutchison representing Bluebonnet GCD suggested focusing on the physical capabilities of the aquifer. He recommended the District Representatives begin within the parameters of the modeling work performed for the balancing test and modify the pumping to more closely align with the Lone Star GCD framework and objectives of identifying favorable productivity and water quality locations to locate production near demand areas.

Dr. Hutchison noted a key highlight of the median available drawdown approach in the balancing test scenarios is that it expresses potential DFCs using available well records, defining a new way to express DFCs across the entire GMA. It removes the issue of drawdown in county-by-county delineation and the planning goal can be uniform everywhere across the GMA considering existing infrastructure, well depth differences, aquifer parameters to generate pumping and subsidence. The District Representatives moved to run a 75 percent median available drawdown remaining scenario requested by Southeast Texas GCD and then work with Lone Star GCD on a pumping distribution methodology. The District Representatives also moved to approve the run proposed by Brazoria County GCD. Both motions carried unanimously.

Meeting February 24, 2020 – Model Run Results and Potential Paths Forward

On February 24, 2020, the Participants in GMA 14 received and considered two presentations relating to model run results. The first presentation was by technical consultants for Lone Star GCD. As described by Mr. Thornhill representing Lone Star GCD, the approach used in the model runs performed by Lone Star GCD's technical consultants emphasizes management of aquifers across the region, a groundwater rights holder's opportunity to produce a fair share, and the requirement for balancing use with conservation to find availability. Mr. Mike Keester

representing Lone Star GCD presented the model results for available drawdown scenarios, which seek to simulate what would happen if all expected future needs are met by groundwater projects.

The GMA 14 Consultant presented results for the 75 percent median available drawdown remaining proposal by Southeast Texas GCD. He noted that the two median remaining available drawdown runs proposed by Brazoria County GCD were consistent with model runs completed and presented previously. Discussion by the Participants noted that the group had not yet settled on a clear path forward for further decision-making.

Meeting April 29, 2020 – Additional Model Run Results and Potential Paths Forward

On April 29, 2020 meeting, the Participants in GMA 14 received and considered a presentation from the GMA 14 Consultant relating to the selection of DFC metrics and a review of model run results. The discussion on selection of meaningful DFC metrics included posing questions such as (1) does the metric capture the limiting factor on groundwater availability, (2) how robust is the dataset for the base year, (3) do GCDs have access to monitor the selected metric, (4) how directly can the DFC be monitored, and (5) how well does the DFC cover the aquifer?

The GMA 14 Consultant's presentation also included discussion of single metric versus multiple metric DFCs. The GMA 14 Consultant introduced the District Representatives to a multi-metric approach he had developed that considered median percent remaining available drawdown thresholds of 70 percent, 80 percent, and 90 percent; and average additional subsidence thresholds of 0.1 feet, 0.3 feet, and 0.5 feet in each county. To address the HAGM limitation resulting from the general head boundaries (as discussed above and also in Chapter 4), and to allow for growth while ensuring the distribution of pumping in the model runs remained realistic, the modeled pumping in each county was not allowed to be increased to more than 30,000 acre-feet per year above the maximum projected water demand in the 2017 State Water Plan if neither the available drawdown nor subsidence thresholds were reached. One potential disadvantage of single metric DFCs (such as average drawdown) is that while it can account for varying aquifer conditions, it can be difficult to explain why there are differences between DFCs in different areas. A potential benefit of multiple metric DFCs is that they allow for consistent DFCs throughout the GMA while accounting for local differences in conditions. It allows for both the process of DFC development and the results to directly address statutory factors and has a less direct link to the existing pumping distribution, which addresses concerns about "reverse engineering." A potential drawback of multiple metric DFCs is that multi-county Districts would have to monitor more than one aquifer characteristic. District Representatives reviewed multiple metric modeling results for each county that considered median available drawdown remaining, average additional subsidence, and received information regarding which metric acted as the limiting factor in each county in various simulations.

The Participants also reviewed and considered a presentation by consultants for Lone Star GCD showing modeling results. Mr. James Beach representing Lone Star GCD noted that the district weights private property rights the highest among the nine statutory factors in Texas Water Code Section 36.108(d). Lone Star GCD also discussed that while it was not opposed to using the multiple metrics as modeling constraints within a common reservoir type approach, Lone Star GCD did not support a DFC statement incorporating water level and subsidence. Lone Star GCD indicated that a subsidence DFC was not appropriate for Lone Star GCD, and it believed the petition issues were adequately addressed using the "percent remaining available drawdown" metric as it has been simulated in the previous modeling scenarios. Lone Star GCD reiterated that it was not opposed to using the "multi-metric" approach for modeling purposes, but that Lone Star GCD never needed or requested the multi-metric approach nor agreed to adopt it in a DFC statement. Lone Star GCD's objection to a subsidence DFC metric ultimately led to Lone Star GCD requesting the proposed DFCs to be revised to replace the "and" with an "or" so that each district has the flexibility to adopt the applicable metric in the DFC statement as needed for local management. *See* Lone Star GCD's Summary and Position Paper in Appendix C.

Following the review of varied model results, the Participants discussed and requested additional information on the maximum subsidence associated with each scenario, how the results would differ with a higher average additional subsidence metric to address issues with the modeling results identified in Brazoria County, and using different well files prepared by Lone Star GCD consultants as the base file for the simulations.

Meeting May 29, 2020 – Selecting a Path Forward

On May 29, 2020, the Participants in GMA 14 considered additional model run results based on the multiple metric approach using both median available drawdown and subsidence remaining. The discussion included input by Mr. James Beach representing Lone Star GCD stating that Lone Star GCD does not intend to use subsidence as a metric in their DFC statement. Mr. Beach stated that this was because there are causes of subsidence within Montgomery County that Lone Star GCD does not control. Lone Star GCD objected to the inclusion of a subsidence metric in a DFC statement for Montgomery County for a number of reasons including because the subsidence metric was not the limiting factor in Montgomery County in the modeling. *See* Lone Star GCD's Summary Report and Position Paper in Appendix C. It was discussed amongst the group that the specifics of a DFC statement can be adjusted near the end of the joint planning process.

Following review of the modeling results and considerable discussion, the Participants unanimously selected three model runs to consider during evaluation of the remaining factors in Texas Water Code Section 36.108(d). The selected runs were (1) 70 percent median available drawdown remaining, with no more than 1-foot average additional subsidence using Run D as the base pumping distribution, (2) 70 percent median available drawdown remaining, with no

more than 1-foot average additional subsidence using the 2016 base pumping distribution, and (3) 80 percent median available drawdown remaining, with no more than 1-foot average additional subsidence using the 2016 base pumping distribution.

Meeting July 15, 2020 – Consideration of Subsidence

On July 15, 2020, the Participants in GMA 14 received and considered a presentation regarding the impacts on subsidence for the three model run scenarios selected during the May 29, 2020 joint planning meeting. This included discussion on the difference between compaction and subsidence and how they are evaluated in the HAGM. Following the presentation, the Participants agreed that faulting should be evaluated as part of the "Other Information" factor referenced in Texas Water Code Section 36.108(d)(9).

Meeting September 16, 2020 – Consideration of Environmental and Socioeconomic Impacts

On September 16, 2020, the Participants in GMA 14 received and considered presentations on environmental and socioeconomic impacts. Information on environmental impacts primarily focuses on the potential impact of groundwater pumping on interaction with surface water features such as rivers and creeks. The consideration of socioeconomic impacts included review of quantitative evaluations available through the regional water planning process, reviews of the cost of water and potential costs of addressing water level declines in wells, as well as other qualitative considerations.

Meeting November 18, 2020 – Consideration of Private Property Rights

On November 18, 2020, the District Representatives in GMA 14 received and considered four presentations by practicing water attorneys relating to private property rights and a fifth presentation relating to takings claims.

Meeting January 20, 2021 – Considering Feasibility and Faulting

On January 20, 2021, the Participants in GMA 14 received and considered presentations relating to the feasibility of achieving desired future conditions and "any other information relevant" to the DFC, which was decided at the July 15, 2020 meeting, would include faulting. The discussion by the Participants regarding feasibility centered around the process for monitoring subsidence and potential costs. The discussion on faulting showed the methods for identifying faults and rates of fault movement. The Participants also reviewed information demonstrating the link between groundwater production and rates of fault movement.

As in some prior meetings, Lone Star GCD reiterated that it cannot support a DFC statement that includes subsidence for Montgomery County. The Participants discussed and considered this in the context of multiple metric approach.

Meeting February 24, 2021 – Review of Factors

On February 24, 2021, the Participants in GMA 14 received and considered a presentation reviewing the information presented in previous meetings including the balancing test and the factors included in Texas Water Code Section 36.108(d)(1-9). Though the agenda for the meeting included potential proposal of DFCs for adoption, there was considerable discussion among the Participants about Lone Star GCD's desire to not have subsidence as a component of its DFCs. The District Representatives chose to delay action on proposing DFCs for adoption until the next meeting. The next meeting was originally planned for March 31, 2021, but was subsequently rescheduled to April 9, 2021.

Meeting April 9, 2021 – Proposal of DFCs for Adoption

On April 9, 2021, the Participants met to discuss proposed DFCs. Each of the three scenarios selected during the May 29, 2020 meeting were under consideration and there was extended discussion about the best way to translate these scenarios into the language of a DFC. Lone Star GCD's District Representative noted her objections to a subsidence metric for Montgomery County and that the resolution language did not address each county's applicable DFC based on the modeling. Following this discussion and a decision not to include a formal resolution approving proposed DFCs, a motion was made to propose DFCs in each county of no less than 70 percent median available drawdown remaining in 2080 and no more than 1.0 additional foot of average subsidence between 2009 and 2080, using the HAGM pumping distribution without an associated resolution. The motion passed unanimously by the District Representatives.

Meeting October 5, 2021 – Consideration of Public Comments, District Summary Reports, Proposed Revisions to Resolution Language, and Draft Explanatory Report

On October 5, 2021, the Participants reviewed, discussed, and considered each District's summary reports regarding written comments received by each GCD during the public comment period and at its public hearing, and considered any GCD's suggested revisions to the proposed DFCs. The majority of comments received by each District related to the DFCs as applied to Lone Star GCD and positions for and against a change in the DFC statement of the "and" to an "or." After discussion, four of five of the District Representatives voted to approve a form resolution (Southeast Texas GCD abstained) that will be used to guide completion of the report. The District Representatives finalized a proposed resolution for use when the DFCs are adopted at a later meeting. Following the finalized proposed resolution language and discussion on the draft explanatory report, the District Representatives emphasized the desire to attain a unanimous vote of support for the proposed DFCs and proposed resolution. Furthermore, the District Representatives did not initiate the 60-day submission deadline with the draft explanatory report.

Meeting January 5, 2022—Review of Draft Explanatory Report and Adoption of DFCs

At the January 5, 2022 GMA 14 meeting, the District Representatives unanimously adopted DFCs as shown in GMA 14 Resolution 2021-10-5., and listed below.

> *In each county in GMA 14, no less than 70 percent median available drawdown remaining in 2080 or no more than an average of 1.0 additional foot of subsidence between 2009 and 2080.*

This started the 60-day submission deadline for the draft explanatory report. The resolution changes the "and" to an "or" in the DFC statement. The District Representatives agreed to meet again on February 23, 2021 for the purpose of reviewing and approving the explanatory report.

4. Factor Consideration

4.1. Aquifer Uses and Conditions

Texas Water Code Section 36.108(d)(1) requires District Representatives in a GMA to consider "aquifer uses or conditions within the management area, including conditions that differ substantially from one geographic area to another." District Representatives in GMA 14 reviewed and considered this factor on January 30, 2019, and again as part of the review of all factors considered on February 24, 2021. The presentation from this meeting and supplemental materials are shown in Appendix I. Also included in Appendix I is the water use information by both aquifer and use type, which was prepared for each county and considered by the Participants.

To consider aquifer uses and conditions, the Participants evaluated the distribution of well depths and yields across the area. This included information from over 100,000 wells from the TWDB Groundwater and Submitted Drillers Reports databases (Texas Water Development Board, 2019). The distribution of well depths is shown in Figure 4-1. The average well depth in GMA 14 is approximately 226 feet. Many of the deepest wells are in more developed areas such as Fort Bend, Harris, and Montgomery, counties.

The distribution of well yields is shown in Figure 4-2. Approximately 46,000 wells in GMA 14 had available well yield information. The distribution of well yields is similar to the distribution of well depths shown in Figure 4-1 in that the higher yield wells are likely to be deeper and located in areas with the highest water demands. Well yield in GMA 14 averages 75 gallons per minute, though many wells have yields that exceed 1,000 gallons per minute. It is important to note that well yield does not represent the maximum that the aquifer can produce at any one location. It is very strongly influenced by factors such as well depth, construction technique, and pump size.

Maps like those in Figure 4-1 and Figure 4-2 showing the well depths and yields at the county scale were also developed and considered by the Participants. These are shown in Appendix I.

The Participants also considered the annual pumping by aquifer throughout GMA 14, shown in Figure 4-3. Most of the groundwater pumping in the GMA is from the Gulf Coast Aquifer System. Overall, groundwater use has been declining since 2000 from approximately 700,000 acre-feet per year to approximately 500,000 acre-feet per year in 2016. The spike in water use in 2011 corresponds to a severe drought experienced statewide. Note that this declining trend is not universal for every county in GMA 14 (see Appendix I).

Note in Figure 4-3 that, beginning in 2010, approximately one-third of the pumping is classified as coming from "Other Aquifer." This is a consistent feature of the groundwater

pumpage data across Texas and corresponds to the time during which surveys of water use switched from paper to electronic submission. In the electronic submission process, it is our understanding that the aquifers within the Gulf Coast Aquifer System are not provided as options (for example, the Evangeline or Jasper aquifers). It appears that many individuals submitting water use surveys may not have known from which aquifer their wells produce, at least in the parlance used by TWDB and in the joint planning process. The District Representatives interpret the shift to “Other Aquifer” beginning in 2010 to be associated with a change in data collection methodology and not a change in the way groundwater resources are used.

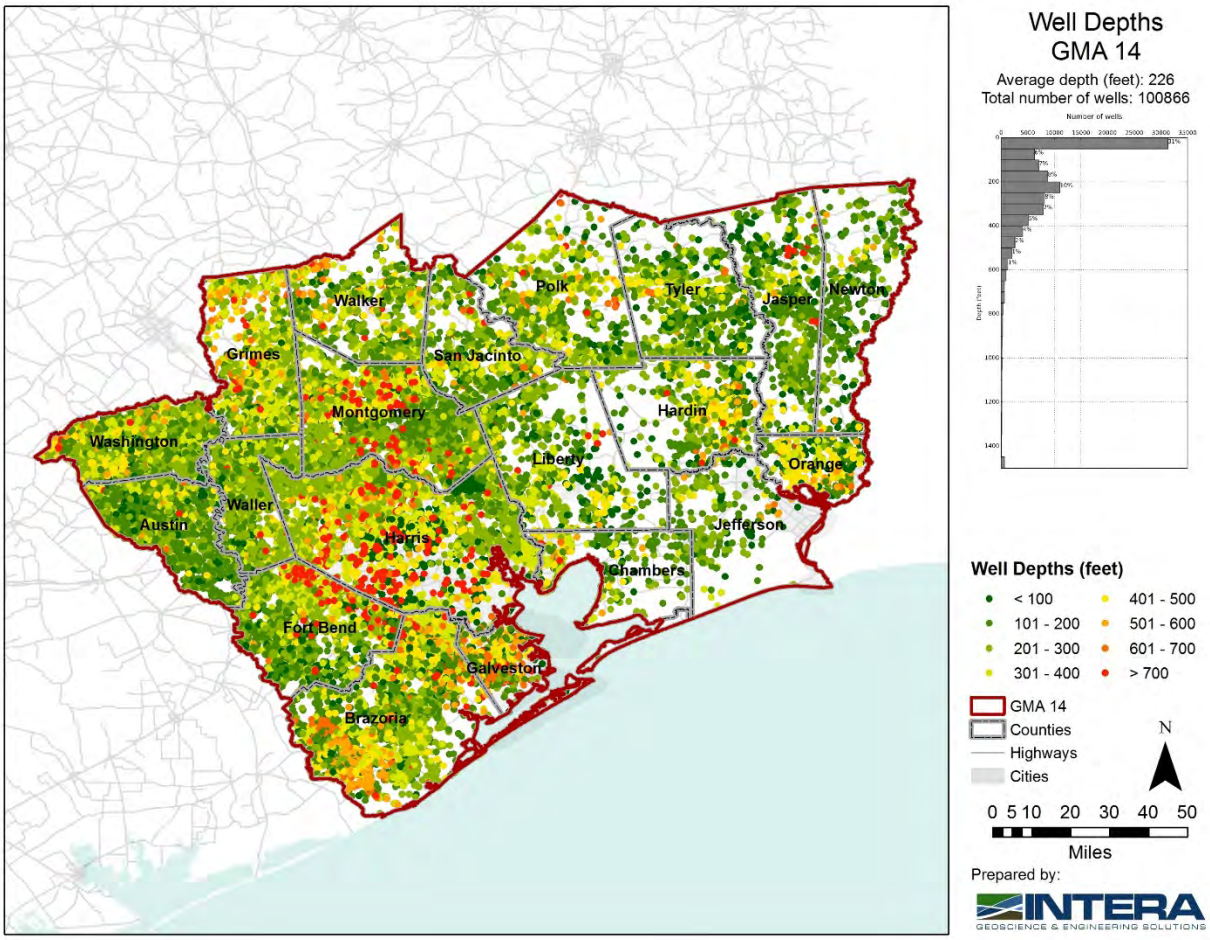

FIGURE 4-1. DISTRIBUTION OF WELL DEPTHS IN GMA 14

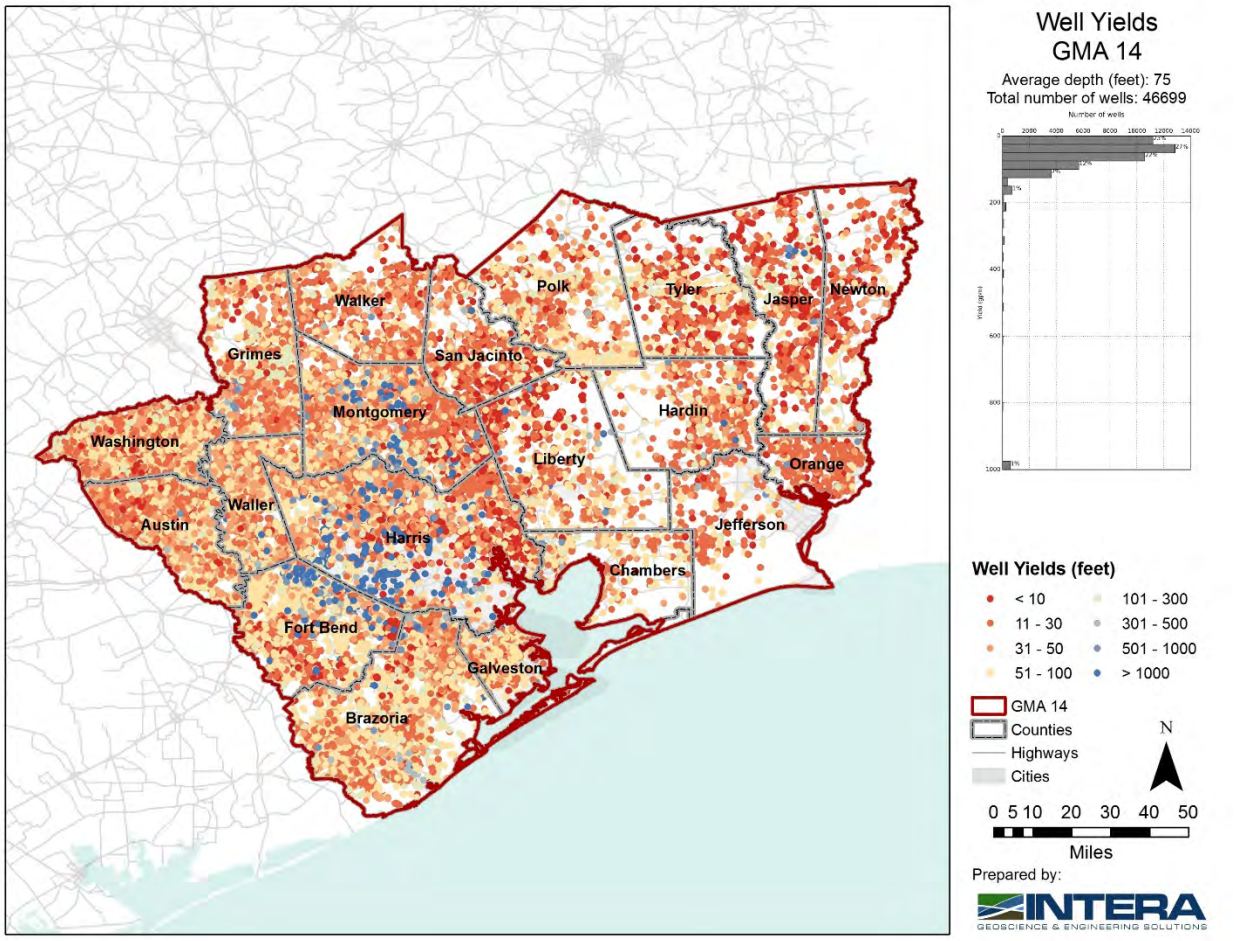

FIGURE 4-2. DISTRIBUTION OF WELL YIELDS IN GMA 14

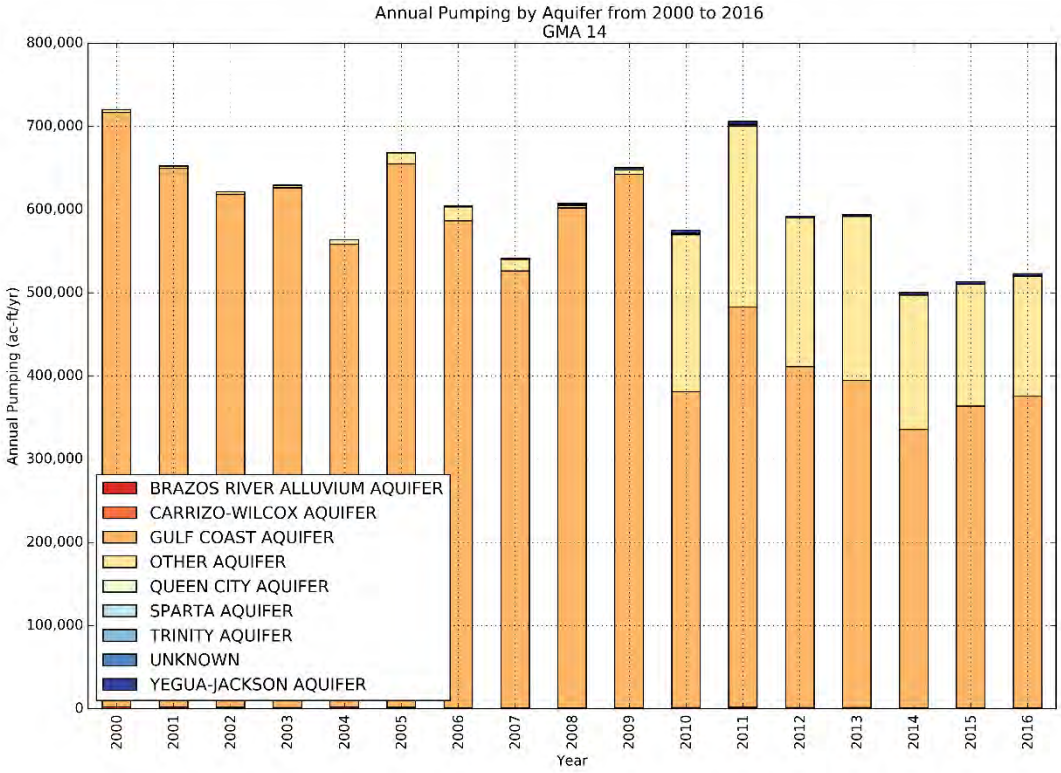

FIGURE 4-3. ANNUAL PUMPING BY AQUIFER IN GMA 14 (TEXAS WATER DEVELOPMENT BOARD, 2019)

4.2. Water Supply Needs and Water Management Strategies

GMA 14 District Representatives are required by Texas Water Code Section 36.108(d)(2) to review the water supply needs and water management strategies contained in the State Water Plan. Consideration of these components in addition to projected population growth was completed through review of the Texas Water Development Board adopted population and water demand projections for the 2022 State Water Plan and the final 2017 State Water Plan. An overview of the information considered is provided in this section, while detailed information presented to the Participants during the March 27, 2019, meeting is provided in Appendix J.

GMA 14 is a diverse region containing both urban and rural communities. Three regional water planning areas intersect with GMA 14— Region G (Brazos), Region H, and Region I (East Texas). The 20 counties of GMA 14 comprise less than 10 percent of the State's landmass, but represent around a quarter of the State's population.

The population of GMA 14 and the state of Texas is expected to increase over the 50-year planning horizon by 58 and 73 percent respectively; likewise, the population of all counties within GMA 14, apart from Newton County, is projected to grow over that time (Table 4-1). Most GMA 14 residents (92 percent) currently live in six of the twenty counties (Brazoria, Fort Bend, Galveston, Harris, Jefferson, and Montgomery), with 60 percent of residents residing in Harris County. The remaining fourteen counties had an average population of 46,600 in 2020. This distinct divide between urban and rural counties is evident in the variation of municipal water use across GMA 14.

In the 2017 State Water Plan, water needs are the difference between projected water demand and existing water supplies. At the county level, existing water supplies may in aggregate appear sufficient to meet the water needs, suggesting excess supply and zero needs, but because water supply is not distributed evenly some areas may experience shortages while others have ample supplies. This distribution issue is particularly apparent in Figure 4-5. In 2020, the difference between total water supplies and demand is approximately 125,000 acre-feet, while water needs totaled throughout GMA 14 are approximately 560,000 acre-feet. Water needs are met through exploration and implementation of water management strategies. Strategies are a plan to meet a need for additional water by a discrete water user group, which can be through increasing the total water supply or maximizing an existing supply, including through reducing demands. Identifying water needs and realistic strategies is imperative for water management. Prior to identifying water needs, projected water demand and existing supplies must be quantified.

Within the State Water Plan, water demand is the volume of water required to carry out the anticipated domestic, public, and/or economic activities of a water user group during drought

of record conditions. The State Water Plan divides water demand into six categories: irrigation, livestock, manufacturing, mining, municipal, and steam electric power. Water demand estimates for the 2022 State Water Plan were significantly lower for GMA 14 than in previous State Water Plans (Figure 4-4). This decrease was due to updated methodology for projecting irrigation, manufacturing, and steam electric power demands. More detail on the changed methodology and how demand forecasts changed within the individual sectors are provided in Appendix J. Over the 50-year planning horizon, GMA 14's total water demand is expected to increase primarily due to the increase in municipal water use as population grows.

The 2017 State Water Plan projects existing water supplies to increase slightly through 2070. Most existing supplies are from surface water. Groundwater provides approximately 20 percent of the total existing supplies, while direct reuse is only a small fraction of existing supplies.

Potential water management strategies identified by the 2017 State Water Plan aim to provide water to meet the identified needs. Figure 4-5 presents how water demands, existing supplies, identified needs, and potential strategies are projected to grow through 2070. Figure 4-6 further disaggregates the potential strategies and compares them to the identified need. Surface water is the leading strategy identified, while water reuse and demand reduction follow. Groundwater strategies including new groundwater wells, brackish groundwater desalination, and conjunctive use represent 5 percent of overall identified strategies and are expected to increase slightly over the projected timeframe.

Evaluation of the supplies, strategies, and demands of each individual county within GMA 14 demonstrates the variable reliance on groundwater for meeting water needs (Figure 4-7, Figure 4-8). Groundwater comprises over 98 percent of the projected 2070 total supplies of Austin, Hardin, and Waller counties; over half of the 2070 water supply of Montgomery, Polk, San Jacinto, and Tyler counties is from groundwater. All other counties are projected to utilize other existing supplies and strategies more so than groundwater. Across GMA 14, a decrease in water demands from 2017 and 2022 State Water Plans is typically observed. Many counties will require similar or fewer strategies than what was projected by the 2017 State Water Plan to meet projected water demands identified for the 2022 State Water Plan.

TABLE 4-1. PROJECTED POPULATION OF COUNTIES IN GMA 14 INCLUDED IN THE BOARD-ADOPTED VALUES FOR THE 2022 STATE WATER PLAN.

COUNTY	BOARD-ADOPTED VALUES FOR 2022 STATE WATER PLAN PROJECTED POPULATION					
	2020	2030	2040	2050	2060	2070
AUSTIN	33,014	38,257	43,886	50,483	57,721	65,756
BRAZORIA	359,935	411,387	463,886	519,696	581,368	648,568
CHAMBERS	42,162	50,543	59,210	68,541	78,519	88,999
FORT BEND	881,966	1,095,123	1,259,307	1,421,933	1,583,782	1,755,164
GALVESTON	343,570	377,373	403,820	427,547	447,126	465,193
GRIMES	29,441	32,179	34,258	36,454	38,277	39,867
HARDIN	59,477	63,986	67,194	69,560	71,410	72,798
HARRIS	4,707,870	5,058,144	5,376,099	5,678,242	5,974,068	6,272,346
JASPER	36,878	37,695	37,849	37,849	37,849	37,849
JEFFERSON	267,379	284,620	302,744	323,802	347,030	373,041
LIBERTY	86,303	97,227	107,618	118,048	128,028	137,560
MONTGOMERY	627,917	811,252	1,019,278	1,267,916	1,576,135	1,946,063
NEWTON	14,445	14,445	14,445	14,445	14,445	14,445
ORANGE	86,327	90,233	92,984	94,848	96,269	97,298
POLK	51,870	57,943	62,722	66,796	70,120	72,799
SAN JACINTO	29,610	32,627	34,996	37,614	39,789	41,714
TYLER	22,288	22,396	22,396	22,396	22,396	22,396
WALKER	71,800	75,243	77,724	80,050	81,859	83,324
WALLER	52,538	63,443	75,535	88,736	103,314	119,122
WASHINGTON	36,199	38,516	40,095	41,664	42,884	43,880
GMA 14 TOTAL	**7,840,989**	**8,752,632**	**9,596,046**	**10,466,620**	**11,392,389**	**12,398,182**
STATE TOTAL	**29,683,671**	**33,898,444**	**38,045,103**	**42,273,134**	**46,739,153**	**51,458,748**
GMA 14 PERCENT of STATE TOTAL	**26.4%**	**25.8%**	**25.2%**	**24.8%**	**24.4%**	**24.1%**

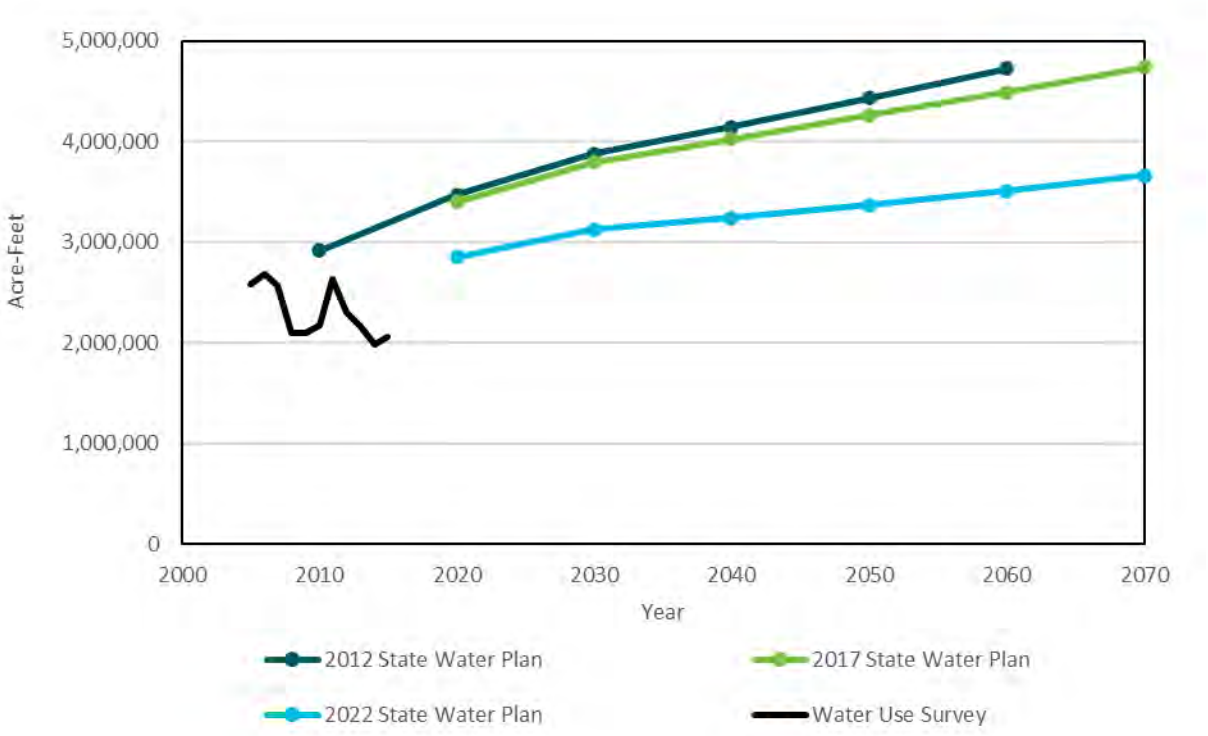

FIGURE 4-4. TOTAL PROJECTED WATER DEMANDS IN GMA 14 UNDER THE 2012, 2017 AND 2022 STATE WATER PLANS.

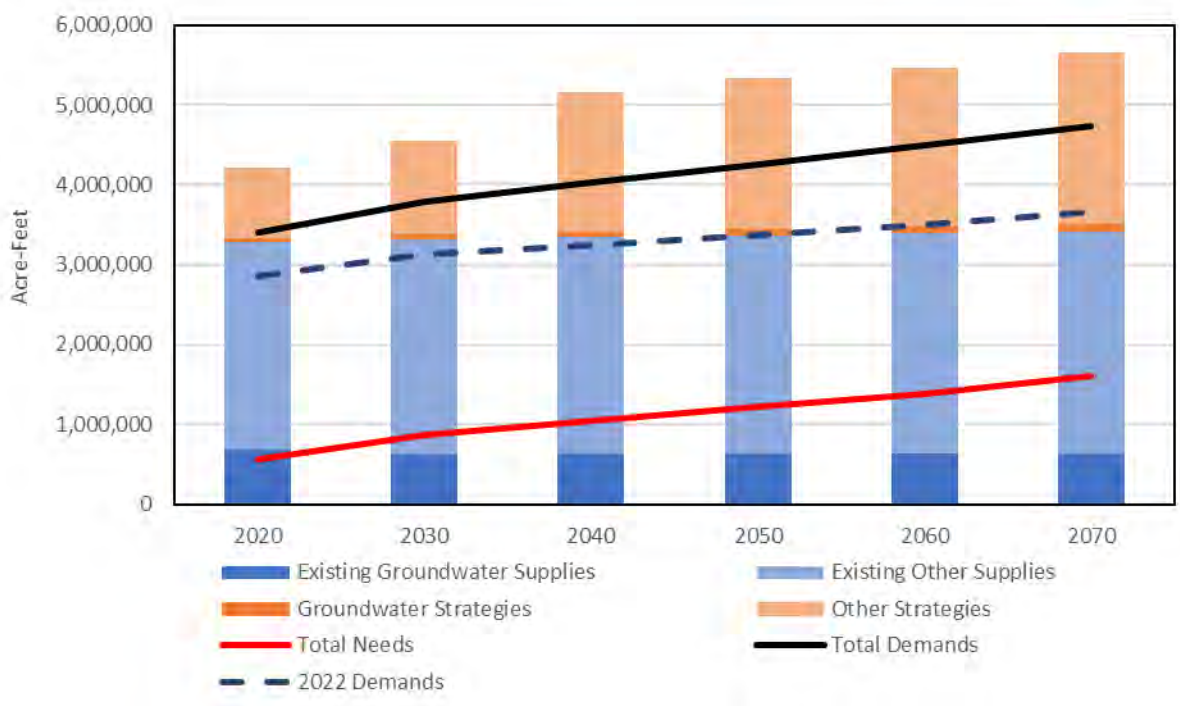

FIGURE 4-5. GMA 14 PROJECTED SUPPLIES AND STRATEGIES COMPARED TO TOTAL NEEDS AND DEMANDS AS REPORTED IN THE 2017 TEXAS STATE WATER PLAN AND DRAFT WATER DEMANDS OF THE 2022 STATE WATER PLAN.

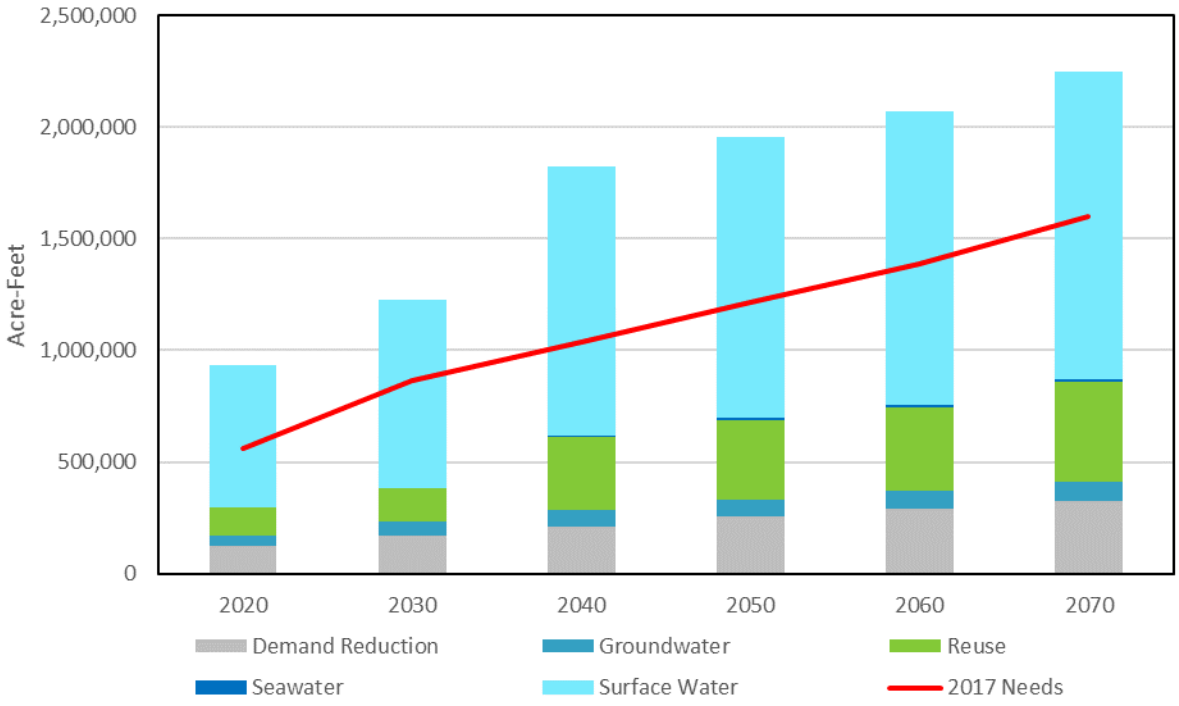

FIGURE 4-6. GMA 14 TOTAL NEEDS AND IDENTIFIED STRATEGIES AS PRESENTED IN THE 2017 STATE WATER PLAN.

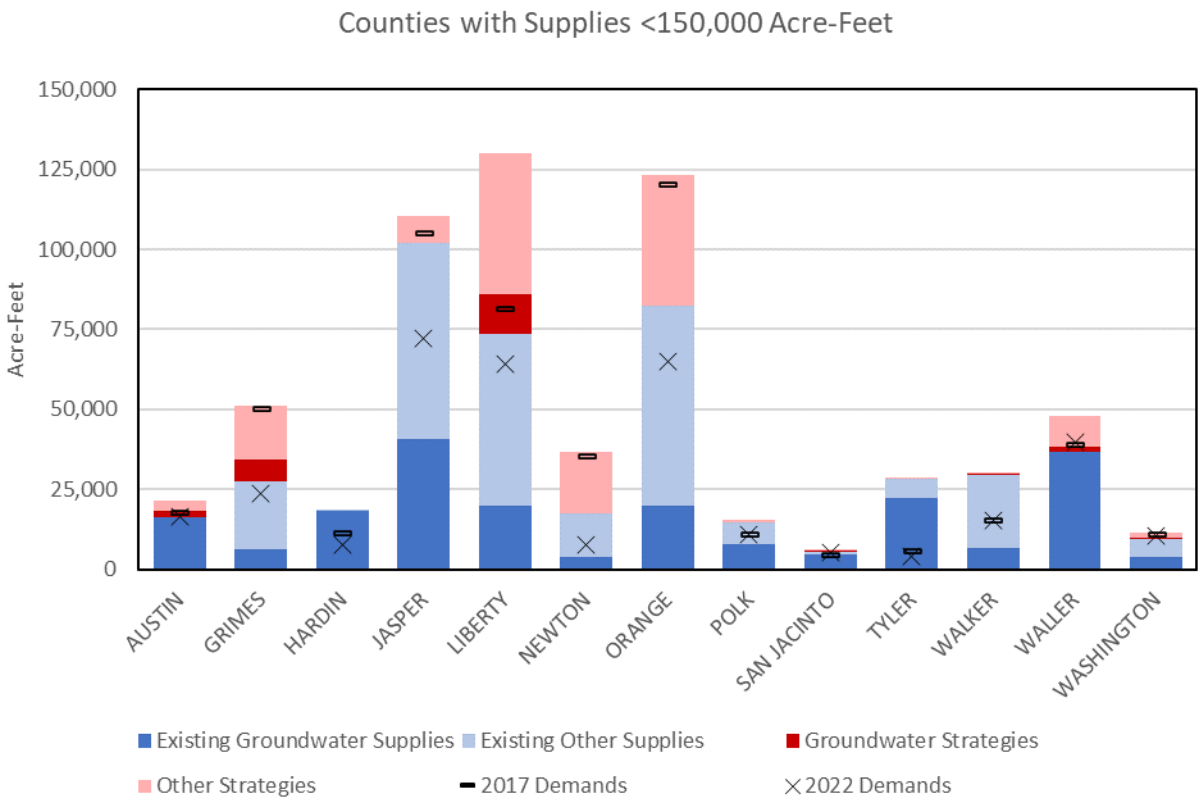

FIGURE 4-7. EXISTING SUPPLIES, STRATEGIES, AND DEMAND FOR COUNTIES WITH LESS THAN 150,000 ACRE-FEET OF TOTAL SUPPLIES.

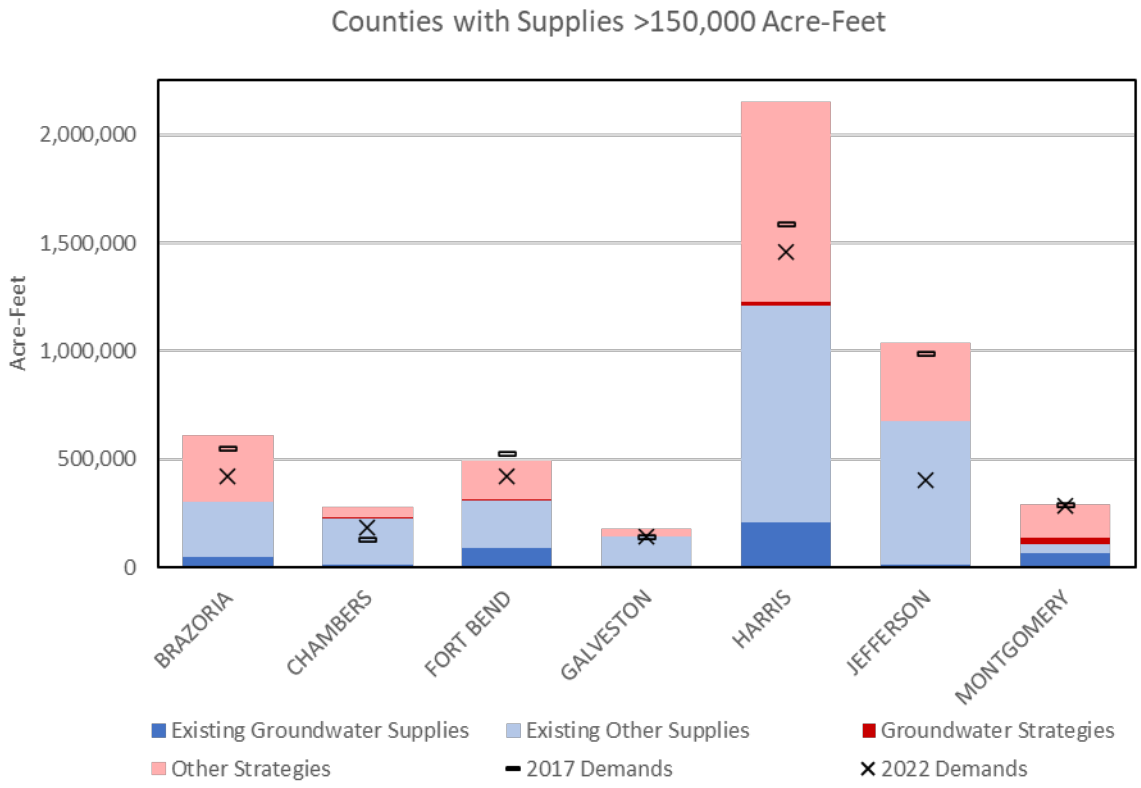

FIGURE 4-8. EXISTING SUPPLIES, STRATEGIES, AND DEMAND FOR COUNTIES WITH MORE THAN 150,000 ACRE-FEET OF TOTAL SUPPLIES.

4.3. HYDROLOGICAL CONDITIONS

Texas Water Code Section 36.108(d)(3) requires District Representatives in a GMA to consider "hydrological conditions, including for each aquifer in the management area the total estimated recoverable storage [TERS] as provided by the executive administrator [of TWDB], and the average annual recharge, inflows, and discharge." As part of the joint planning process, Participants in GMA 14 reviewed and considered estimates of TERS, inflows, recharge, and discharge based on results from the HAGM (Kasmarek, 2012). Estimates of total estimated recoverable storage were provided by the TWDB executive administrator for review and consideration during the joint planning process, as required by statute. Participants reviewed information on hydrological conditions on June 26, 2019, and again as part of the review of all factors considered on February 24, 2021. The presentation and supplementary materials from this meeting are shown in Appendix K.

Figure 4-9 shows a hydrogeologic cross-section of the Gulf Coast Aquifer System through GMA 14. The Chicot Aquifer is the shallowest unit of the Gulf Coast Aquifer System and outcrops (is exposed at land surface) throughout most of GMA 14. The Evangeline Aquifer underlies the Chicot Aquifer. The Chicot and Evangeline aquifers make up the primary source of groundwater for the southeastern half of GMA 14, with a combined thickness ranging from approximately 1,000 feet to over 3,500 feet near the coast. The Burkeville Confining Unit underlies the Evangeline Aquifer and provides hydrogeologic separation between the Evangeline and Jasper aquifers. The Jasper Aquifer is one of the main sources of groundwater for the northwestern half of GMA 14 where it is shallower. In the HAGM (Kasmarek, 2012), portions of the upper Catahoula formation are included in the Jasper Aquifer layer of the model. Figure 4-10 shows the correlation between the stratigraphic and hydrogeologic units of the Gulf Coast Aquifer System.

Texas Administrative Code Rule 356.10 defines the total estimated recoverable storage as "the estimated amount of groundwater within an aquifer that accounts for recoverable storage scenarios that range between 25 percent and 75 percent of the porosity-adjusted aquifer volume." The total estimated recoverable storage values for the Gulf Coast Aquifer were provided by TWDB as GAM Task 13-037 (Wade, Thorkildsen, & Anaya, GAM Task 13-037, 2014) and are shown in Figure 4-11.

Total estimated recoverable storage can be an important indicator of groundwater availability for some aquifers – and is a required consideration for all aquifers – but it is not synonymous with groundwater availability. There are many factors that influence groundwater availability that are not incorporated into the total estimated recoverable storage calculation, such as:

- Aquifer water quality,

- Water levels dropping below pumps,
- Land surface subsidence,
- Degradation of water quality,
- Changes to surface water-groundwater interaction,
- Recharge from precipitation, and
- The practicality and economics of development.

For some unconfined aquifers that are highly transmissible such as the Ogallala Aquifer in the Texas Panhandle, the total estimated recoverable storage can be useful for determining groundwater availability. In aquifers with many clay interbeds that dip toward the coast such as those in GMA 14, the above limitations make interpretation and use of the total estimated recoverable storage for water planning challenging. As calculated, the 25 percent to 75 percent range applied to the total storage represents the approximate fraction of the total storage in each aquifer in GMA 14 that is in the water-producing zones (that is, sands), not what is practically "recoverable" from those zones. Figure 4-12 illustrates this well where many of the intervals in each of the geophysical logs shown are black, indicating clays that are not water producing. For the sandy intervals in each log, the estimated water quality is shown and symbolized by color. The light blue intervals indicate fresh water with a total dissolved solids (TDS) concentration below 1,000 milligrams per liter (mg/L).

In addition to the consideration of total estimated recoverable storage, the GMA 14 District Representatives also considered the water budget for GMA 14 and the water budgets for each county and aquifer within GMA 14, including recharge from land surface, pumping, interaction with surface water features, lateral inflows and outflows, and vertical inflows and outflows to overlying and underlying units. The GMA 14-wide budget for the Gulf Coast Aquifer is shown in Table 4-2. Note in the water budget in Table 4-2 as well as those in Appendix K for the Gulf Coast Aquifer, the recharge, evapotranspiration, and inflows and outflows from streams are all modeled together in the HAGM using the MODFLOW General Head Boundary Package. In GMA 14, the Evangeline Aquifer is the primary aquifer pumped with nearly 450,000 acre-feet per year on average between 2000 and 2009. Most of the recharge and stream inflows are into the Chicot Aquifer – about 554,000 acre-feet per year. There is also significant vertical flow downward from the Chicot Aquifer into the underlying Evangeline Aquifer. The water budgets for each county for each of the aquifers in GMA 14 was considered by the Participants and is shown in Appendix K.

TABLE 4-2. WATER BUDGET FOR THE GULF COAST AQUIFER IN GMA 14.

GMA 14				
Inflow	**Chicot**	**Evangeline**	**Burkeville**	**Jasper**
Recharge/Stream Loss (GHB)	554,080	73,293	20	41,358
Storage	268,814	35,291	3,836	53,877
Leakage Upper Unit	0	416,219	2,188	3,683
Leakage Lower Unit	24,525	4,143	2,403	0
Lateral Flow from other areas	49,224	32,833	8	2,399
Total Inflow	896,643	561,778	8,455	101,317

Outflow	**Chicot**	**Evangeline**	**Burkeville**	**Jasper**
Wells	399,080	449,976	0	64,708
Evapotranspiration/Stream Gain (GHB)	4,459	49,257	17	30,106
Storage	27,655	2,965	606	1,861
Leakage Upper Unit	0	24,525	4,143	2,403
Leakage Lower Unit	416,219	2,188	3,683	0
Lateral Flow from other areas	49,224	32,833	8	2,399
Total Outflow	896,636	561,745	8,457	101,476

All values are average acre-feet per year from 2000 through 2009.

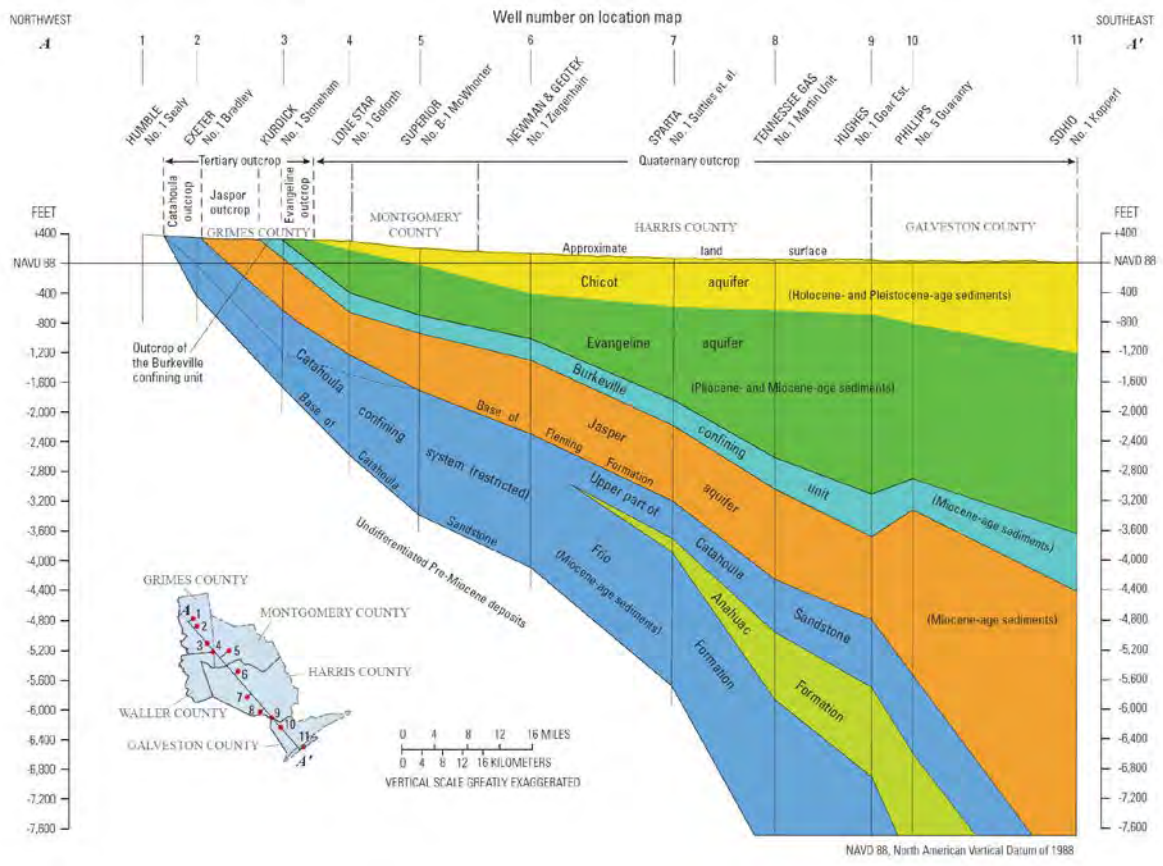

FIGURE 4-9. HYDROGEOLOGIC CROSS-SECTION OF THE GULF COAST AQUIFER SYSTEM IN THE HAGM (KASMAREK, 2012)

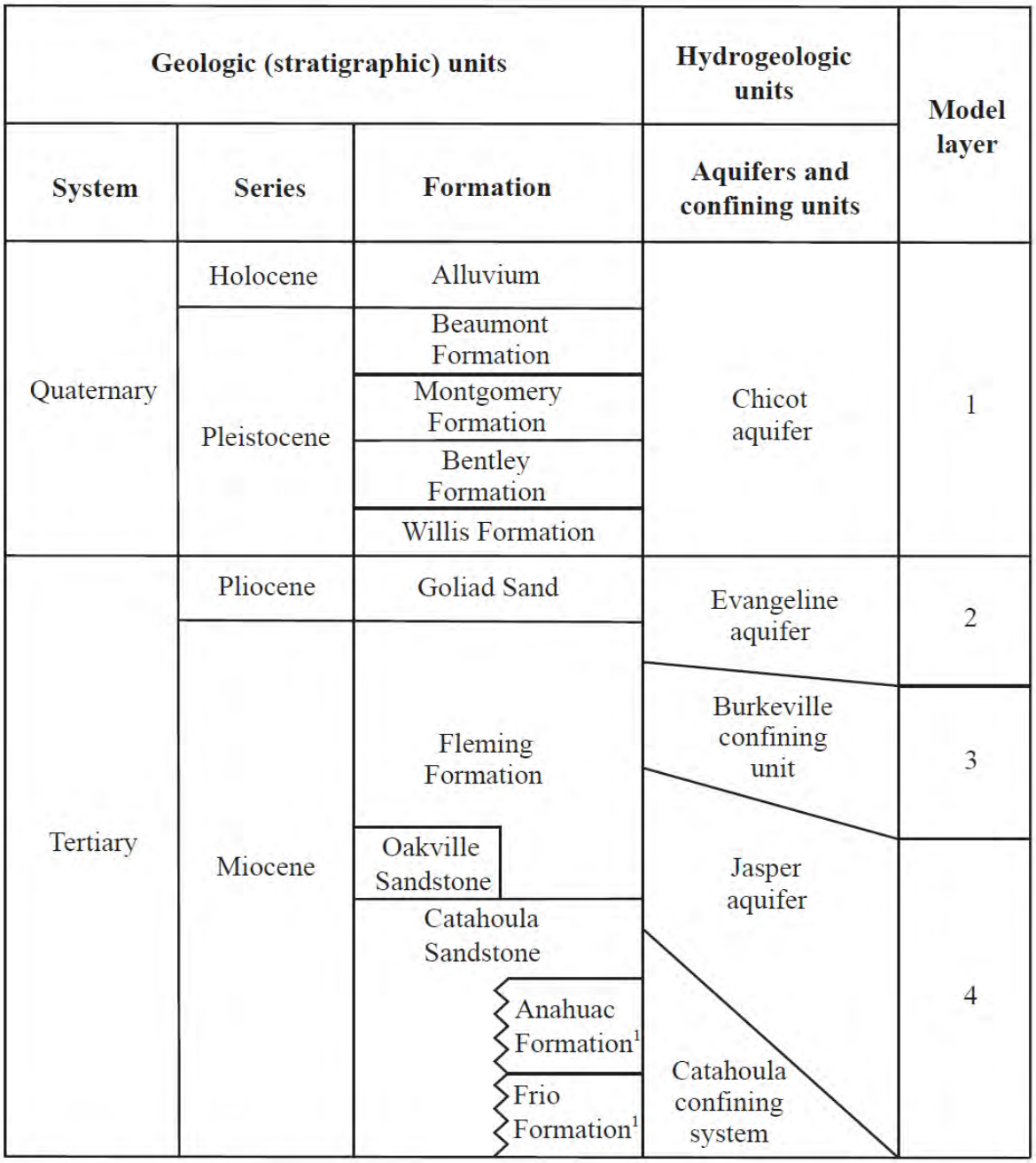

FIGURE 4-10. STRATIGRAPHIC AND HYDROGEOLOGIC UNITS IN THE HAGM (KASMAREK, 2012)

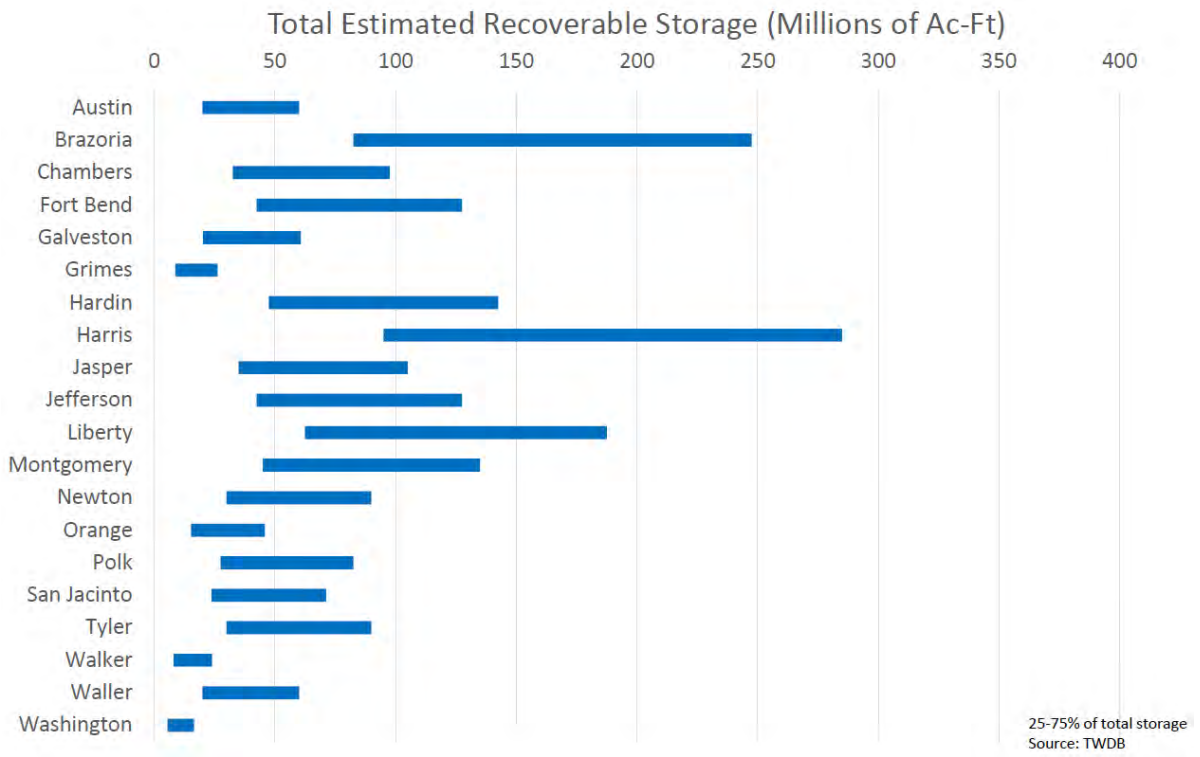

FIGURE 4-11. TOTAL ESTIMATED RECOVERABLE STORAGE FOR THE GULF COAST AQUIFER IN GMA 14 AS PROVIDED BY TWDB (WADE, THORKILDSEN, & ANAYA, GAM TASK 13-037, 2014).

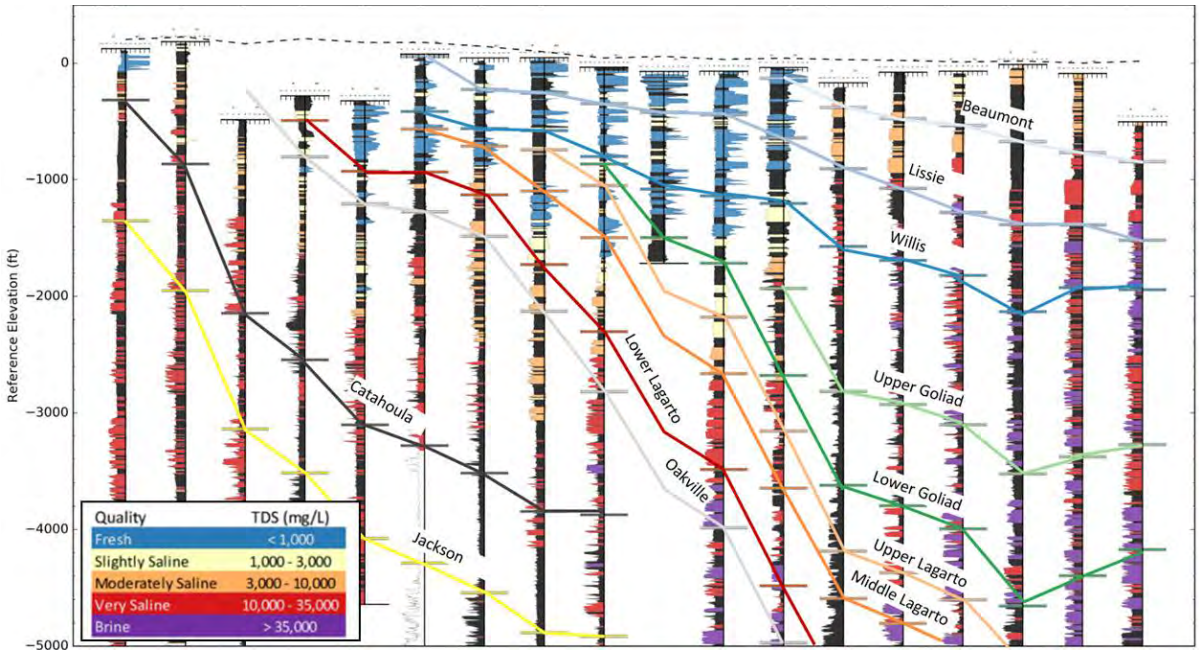

FIGURE 4-12. CROSS-SECTION FROM NORTH TO SOUTH THROUGH TYLER, HARDIN AND JEFFERSON COUNTIES SHOWING WATER QUALITY IN SANDY INTERVALS. BLACK INTERVALS REPRESENT CLAYS. MODIFIED FROM (YOUNG, ET AL., 2016).

4.4. ENVIRONMENTAL IMPACTS

Texas Water Code Section 36.108(d)(4) requires District Representatives in a GMA to consider environmental impacts, including interactions between groundwater and surface water. Unlike the first three factors described above (aquifer uses and conditions, water supply needs and water management strategies, and hydrological conditions), an evaluation of environmental impacts is specific to the adopted DFCs. The Participants in GMA 14 voted to formally consider three potential modeling of DFC scenarios, which are described in Section 2.1 above, before the District Representatives formally proposed and adopted the final DFC statement. For consideration of environmental impacts, the model run labeled "70%-1 ft Run" is consistent with the DFCs proposed for adoption and with the change of "and" to "or" in the DFC statement final adoption. Environmental impacts were reviewed and considered by the Participants on September 16, 2020 and again as part of the review of all factors considered on February 24, 2021. The presentation from this meeting is included in Appendix L.

Consideration of environmental impacts focused on the interaction between groundwater and surface water in GMA 14 and potential changes to this interaction due to the DFCs. Other impacts of DFCs that could be considered "environmental" such as subsidence or faulting are addressed in this report below.

As described in the Hydrological Conditions section above, the HAGM uses the MODFLOW General Head Boundary Package to collectively represent recharge from precipitation, evapotranspiration, outflow to springs, and interaction with surface water features such as creeks, bayous, and rivers. Though these aspects are included together in the same model package, TWDB developed an approach to separate the portion of this interaction that represents outflow to springs and interaction with surface water features from recharge due to precipitation for their use in developing model information for GCD management plans (Wade S. , 2020). In this approach, the U.S. Environmental Protection Agency's RF1 database of streams and waters of the U.S. (U.S. Environmental Protection Agency, 2020) was intersected with the HAGM grid (Texas Water Development Board, 2020). Those model cells that intersect the surface water features in the RF1 dataset are considered stream cells while those that do not are considered non-stream cells.

Following the same approach used by TWDB, stream cells were identified throughout GMA 14 and the MODFLOW General Head Boundary Package budget results were extracted for the model runs representing the three potential DFC statements. Figure 4-13 shows the net change (total inflows minus total outflows) for the stream cells in GMA 14. During the historical/calibration period of the model from 1980 to 2009, all three scenarios are identical as the pumping was not changed. Beginning in 2010 with the general increase in pumping

relative to the historical period, the rate of flow from surface water features into the aquifer increases. For GMA 14 as a whole, the model indicates that flows into the aquifer from surface water features would increase from approximately 100,000 acre-feet per year in 2010 to approximately 215,000 acre-feet per year in 2080 under the run consistent with the adopted DFCs ("70%-1 ft Run"). Figures like Figure 4-13 were prepared, presented to, and considered by the District Representatives in GMA 14. These are shown in Appendix L.

As discussed during the meeting on September 16, 2020, the model results for changes to interaction with surface water hinge on a known limitation of the model inherent with the MODFLOW General Head Boundary Package – that is, that there is an unlimited supply of surface water available as a source for inflows to the groundwater system. For that reason, the results should be used with caution. Despite this limitation, the model results illustrate an important dynamic: increases in pumping can lead to water level declines in aquifer outcrop areas, which can reduce surface water availability by either lessening outflows to surface water or increasing inflows from surface water to the aquifer.

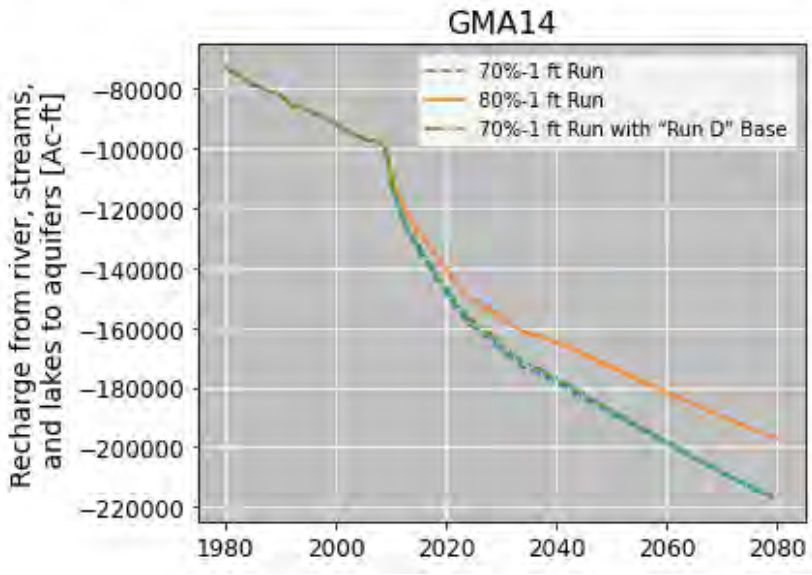

FIGURE 4-13. CHANGES TO GROUNDWATER-SURFACE WATER INTERACTION IN GMA 14 ASSOCIATED WITH DFC OPTIONS CONSIDERED.

4.5. SUBSIDENCE IMPACTS

Texas Water Code Section 36.108(d)(5) requires District Representatives in a GMA to consider the impacts of proposed desired future conditions on subsidence. The Participants considered information on subsidence during many meetings, but formally reviewed subsidence information on July 15, 2020. The presentation from this meeting and supplemental information is provided in Appendix M.

Subsidence occurs when the land surface sinks due to compaction of underlying geologic units (Figure 4-14). Compaction – a decrease in the volume or thinning of the geologic unit – occurs primarily within clay-rich portions of the aquifer. While groundwater wells generally target sandy portions of the Gulf Coast Aquifer, there are considerable clay intervals interspersed throughout the aquifer (see Figure 4-12). While sand grains are large, round, and not very susceptible to compaction; clay grains are small, flat, and much more susceptible to reorientation and compaction. The compaction occurs due to groundwater pumping because the pumping reduces the pressure in the aquifer (as indicated by the water level). This water pressure drop in the sandy intervals of the aquifer propagates to clay-rich portions of the aquifer and reduces the ability of the water to hold open the pore spaces. When this occurs, the flat clay grains can collapse, squeezing out the water and compacting the formation. This compaction is considered permanent because there is no mechanism for reopening the pore spaces between the clay grains once they are closed.

Subsidence is an important consideration in GMA 14 because it is directly caused by pumping of groundwater and can lead to serious impacts at land surface such as flooding, damage to infrastructure, and increased movement along growth faults [(Campbell, Wise, & Bost, 2014) (Jones & Larson, 1975) (Coplin & Galloway, 1999) (Holzschuh, 1991)]. The last of these issues – faulting – is discussed in more detail in Section 4.9.

In GMA 14, subsidence caused by pumping of groundwater has been observed for decades. Figure 4-15 shows a comparison between the simulated subsidence in the HAGM (Kasmarek, 2012) and the measured subsidence (Gabrysch & Neighbors, 2005). In some areas near the Houston Ship Channel as much as 10 feet of subsidence has been observed historically. Over a much broader region covering approximately the southeastern half of Harris County and portions of Galveston County at least 6 feet of subsidence has been observed. As shown in Figure 4-15, many other counties in GMA 14 have also experienced subsidence (for example, Brazoria, Fort Bend, Waller, Montgomery, Chambers, and Jasper counties).

Subsidence in GMA 14 has been monitored in many ways including releveling of National Geodetic Survey benchmarks, Global Positioning System (GPS) subsidence monitoring stations, and remote sensing techniques such as Interferometric Synthetic Aperture Radar (InSAR). The current standard for monitoring subsidence in GMA 14 is the network of GPS

stations shown in Figure 4-16. The stations are clustered around areas of historical subsidence, especially Harris, Galveston, and Fort Bend counties, but stations are also found in many other areas of GMA 14.

Trends in subsidence rates monitored at GPS stations in areas that have reduced groundwater production (e.g., Harris, Galveston, Fort Bend and Montgomery counties) show that as aquifer water levels recover, rates of subsidence slow. Figure 4-17 and Figure 4-18 show this at stations in Fort Bend and Montgomery counties, respectively. Lone Star GCD has noted concerns about reliability of GPS data. *See* Lone Star GCD's Summary Report and Position Paper and Attachment K.

Figure 4-19 shows the modeled additional subsidence from 2009 to 2080 associated with the adopted DFCs. Most of the additional subsidence in Figure 4-19 corresponds with suburban areas surrounding the City of Houston. The modeled additional subsidence is also greatest in the southeastern half of GMA 14 closer to the coast where the Chicot and Evangeline aquifers are predominantly used. Subsidence contours for each county were also developed and are shown in Appendix M.

The Jasper Aquifer, which is more widely used in the northwestern half of GMA 14 farther from the coast, can compact in the HAGM. However, there was very limited data available to inform the Jasper Aquifer compaction properties during model development, so they were set to a low value such that the modeled compaction was minimal (Kasmarek, 2012). This is a known limitation of the HAGM. At the time the HAGM was developed by the U.S. Geological Survey, the focus of the modeling effort was primarily on characterizing subsidence within the subsidence districts. The subsidence districts did not at that point have large volumes of pumping from the Jasper Aquifer and did not anticipate significant further development of the Jasper Aquifer within the districts. For this reason, characterizing the compaction potential of the Jasper Aquifer was not a focus of the model development effort. Though the model was still adopted by TWDB as the "best available science" for the northern portion of the Gulf Coast Aquifer, the compaction results associated with groundwater production from the Jasper Aquifer are considered more uncertain.

Since the HAGM was developed, the susceptibility of the Jasper Aquifer to compaction and its contribution to subsidence has been the subject of considerable debate and additional research (Kelley, Deeds, Young, & Pinkard, 2018). Historically, the monitoring of subsidence and compaction in the Gulf Coast Aquifer System was not designed to isolate the contribution of the Jasper Aquifer. As additional GPS monitoring stations and extensometers that can directly monitor compaction are installed, it is the hope of the GMA 14 District Representatives that the data collected will clarify the extent to which the Jasper Aquifer is susceptible to compaction to inform future groundwater planning efforts. Lone Star GCD is

conducting a subsidence study focused on where compaction may be occurring in the aquifers within Montgomery County and surrounding areas, and its causes. The results of Phase I of the study was provided to the Participants. The results of future phases will be provided as they are completed. *See also* Attachment K to Lone Star GCD's Summary Report and Position titled "Correlation between Land-Surface Movement, Water-Level Change, and Groundwater Production Within Montgomery County and Surrounding Areas. " Similarly, the Houston Advanced Research Center (HARC) convened a Science Advisory Committee to review and analyze research findings describing groundwater resources and subsidence in Montgomery and Harris counties in Southeast Texas. The Phase I findings of the HARC report were presented to the Participants.

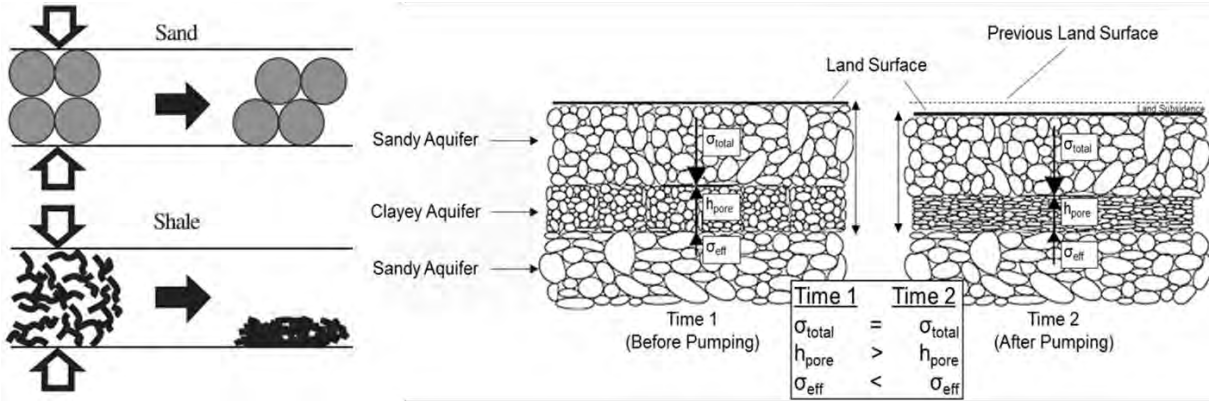

FIGURE 4-14. BASIC CONCEPTS OF SUBSIDENCE.

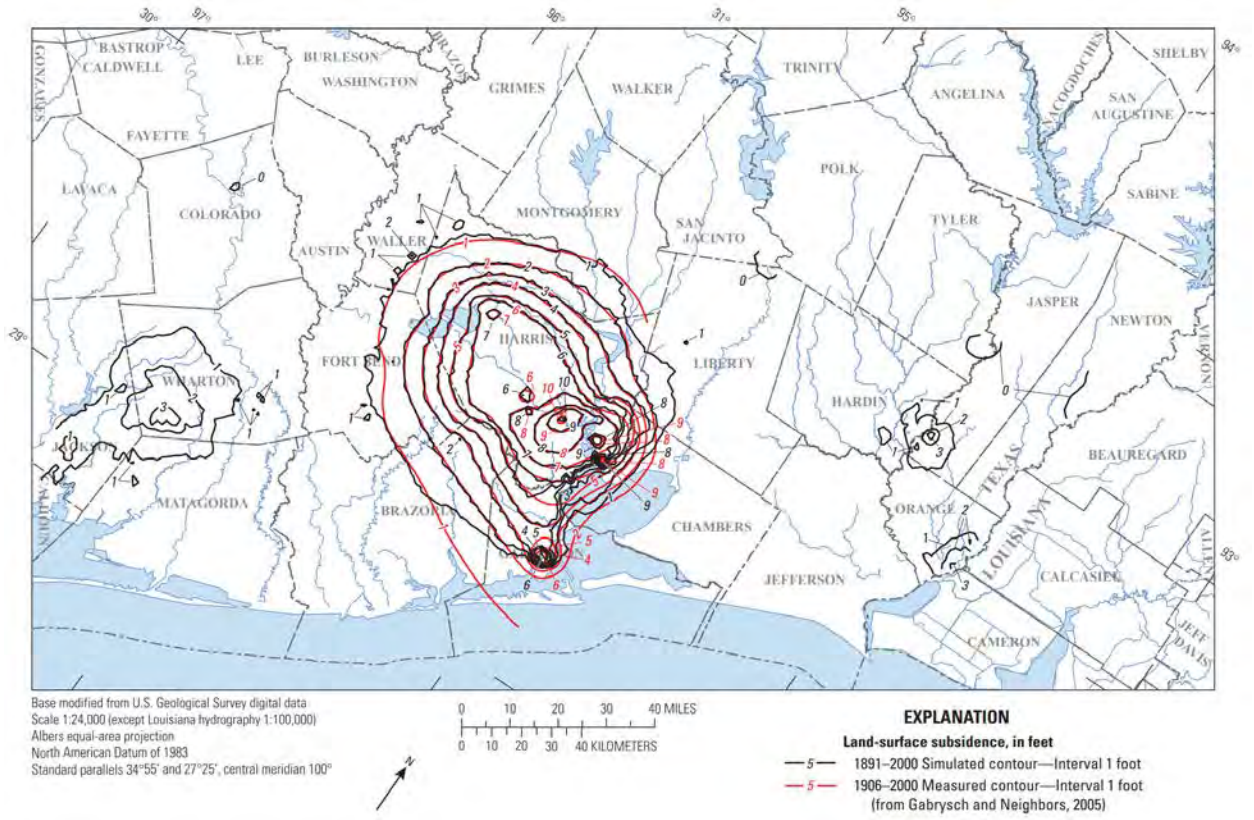

FIGURE 4-15. SIMULATED AND MEASURED SUBSIDENCE IN THE HAGM FROM PRE-DEVELOPMENT TO 2000 (KASMAREK, 2012)

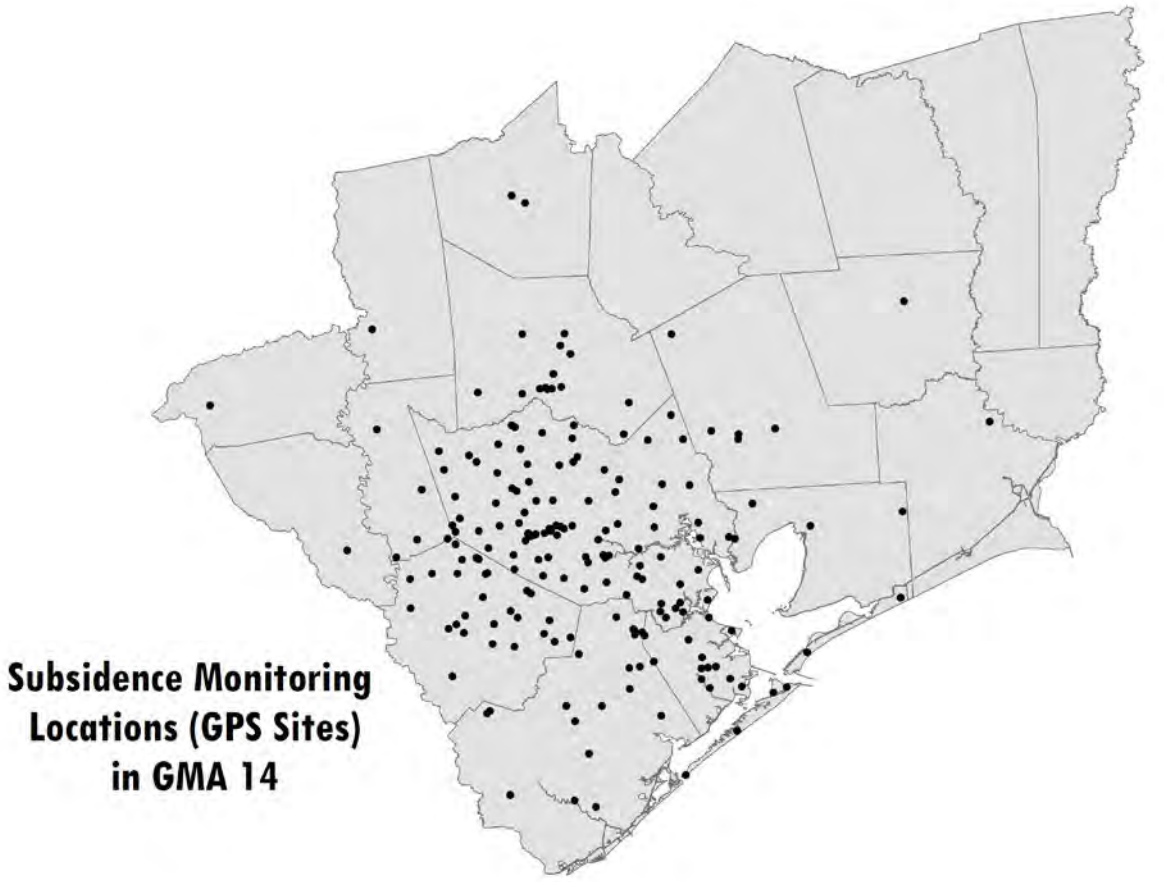

FIGURE 4-16. GPS SUBSIDENCE MONITORING STATIONS IN GMA 14

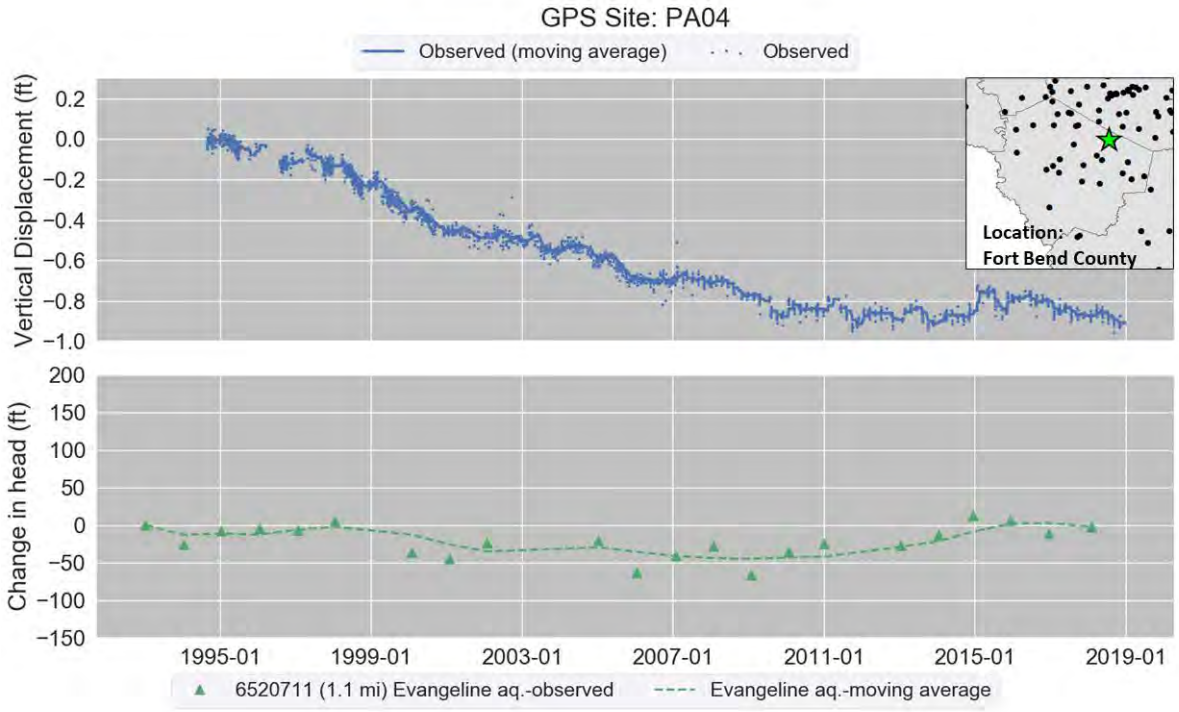

FIGURE 4-17. VERTICAL DISPLACEMENT (FEET) AT GPS STATION PA04 IN FORT BEND COUNTY AND WATER LEVEL CHANGES (FEET) NEARBY AT TWDB STATE WELL NUMBER 6520711.

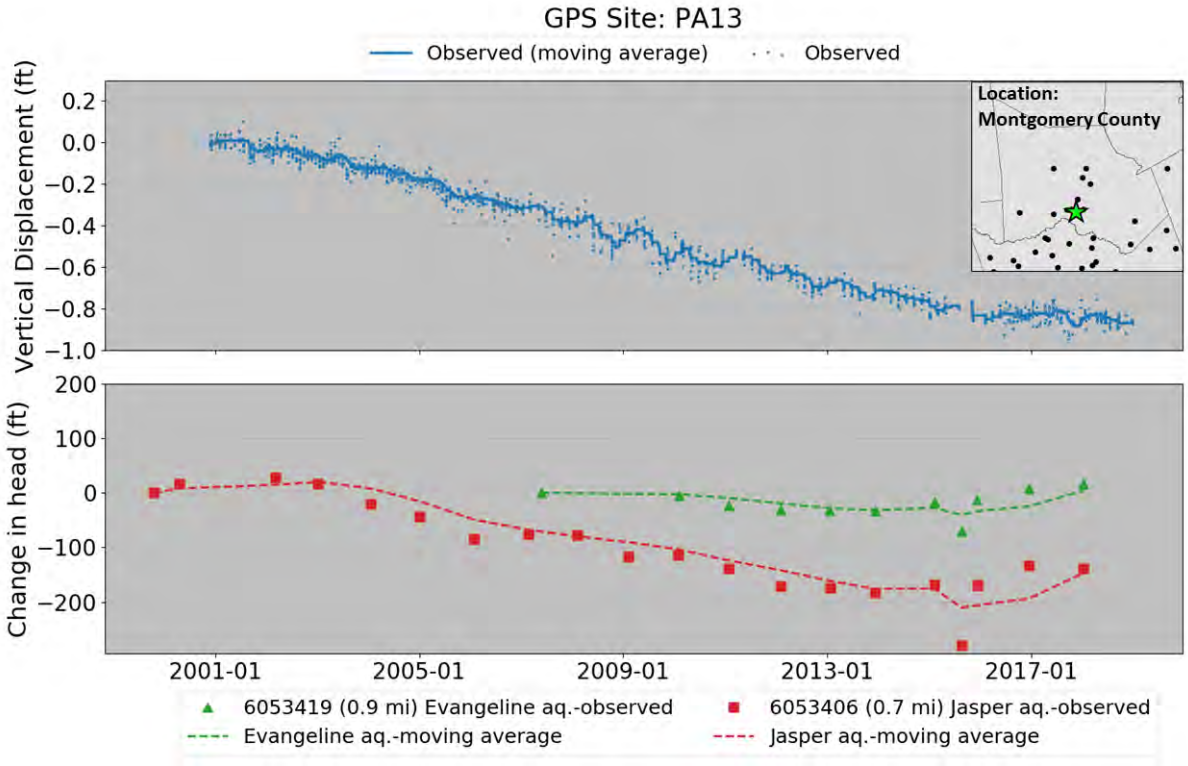

FIGURE 4-18. VERTICAL DISPLACEMENT (FEET) AT GPS STATION PA13 IN MONTGOMERY COUNTY AND WATER LEVEL CHANGES (FEET) NEARBY AT TWDB STATE WELL NUMBERS 6053419 AND 6053406.

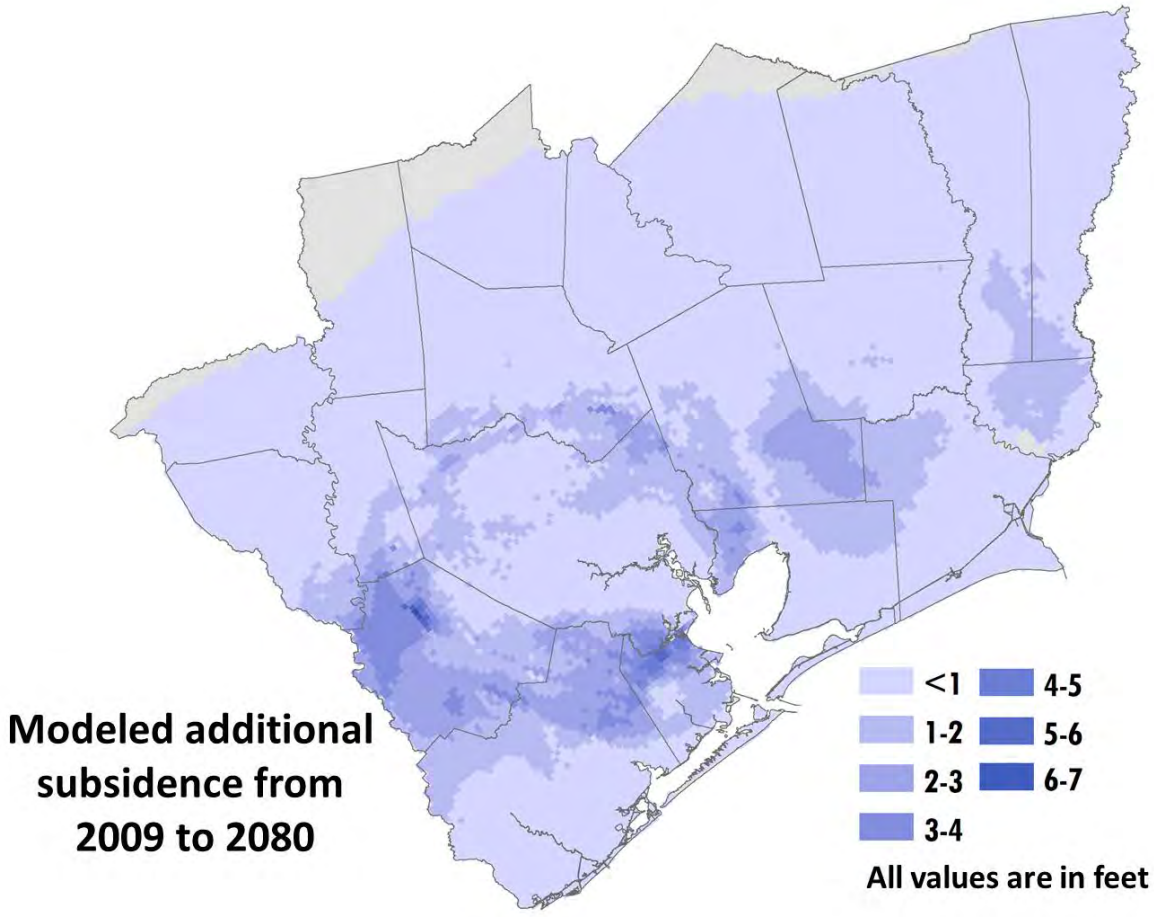

FIGURE 4-19. MODELED ADDITIONAL SUBSIDENCE BETWEEN 2009 AND 2080 ASSOCIATED WITH THE ADOPTED DFCS.

4.6. SOCIOECONOMIC IMPACTS

Texas Water Code Section 36.108(d)(6) requires District Representatives in a GMA to consider socioeconomic impacts reasonably expected to occur due to the proposed desired future conditions for relevant aquifers. The Participants received, reviewed, and considered information on socioeconomic impacts on September 16, 2020 and January 20, 2021. The presentation and supplementary materials from the September 16, 2020 meeting are available in Appendix N. The presentation provided by Ms. Samantha Reiter on behalf of Lone Star GCD is included in Appendix D.

Consideration of socioeconomic impacts as part of water planning in Texas, both at the regional and state level, has been a fundamental element of the planning process dating back to the 1990s. Texas Water Code Section 16.051(a) states that TWDB "shall prepare, develop, formulate, and adopt a comprehensive state water plan that…shall provide for…further economic development." Title 31 of Texas Administrative Code, Section 357.7(4)(A) states, "The executive administrator shall provide available technical assistance to the regional water planning groups, upon request, on water supply and demand analysis, including methods to evaluate the social and economic impacts of not meeting needs." This technical assistance and analysis provided by the executive administrator is the only consistent analysis of socioeconomic impacts available for joint planning. Title 31 of the Texas Administrative Code, Section 357.40(a) states that regional water plans "shall include a quantitative description of the socioeconomic impacts of not meeting the identified water needs pursuant to [Section] 357.33(c) of this title (relating to Needs Analysis: Comparison of Water Supplies and Demands)." This analysis, executed by the executive administrator at TWDB, is performed at the request of the individual regional water planning groups and is based on water supply needs from the regional water plans. This analysis consists of a series of point estimates of 1-year droughts at 10-year intervals. The socioeconomic impacts analysis attempts to measure the impacts if water user groups do not meet their identified water supply needs associated with a drought of record for one year. For this analysis, multiple impacts are examined, including:

- Sales, income, and tax revenue,
- Jobs,
- Population, and
- School enrollment.

Results from this analysis are then incorporated into the final regional water plans and then comprehensively presented in the subsequent state water plan.

As part of the GMA 14 District Representative's considerations of socioeconomic impacts reasonably expected to occur, the analyses provided by TWDB to Brazos G (Ellis, 2019a), Region H (Ellis, 2019b), and the East Texas (Ellis, 2019c) regional water planning groups for the 2021 regional water plans were considered. These reports are included in their entirety in Appendix N.

While the socioeconomic impact analyses developed for regional water planning is quantitative, they do not directly translate to the evaluation of desired future conditions. This is because they are limited to the impacts of unmet needs, influenced by the availability of other supply sources, and do not consider potential negative socioeconomic impacts associated with groundwater production. The District Representatives incorporated the information available from the regional water planning process into consideration of socioeconomic impacts that are not as easily quantified and that balance potential impacts of developing groundwater with potential impacts of not developing groundwater. Potential impacts of developing groundwater include subsidence and associated impacts, lowering pumps and/or deepening wells, potential impacts on water quality, impacts on groundwater production efficiency, and influence on economic growth based on water availability. Potential impacts of not developing groundwater include unmet water supply needs (as quantified for regional water planning), conversion to more expensive water supply alternative(s), and influence on economic growth based on the reliability and diversity of water supplies.

To help inform the evaluation of socioeconomic impacts due to water level declines and the potential need to lower pumps or deepen wells, the Participants reviewed maps of drawdown in the Chicot, Evangeline and Jasper aquifers for each county. These drawdown maps, along with subsidence for each county, are shown in Appendix R.

A representative from the City of Conroe addressed socioeconomic considerations specific to the City of Conroe by evaluating drawdown results from Run D of the Lone Star GCD Strategic Planning Study. Results suggested City of Conroe's wells 1 and 2, the oldest wells, would go dry under expected drawdown impacts and the remaining wells would see minor impacts. Note, the report documents supporting these results were requested, but not received.

The Participants also reviewed a comparison of the modeled available groundwater (MAGs) developed during the 2016 round of joint planning to the potential future modeled available groundwater based on the DFC options considered. This is shown in Figure 4-21. For all counties in GMA 14 except Tyler and Chambers, the adopted DFCs are expected to result in higher MAGs than the 2016 round of joint planning. Note that the subsidence districts (Harris, Galveston, and Fort Bend counties) and the counties in which there are no GCDs do not

implement DFCs although the Texas Water Development Board does calculate MAGs for all counties within a GMA irrespective of whether there is a GCD with jurisdiction in the county.

These counties were included in Figure 4-21, because the pumping associated with the regulatory plans for the subsidence districts was included in the model runs.

To support the evaluation of socioeconomic impacts, Lone Star GCD collected information of base rates, tier levels, administration fees, groundwater reduction plan (GRP) fees, and average household monthly bill from Montgomery County entities. Ms. Reiter provided a presentation that summarized the data collected by Lone Star GCD and emphasized the significant cost differences between surface water and groundwater. According to the analysis presented by Lone Star GCD, the average monthly water bill in Montgomery County for 10,000 gallons of use can range from as little as $19.10 to as much as $114.44. These cost differences are one of the most significant socioeconomic considerations within GMA 14.

The information presented and discussed in this section on the potential socioeconomic impacts of DFCs is by necessity a mix of quantitative and qualitative considerations. No uniform quantitative analysis has been performed by TWDB or any other entity to directly address the socioeconomic impacts of specific DFCs. Any potential socioeconomic impacts that may occur, either positive or negative, will be influenced by the DFCs and the specifics of an individual GCD's regulated community and the regulatory approach taken by that GCD to achieve the DFC.

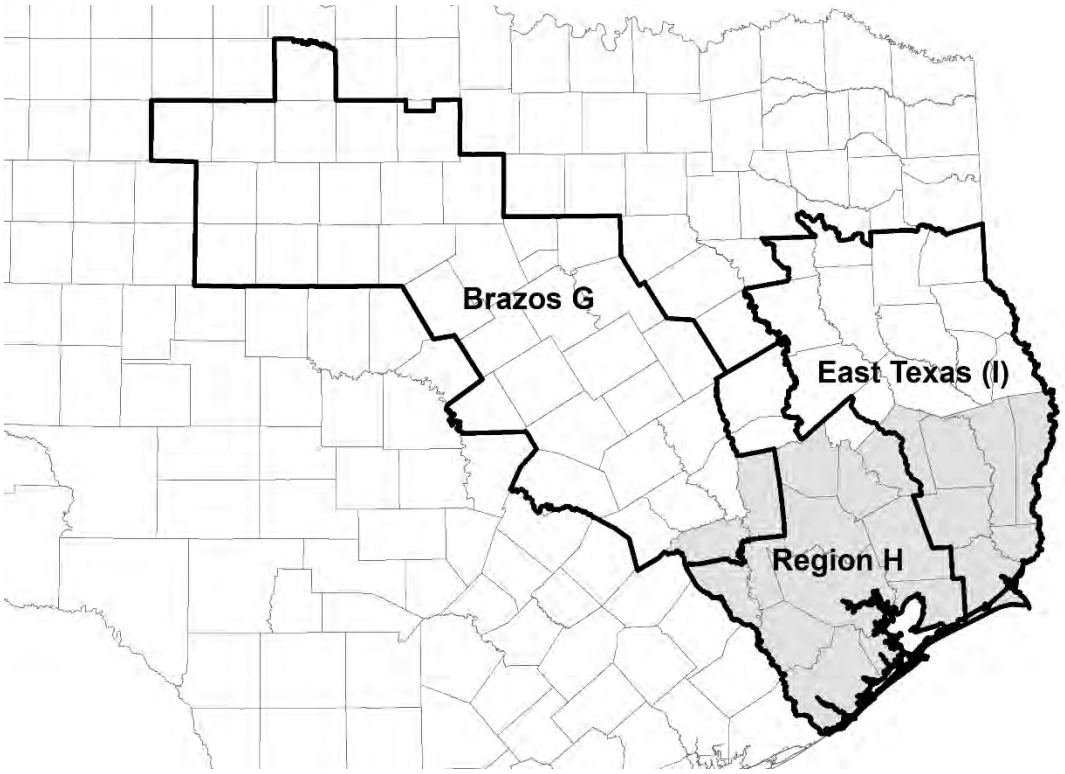

FIGURE 4-20. REGIONAL WATER PLANNING AREAS IN GMA 14

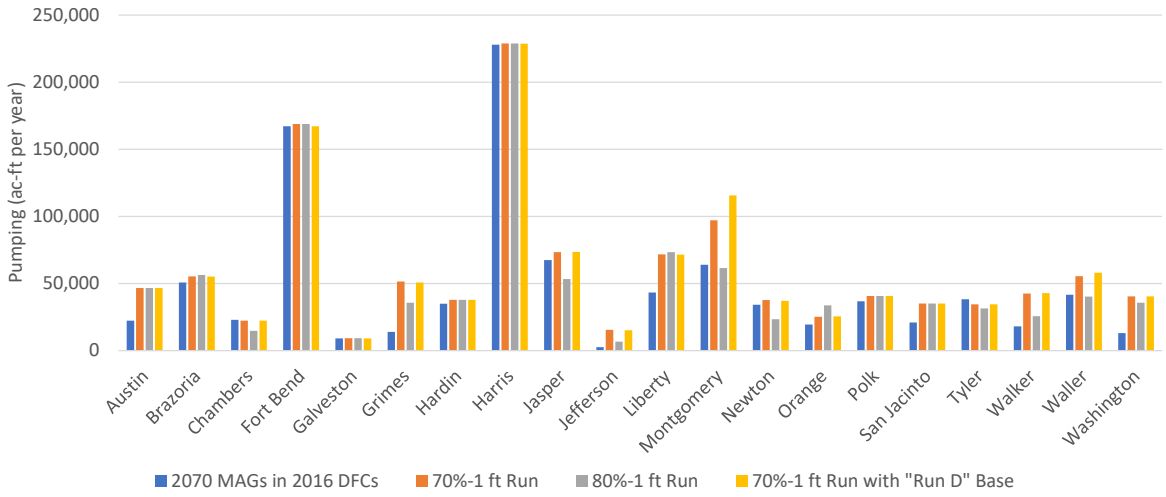

FIGURE 4-21. COMPARISON OF PUMPING ASSOCIATED WITH THE 2016 ROUND OF JOINT PLANNING AND THE THREE SCENARIOS EVALUATED DURING THE CURRENT ROUND OF JOINT PLANNING

4.7. PRIVATE PROPERTY IMPACTS

Texas Water Code Section 36.108(d)(7) requires that District Representatives in a GMA consider the impact of proposed DFCs 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 Texas Water Code Section 36.002. For reference, Texas Water Code Section 36.002 reads as follows:

Sec. 36.002. OWNERSHIP OF GROUNDWATER.

(a) The legislature recognizes that a landowner owns the groundwater below the surface of the landowner's land as real property.

(b) The groundwater ownership and rights described by this section entitle the landowner, including a landowner's lessees, heirs, or assigns, to:

(1) drill for and produce the groundwater below the surface of real property, subject to Subsection (d), without causing waste or malicious drainage of other property or negligently causing subsidence; and

(2) have any other right recognized under common law.

(b-1) The groundwater ownership and rights described by this section do not:

(1) entitle a landowner, including a landowner's lessees, heirs, or assigns, to the right to capture a specific amount of groundwater below the surface of that landowner's land; or

(2) affect the existence of common law defenses or other defenses to liability under the rule of capture.

(c) Nothing in this code shall be construed as granting the authority to deprive or divest a landowner, including a landowner's lessees, heirs, or assigns, of the groundwater ownership and rights described by this section.

(d) This section does not:

(1) prohibit a district from limiting or prohibiting the drilling of a well by a landowner for failure or inability to comply with minimum well spacing or tract size requirements adopted by the district;

(2) affect the ability of a district to regulate groundwater production as authorized under Section 36.113, 36.116, or 36.122 or otherwise under this chapter or a special law governing a district; or

(3) require that a rule adopted by a district allocate to each landowner a proportionate share of available groundwater for production from the aquifer based on the number of acres owned by the landowner.

(e) This section does not affect the ability to regulate groundwater in any manner authorized under:

(1) Chapter 626, Acts of the 73rd Legislature, Regular Session, 1993, for the Edwards Aquifer Authority;
(2) Chapter 8801, Special District Local Laws Code, for the Harris-Galveston Subsidence District; and
(3) Chapter 8834, Special District Local Laws Code, for the Fort Bend Subsidence District.

The Participants formally considered impacts on private property rights during the joint planning meeting on November 18, 2020. The issue of private property rights and impacts, however, was discussed and considered throughout the joint planning process. During the November 18, 2020 meeting, the Participants received and considered four presentations from practicing attorneys with a specialty in water law offering various perspectives on private property rights as they relate to groundwater ownership and management. These presentations are summarized below and described in further detail in the meeting minutes (Appendix D). In addition, the Participants received an introductory presentation highlighting the above-referenced sections of the Texas Water Code, which is included in Appendix O. The public comments received during this meeting are listed below and included in their entirety in Appendix D.

Summary of Public Comments Regarding Private Property

Laura Norton, representing herself, provided comments regarding subsidence, private property rights and flooding issues.

Edward Chapman, President of Grogan's Mill Village Board of Directors, was called upon to provide comment but was not present. He provided written comments regarding groundwater withdrawals, impact of reducing the water table, and surface property rights harm from further subsidence.

Bob Lux, representing himself, provided comments related to long-term impacts of accelerated withdrawals, drought cycles, and the public good of planning for all.

Glenna Sloan, representing herself, provided comments regarding subsidence and excessive withdrawals and planning being frugal.

Ron Kelling, Deputy General Manager of San Jacinto River Authority, provided comments regarding private property rights of producers and those experiencing subsidence, should guidance be given by TWDB on private property rights considerations.

John Yoars, representing himself as a Grogan's Mill Village Resident, provided written comments.

Robert Leilich, President of The Woodlands MUD No. 1, provided comments related to flooding events experienced, subsidence, opposing increased pumping in Montgomery County.

Penny Bradshaw, representing herself, provided comments related to the Texas Water Code, planning balance between producers and conservers.

Simon Sequeira, representing Quadvest, provided comments related to defense of those who cannot defend themselves against the government, defending rights of private business, and the flawed planning system.

James Beach, representing Lone Star GCD, provided written comments related to Lone Star GCD, the balance test, and private property rights.

Presentation by Mr. Marty Jones

The Participants considered a presentation by Mr. Marty Jones of Sprouse Shrader Smith PLLC, which is included as Appendix O. Mr. Jones highlighted that constitutionally protected rights are different than an interest in a right. He stated that, while GCDs have the right to regulate production of groundwater and must consider subsidence in connection with establishing DFCs, landowners own constitutionally protected rights in groundwater. Mr. Jones noted that GCDs usefully function to modify the rule of capture to provide a fair opportunity to produce a fair share of groundwater. He also noted that production limits are important to protect the integrity of the aquifer with recognition of ownership of the groundwater.

Presentation by Mr. Greg Ellis

The Participants considered a presentation by Mr. Greg Ellis of GM Ellis Law Firm PC titled "Property Rights and Groundwater Law." This presentation is included here as Appendix O. Mr. Ellis highlighted the rule of capture and groundwater ownership throughout Texas groundwater law. Mr. Ellis noted that, because groundwater is privately owned, GCDs must protect three distinct groups of property rights owners (1) well owners who have been and continue to produce groundwater; (2) applicants who desire to produce groundwater in the future; and (3) landowners who do not own a well and do not have current plans to drill a well but nevertheless want to protect their groundwater. Mr. Ellis discussed case law relating to private property rights and groundwater including *Elliff v. Texon Drilling Co., Edwards*

Aquifer Authority v. Day, Marrs v. Railroad Commission, Bragg v. Edwards Aquifer Authority, and *Friendswood Development Co. v. Smith-Southwest Industries*.

Presentation by Ms. Stacey Reese

The Participants considered a presentation by Ms. Stacey Reese of Stacey V. Reese Law, PLLC. Ms. Reese highlighted the focus of Chapter 36 of the Texas Water Code on ownership of groundwater. Ms. Reese provided key points for District Representatives to consider property rights within the context of development of DFCs including (1) the different ownership schemes for groundwater and surface water in Texas; (2) regulatory takings claims arise when action goes too far to impair a right, not from regulatory inaction; (3) Chapter 36 of the Texas Water Code does not provide weight to the nine factors, though consistent with Mr. Jones remarks, noted that private property rights is the only factor constitutionally protected; and (4) the adopted DFCs should consider fair share, even though this is a planning effort only, and the management standard impact on GCD implementation of regulation. Ms. Reese noted the difficulty of managing the common reservoir without common rules, highlighting that the GMA consists of areas with GCDs, without GCDs, and with special districts who each have different rules and charges related to groundwater.

Presentation by Mr. Jason Hill

The final presentation considered by the Participants during the November 18, 2020 joint planning meeting was by Mr. Jason Hill of JT Hill & Co. Mr. Hill provided a broad picture of the relationship between the private property rights of a landowner and a neighboring landowner. Mr. Hill noted that every property owner has a neighboring property owner and the individual decisions of one owner has impacts on neighboring property owners. Mr. Hill provided an analogy of noise ordinances and the ability to play music as loud as one chooses, but as soon as the neighbor does the same it can be called in as a violation. Mr. Hill noted the constitutional tension between the obligation to justly compensate a disaffected landowner for a taking and the obligation of the Legislature to create laws to preserve and conserve the natural resources of the State of Texas. According to Mr. Hill, there is no easy answer of how to regulate the resource responsibly with all the factors of conservation, development and all other rights included.

4.8. ACHIEVEMENT FEASIBILITY

Texas Water Code Section 36.108(d)(8) requires District Representatives in a GMA to consider the feasibility of achieving the proposed desired future conditions. This factor was reviewed by the Participants on January 20, 2021, and again as part of the review of all factors considered on February 24, 2021. This presentation and other supporting materials are included in Appendix P.

As part of the joint process, the feasibility of achieving the DFCs generally addresses two elements: physical feasibility and regulatory feasibility. During the TWDB's review of multiple petitions during the first round of DFCs in 2010 and 2011, the evaluation of whether an adopted DFC was physically possible was based on whether the DFC(s) could reasonably be simulated using the groundwater availability model for the aquifer in question. This was a valid approach because if an adopted DFC was not physically possible, then under the physical laws of hydrogeology incorporated into the model, the model would not be able to complete the simulation successfully. As the DFCs adopted by the District Representatives have been incorporated into a simulation of the TWDB accepted HAGM, it has been demonstrated that the DFCs are physically feasible.

Regulatory feasibility refers to whether the DFCs can be achieved using the existing regulatory tools available to GCDs. One example of when DFCs were found through the petition process to not be feasible was for GMA 9 in 2009. In that example, the District Representatives in GMA 9 adopted DFCs that resulted in a modeled available groundwater that was less than the estimated amount of groundwater production from exempt use wells. In that case, the GCDs would not have the regulatory authority to achieve the adopted DFCs. Given the consideration of the factors described in this explanatory report and the expected modeled available groundwater associated with the adopted DFCs, the District Representatives in GMA 14 determined that the adopted DFCs are regulatory feasible.

Bluebonnet GCD performed an evaluation of the proposed DFC and the feasibility of managing to it given the district's existing permitting and regulatory structure. This evaluation was discussed at the April 9, 2021 joint planning meeting and is included in Appendix P. In this evaluation, the Bluebonnet GCD concludes that the proposed DFCs can be feasibly implemented within the existing structures and using the existing monitoring network.

Each GCD can decide its own tracking and monitoring system for achievement of the applicable DFCs developed this round. More generally, Chapter 36 provides the regulatory tools necessary for the five GCDs in GMA 14 to implement pumping limits to achieve the proposed DFCs in 2080.

4.9. Other Information Considered

Texas Water Code 36.108(d)(9) requires District Representatives in a GMA to consider any other information relevant to the specific desired future conditions. As GMA 14 District Representatives worked through the considerations process required in Texas Water Code Section 36.108(d)(1-8), they identified faulting as an item needing additional consideration. The Participants received and considered a presentation on faulting on January 20, 2021. The presentation is available as Appendix Q.

GMA 14 contains many faults, most of which are growth faults aligned parallel to the coast. Figure 4-22 shows mapped faults and salt domes in GMA 14 from several available sources (Huffman, 2004; Shah & Lanning-Rush, 2005; and Khan, Stewart, Otoum, & Chang, 2013) The faulting along the Texas Gulf Coast is aseismic and gravitationally induced. No significant earthquake has occurred on these faults in historic times, though infrastructure damage can occur. Figure 4-23 shows an example of fault damage to a home in West Houston as identified by the Houston Geological Society.

Faults have the capacity to be hydraulic conduits connecting deep and shallow groundwater as well as barriers to horizontal flow. Because of this, faults can be identified in many ways in the field including by hydraulic gradients (that is, water level changes over short distances), pumping tests, abrupt changes in water quality, and groundwater temperature anomalies. Faults can also be identified through remote sensing techniques such as aerial photography, LiDAR and InSAR.

Faulting in GMA 14 has been correlated with groundwater pumping in studies dating back to the 1970s. The number of recognizable faults from aerial photography increased tenfold between 1930 and 1970 in the areas of Greater Houston with the highest rates of subsidence while only moderate faulting was observed elsewhere (Verbeek, Ratzlaff, & Clanton, 1979). Though a natural cause has not been ruled out, the surface fault density in the Houston-Galveston region is far greater than any other area along the Texas Gulf Coast (Engelkemeir & Khan, 2008). The relationship between groundwater pumping and movement of the Long Point Fault was evaluated in Liu and others (2019). This study revealed that the fault was most active in the 1960s and 1970s, which coincided with substantial groundwater withdrawals. The authors also note that fault movement has slowed in areas where water levels have recovered, but movement continues unabated in areas where groundwater levels continue to decline (Liu, et al., 2019).

Figure 4-24 shows rates of movement of the land surface derived from interferometric synthetic aperture radar (InSAR) for an area in northern Harris and southern Montgomery counties (Qu, Lu, Kim, & Zheng, 2019). Water level changes are also shown. Based on the relationship between drawdowns in the Jasper Aquifer and observed land surface movement

rates across faults, the authors conclude that new faulting in the area appears related to groundwater pumping in the Jasper Aquifer (Qu, Lu, Kim, & Zheng, 2019).

Though the analyses included here are not unique to a particular DFC, they highlight that faulting does occur within the Gulf Coast Aquifer System. Faulting is naturally occurring. The Participants considered how faulting can be accelerated by groundwater pumping and associated subsidence. Since faulting can impact both water levels and water quality, it is an important consideration for GMA 14 GCDs when monitoring progress toward achieving DFCs.

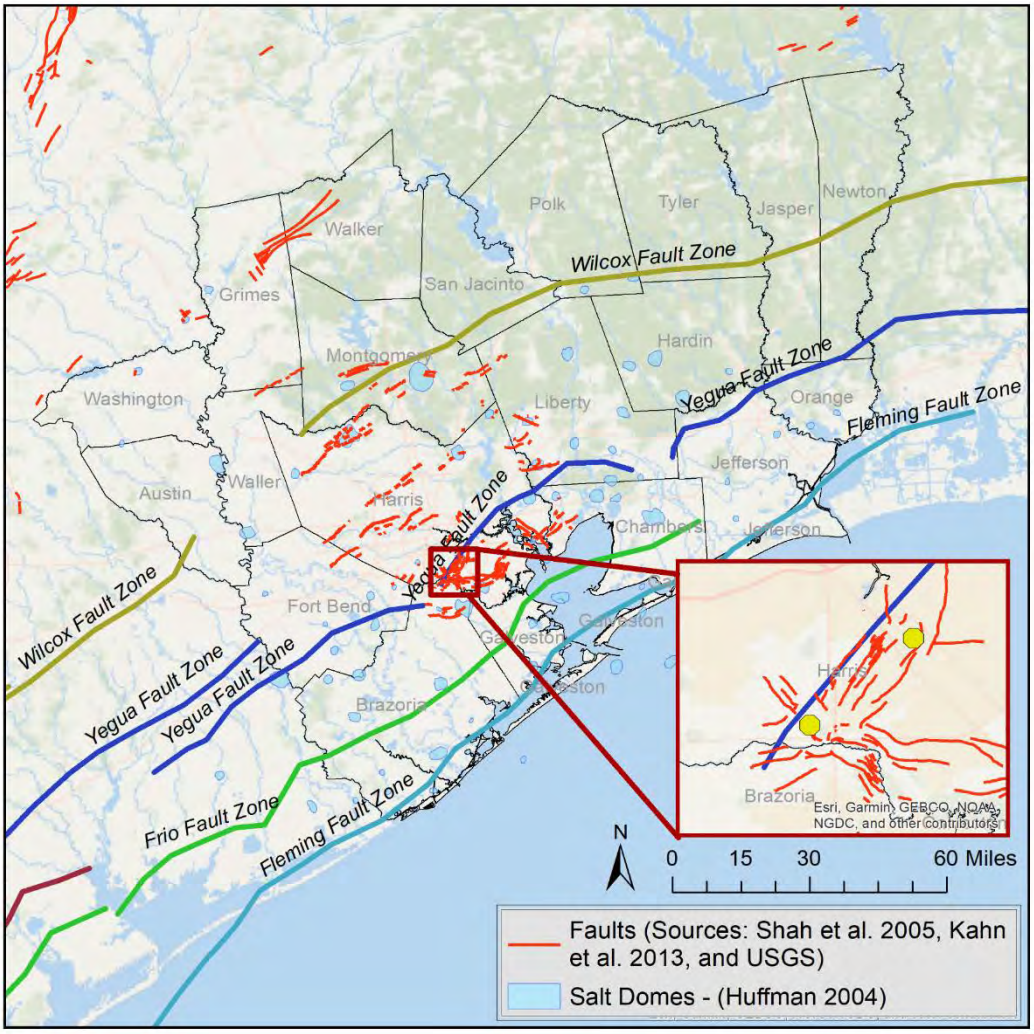

FIGURE 4-22. MAPPED FAULTS IN AND NEAR GMA 14

FIGURE 4-23. EXAMPLE OF FAULT IMPACTS ON A HOME IN GMA 14 (HOUSTON GEOLOGICAL SOCIETY, 2019)

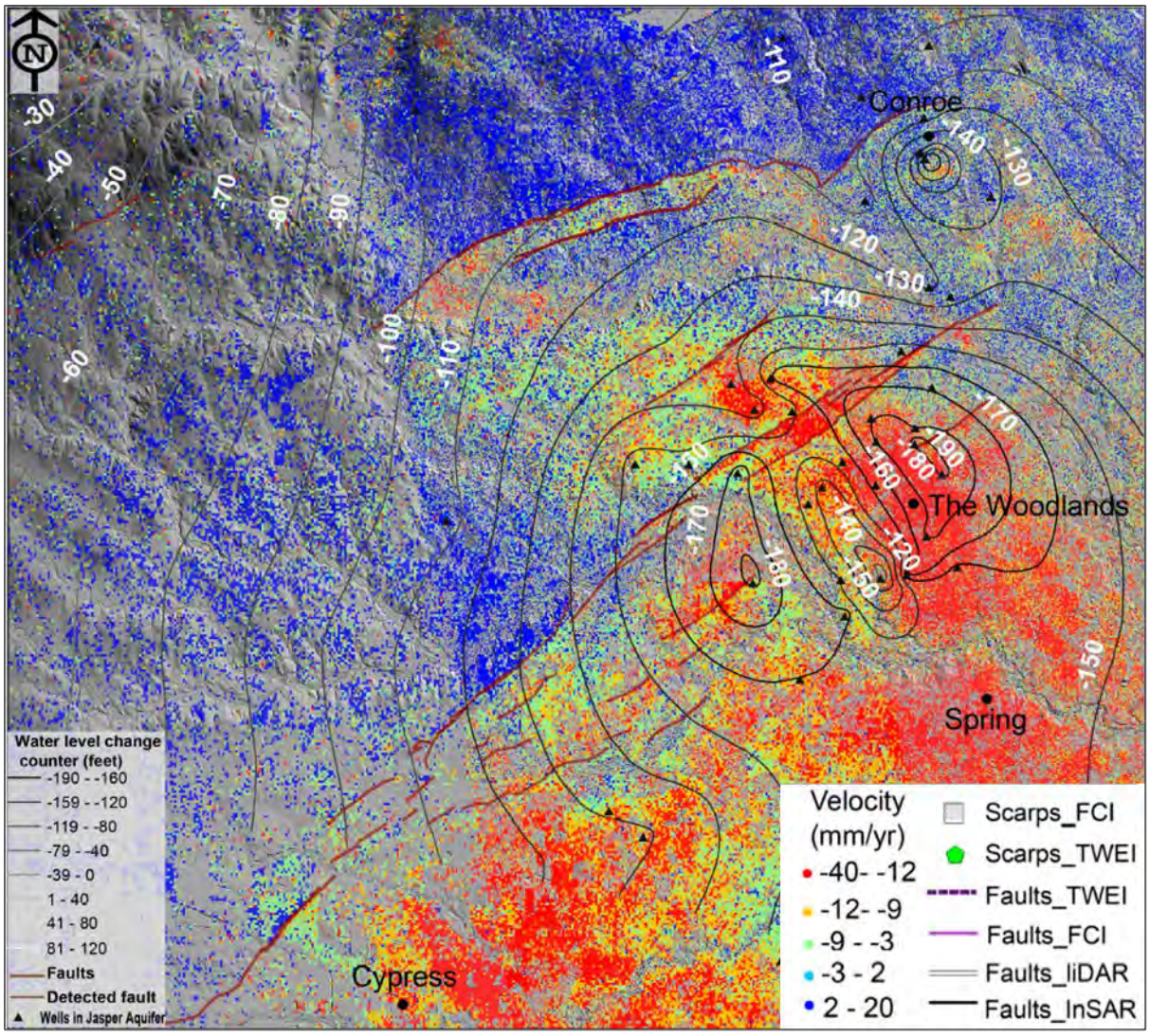

FIGURE 4-24. FAULTS, LAND SURFACE VELOCITY, AND WATER LEVEL CHANGE IN SOUTHERN MONTGOMERY COUNTY AND NORTHERN HARRIS COUNTY (QU, LU, KIM, & ZHENG, 2019)

5. Discussion of Other Desired Future Conditions Considered

As described in the sections above, the Participants considered many studies, modeling evaluation results, and metrics throughout the joint planning process. While some of the required factors for consideration – Aquifer Uses and Conditions, Water Supply Needs and Management Strategies, and Hydrological Conditions – are independent of the specific DFCs under consideration, the other factors are not. For this reason, following consideration of the first three factors and several iterations reviewing model run results, on May 29, 2020, the Participants voted to formally consider three potential DFC scenarios. These three scenarios were:

- In each county in GMA 14, no less than 70 percent median available drawdown remaining and no more than 1.0 feet average additional subsidence between 2009 and 2080.
- In each county in GMA 14, no less than 80 percent median available drawdown remaining and no more than 1.0 feet average additional subsidence between 2009 and 2080.
- In each county in GMA 14, no less than 70 percent median available drawdown remaining and no more than 1.0 feet average additional subsidence between 2009 and 2080 using the "Run D" well file as a base pumping distribution in Montgomery County.

Each of the above scenarios employed the qualifier that, to allow for growth while ensuring the distribution of groundwater availability remains realistic, modeled pumping in each county will not exceed 30,000 acre-feet per year above the maximum projected water demand between 2020 and 2070 in the State Water Plan.

No other DFC options were formally considered and evaluated against the factors listed in Texas Water Code Section 36.108(d)(1-9).

6. Discussion of Other Recommendations Including Public Comments

At each of the meetings held by the GMA 14 District Representatives, the public was invited to provide comments on the proceedings and recommendations on DFCs. These comments regularly included discussion of private property rights, subsidence, socioeconomic impacts and other factors of concern to individuals and entities within GMA 14. These comments are included in the meeting documentation presented in Appendix D.

In addition, each of the GMA 14 Districts held public hearings and collected public comments following proposal of the DFCs. The majority of the comments received by each District related to the DFCs in Lone Star GCD. Each District developed a summary report of comments received. These summary reports as well as the comments are included in Appendix C.

Throughout the joint planning process, public comments addressed and informed the consideration of factors and balancing test underlying the development of DFCs.

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Victoria County Groundwater Conservation District

THE STATE OF TEXAS
VICTORIA COUNTY

The Board of Directors of the Victoria County Groundwater Conservation District convened a meeting at the Dr. Pattie Dodson Health Center, 2805 N. Navarro St., Room 108, Victoria, Victoria County, Texas, 77901 on July 21, 2023, at 9:00 AM.

Meeting Attendance:

Precinct 1:	Mr. Jerry Hroch, Vice President	Absent
Precinct 2:	Mr. Thurman Clements, Jr., Director	Present
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Present
Precinct 4:	Mr. Mark Meek, President	Absent
At Large:	Mr. Kenneth Eller, Director	Present
General Manager:	Mr. Timothy Andruss	Present
Legal Counsel:	Mr. James Allison	Present

Agenda Items -

1. Call the meeting to order and welcome guests.

Meeting Discussion: Mr. Clements called the meeting to order at 9:00 AM.

Board Action: None.

2. Receive public comments.

Meeting Discussion: None.

Board Action: None.

3. Consideration of and possible action on matters related to Groundwater Management including efforts and activities of the District regarding permitting, complaints, investigations, violations, and enforcement cases associated with permitting.

3.0 – Report regarding Groundwater Management

Meeting Discussion: Mr. Andruss explained as of July 19, 2023, staff had initiated 4 permitting request cases, identified 23 pending permitting request cases, issued 4 production permits, identified 5 active investigations and 7 open enforcement cases.

Board Action: None.

3.1 – Groundwater Production Reporting for CY2022

Meeting Discussion: Mr. Andruss explained as of July 19, 2023, staff have processed 225 groundwater production reports for calendar year 2022 reporting 13,804 acre-feet of groundwater production.

Board Action: None.

3.2 – Production Permit Renewals for FY2023

Meeting Discussion: Mr. Andruss presented a table identifying the production permits identified with the database of the district as expiring before July 2024.

If administratively complete applications are submitted by the permittees prior to the permit expiration date (July 31, 2023), the associated permitting request cases will be presented to the board for consideration at the meeting scheduled for October 20, 2023.

As of July 19, 2023, staff had received administratively complete application seeking the renewal of production permit scheduled to expire in July 2023:
1. PRC-20230719-01 - ARP-20230718-01 - Christ the King Lutheran Church - Pending
2. PRC-20230719-02 - ARP-20230622-01 - Vulcan Materials Company - Pending
3. PRC-20230719-03 - ARP-20230314-01 - Daryl Smith - Falcon Lease Operating - Pending

The submitted production permit renewal applications are administratively complete and satisfy the requirements related to production permit renewal established by RULE 4.4: GENERAL PROCEDURES RELATED TO RENEWAL AND AMENDMENT OF PERMITS of the rules of the District.

Board Action: Mr. Eller moved to authorize the general manager to issue production permit renewals for the permits associated with the following renewal requests in accordance with the Rules of the District:
1. PRC-20230719-01 - ARP-20230718-01 - Christ the King Lutheran Church
2. PRC-20230719-02 - ARP-20230622-01 - Vulcan Materials Company
3. PRC-20230719-03 - ARP-20230314-01 - Daryl Smith - Falcon Lease Operating
Mr. Clements seconded the motion. The motion passed unanimously.

3.3 – Deep-Saline Production Permit Monitoring

Meeting Discussion: Mr. Andruss explained on May 10, 2023, staff notified Dr. Young of Intera of its authorization for him to develop a memorandum by July 19, 2023, for the purposes of identifying any inappropriate or unnecessary monitoring requirements for safeguarding the groundwater resources within Victoria County and identifying opportunities for cooperation (e.g., cost-sharing and cooperative arrangements regarding monitoring activities) between VCGCD and POV, if any, that align with the goals and objectives of the district by conducting:

1. a review the monitoring requirements established within the Rules of the District related to Deep-Saline Production Permits, and
2. a review of the recommendation developed by you in the report related to improving the monitoring network dated November 2022.

Mr. Andruss explained that Dr. Young submitted the requested memorandum in which he concludes that he did not identify any inappropriate or unnecessary requirements related to deep-saline production permits and identified several opportunities for cooperation with producers and clarification to the rules of the district.

Board Action: None.

3.4 – Enforcement Hearing re ECV-202230424-02 – Keep Bloomington Beautiful – Failure to Report Groundwater Production CY2022

Meeting Discussion: Mr. Andruss explained on April 21, 2023, the Board passed a motion to:
1. find that Keep Bloomington Beautiful violated RULE 4.2: REPORTING REQUIREMENT RELATED TO NON-EXEMPTUSE WELLS of the Rules of the District related to well GW-000720 unless evidence to the contrary or evidence of relevant extenuating circumstances is submitted to the District;
2. authorize the General Manager to initiate an enforcement case regarding the violation;
3. set a $100.00 penalty for the violation per RULE 11.10: PENALTIES of the Rules of the District; and
4. offer to settle the violation if Keep Bloomington Beautiful consents to the following conditions:
    1. acknowledges the violation by June 30, 2023;
    2. pays a settlement fee of $0.00 by June 30, 2023; and
    3. submits a administratively complete groundwater production report for calendar year 2022 by June 30, 2023.

In response to the action taken by the Board, staff recorded violation ECV-20230424-02

On May 2, 2023, staff attempted to provide notice of violation ECV-20230424-02 to Keep Bloomington Beautiful by certified mail (CMRRR 7021 0350 0000 2790 7614).

On June 1, 2023, staff attempted to provide notice of violation ECV-20230424-02 to Keep Bloomington Beautiful by certified mail (CMRRR 7021 0350 0000 2790 7669).

On July 6, 2023, the staff attempted to provide notice of this enforcement hearing and intent to seek authorization to pursue enforcement of the rules by filing a civil suit against Keep Bloomington Beautiful at the next regularly scheduled meeting of

the board of directors to Keep Bloomington Beautiful by certified mail (CMRRR 7021 0350 0000 2790 9205).

On July 14, 2023, Mr. Allison, Legal Counsel for the District, provided a draft enforcement order regarding this matter. If adopted, the order would record the finds of the board including:
1. impose penalties established by the Board,
2. cancel any permits associated with the subject well,
3. prohibit production from the subject well until a production permit were reinstated,
4. order staff to seal the subject well to prevent further production, and
5. instruct Legal Counsel to file suit if necessary to enforce the order.

Board Action: Mr. Clements moved to open the enforcement hearing and recess the hearing until the next regularly scheduled meeting in October 2023. Mr. Eller seconded the motion. The motion passed unanimously.

3.5 – Enforcement Hearing re ECV-20230424-04 – Freedom Ventures of Victoria LLC – Failure to Report Groundwater Production CY2022

Meeting Discussion: Mr. Andruss explained on April 21, 2023, the Board passed a motion to:
1. find that Freedom Ventures of Victoria LLC. violated RULE 4.2: REPORTING REQUIREMENT RELATED TO NON-EXEMPTUSE WELLS of the Rules of the District related to well NW-000824 unless evidence to the contrary or evidence of relevant extenuating circumstances is submitted to the District;
2. authorize the General Manager to initiate an enforcement case regarding the violation;
3. set a $100.00 penalty for the violation per RULE 11.10: PENALTIES of the Rules of the District; and
4. offer to settle the violation if Freedom Ventures of Victoria LLC. consents to the following conditions:
    1. acknowledges the violation by June 30, 2023;
    2. pays a settlement fee of $0.00 by June 30, 2023; and
    3. submits a administratively complete groundwater production report for calendar year 2022 by June 30, 2023.

In response to the action taken by the Board, staff recorded violation ECV-20230424-04.

On May 2, 2023, staff attempted to provide notice of violation ECV-20230424-04 to Freedom Ventures of Victoria LLC. by certified mail (CMRRR 7021 0350 0000 2790 8000).

On June 1, 2023, staff attempted to provide notice of violation ECV-20230424-04 to Freedom Ventures of Victoria LLC. by certified mail (CMRRR 7021 0350 0000 2790 7645).

On July 6, 2023, the staff attempted to provide notice of this enforcement hearing and intent to seek authorization to pursue enforcement of the rules by filing a civil suit against Freedom Ventures of Victoria LLC. at the next regularly scheduled meeting of the board of directors to Freedom Ventures of Victoria LLC. by certified mail (CMRRR 7021 0350 0000 2790 9212).

On July 14, 2023, Mr. Allison, Legal Counsel for the District, provided a draft enforcement order regarding this matter. If adopted, the order would record the finds of the board including:
1. impose penalties established by the Board,
2. cancel any permits associated with the subject well,
3. prohibit production from the subject well until a production permit were reinstated,
4. order staff to seal the subject well to prevent further production, and
5. instruct Legal Counsel to file suit if necessary to enforce the order.

Board Action: Mr. Clements moved to open the enforcement hearing and recess the hearing until the next regularly scheduled meeting in October 2023. Mr. Eller seconded the motion. The motion passed unanimously.

3.6 – Enforcement Hearing re ECV-20230424-10 – The Dam Company LLC – Failure to Report Groundwater Production CY2022

Meeting Discussion: Mr. Andruss explained on April 21, 2023, the Board passed a motion to:
1. find that The Dam Company LLC. violated RULE 4.2: REPORTING REQUIREMENT RELATED TO NON-EXEMPTUSE WELLS of the Rules of the District related to well GW-000557 unless evidence to the contrary or evidence of relevant extenuating circumstances is submitted to the District;
2. authorize the General Manager to initiate an enforcement case regarding the violation;
3. set a $250.00 penalty for the violation per RULE 11.10: PENALTIES of the Rules of the District; and
4. offer to settle the violation if The Dam Company LLC. consents to the following conditions:
    1. acknowledges the violation by June 30, 2023;
    2. pays a settlement fee of $20.00 by June 30, 2023; and
    3. submits a administratively complete groundwater production report for calendar year 2022 by June 30, 2023.

In response to the action taken by the Board, staff recorded violation ECV-20230424-10

On May 2, 2023, staff attempted to provide notice of violation ECV-20230424-10 to The Dam Company LLC. by certified mail (CMRRR 7021 0350 0000 2790 7966).

On June 1, 2023, staff attempted to provide notice of violation ECV-20230424-10 to The Dam Company LLC. by certified mail (CMRRR 7021 0350 0000 2790 8949).

On July 6, 2023, the staff attempted to provide notice of this enforcement hearing and intent to seek authorization to pursue enforcement of the rules by filing a civil suit against Roywell Services Inc. at the next regularly scheduled meeting of the board of directors to Roywell Services Inc. by certified mail (CMRRR 7021 0350 0000 2790 9229).

On July 14, 2023, Mr. Allison, Legal Counsel for the District, provided a draft enforcement order regarding this matter. If adopted, the order would record the finds of the board including:
1. impose penalties established by the Board,
2. cancel any permits associated with the subject well,
3. prohibit production from the subject well until a production permit were reinstated,
4. order staff to seal the subject well to prevent further production, and
5. instruct Legal Counsel to file suit if necessary to enforce the order.

Board Action: Mr. Clements moved to open the enforcement hearing and recess the hearing until the next regularly scheduled meeting in October 2023. Mr. Eller seconded the motion. The motion passed unanimously.

3.7 – Enforcement Hearing re ECV-20230424-12 – Bloomington ISD – Failure to Report Groundwater Production CY2022

Meeting Discussion: Mr. Andruss explained on April 21, 2023, the Board passed a motion to:
1. find that Bloomington ISD violated RULE 4.2: REPORTING REQUIREMENT RELATED TO NON-EXEMPTUSE WELLS of the Rules of the District related to well GW-000768, GW-000773, NW-000332 unless evidence to the contrary or evidence of relevant extenuating circumstances is submitted to the District;
2. authorize the General Manager to initiate an enforcement case regarding the violation;
3. set a $250.00 penalty for the violation per RULE 11.10: PENALTIES of the Rules of the District; and
4. offer to settle the violation if Bloomington ISD consents to the following conditions:
    1. acknowledges the violation by June 30, 2023;
    2. pays a settlement fee of $20.00 by June 30, 2023; and
    3. submits a administratively complete groundwater production report for calendar year 2022 by June 30, 2023.

In response to the action taken by the Board, staff recorded violation ECV-20230424-12

On May 2, 2023, staff attempted to provide notice of violation ECV-20230424-12 to Bloomington ISD by certified mail (CMRRR 7021 0350 0000 2790 7942).

On June 1, 2023, staff attempted to provide notice of violation ECV-20230424-12 to Bloomington ISD by certified mail (CMRRR 7021 0350 0000 2790 8956).

On July 5, 2023, the staff attempted to provide notice of this enforcement hearing and intent to seek authorization to pursue enforcement of the rules by filing a civil suit against Bloomington IDS at the next regularly scheduled meeting of the board of directors to Bloomington ISD by certified mail (CMRRR 7021 0350 0000 2790 9236).

On July 14, 2023, Mr. Allison, Legal Counsel for the District, provided a draft enforcement order regarding this matter. If adopted, the order would record the finds of the board including:
1. cancel any permits associated with the subject well,
2. prohibit production from the subject well until a production permit were reinstated,
3. order staff to seal the subject well to prevent further production, and
4. instruct Legal Counsel to file suit if necessary to enforce the order.

On July 18, 2023, Bloomington ISD acknowledged the violation, paid the settlement fee of $20.00; and submitted administratively complete groundwater production reports for calendar year 2022.

Board Action: Mr. Clements moved to open the enforcement hearing, close the enforcement hearing with no public comment, and designate the enforcement case ECV-20230424-12 resolved. Mr. Eller seconded the motion. The motion passed unanimously.

3.8 – Enforcement Hearing re ECV-20230424-13 – Rebecca L. Schroeder Muschalek – Failure to Report Groundwater Production CY2022

Meeting Discussion: Mr. Andruss explained on April 21, 2023, the Board passed a motion to:
1. find that Rebecca L. Schroeder Muschalek violated RULE 4.2: REPORTING REQUIREMENT RELATED TO NON-EXEMPTUSE WELLS of the Rules of the District related to well GW-000563 unless evidence to the contrary or evidence of relevant extenuating circumstances is submitted to the District;
2. authorize the General Manager to initiate an enforcement case regarding the violation;
3. set a $250.00 penalty for the violation per RULE 11.10: PENALTIES of the Rules of the District; and
4. offer to settle the violation if Rebecca L. Schroeder Muschalek consents to the following conditions:
    1. acknowledges the violation by June 30, 2023;
    2. pays a settlement fee of $20.00 by June 30, 2023; and

3. submits an administratively complete groundwater production report for calendar year 2022 by June 30, 2023.

In response to the action taken by the Board, staff recorded violation ECV-20230424-13

On May 2, 2023, staff attempted to provide notice of violation ECV-20230424-13 to Rebecca L. Schroeder Muschalek by certified mail (CMRRR 7021 0350 0000 2790 7935).

On June 1, 2023, staff attempted to provide notice of violation ECV-20230424-13 to Rebecca L. Schroeder Muschalek by certified mail (CMRRR 7021 0350 0000 2790 8963).

On July 6, 2023, the staff attempted to provide notice of this enforcement hearing and intent to seek authorization to pursue enforcement of the rules by filing a civil suit against Rebecca L. Schroeder Muschalek at the next regularly scheduled meeting of the board of directors to Rebecca L. Schroeder Muschalek by certified mail (CMRRR 7021 0350 0000 2790 9182).

On July 14, 2023, Mr. Allison, Legal Counsel for the District, provided a draft enforcement order regarding this matter. If adopted, the order would record the finds of the board including:
1. impose penalties established by the Board,
2. cancel any permits associated with the subject well,
3. prohibit production from the subject well until a production permit were reinstated,
4. order staff to seal the subject well to prevent further production, and
5. instruct Legal Counsel to file suit if necessary to enforce the order.

Board Action: Mr. Clements moved to open the enforcement hearing and recess the hearing until the next regularly scheduled meeting in October 2023. Mr. Eller seconded the motion. The motion passed unanimously.

3.9 – Enforcement Hearing re ECV-20230424-14 – VISD Mission Valley Elementary – Failure to Report Groundwater Production CY2022

Meeting Discussion: Mr. Andruss explained on April 21, 2023, the Board passed a motion to:
1. find that VISD Mission Valley Elementary violated RULE 4.2: REPORTING REQUIREMENT RELATED TO NON-EXEMPTUSE WELLS of the Rules of the District related to well GW-000693 unless evidence to the contrary or evidence of relevant extenuating circumstances is submitted to the District;
2. authorize the General Manager to initiate an enforcement case regarding the violation;
3. set a $250.00 penalty for the violation per RULE 11.10: PENALTIES of the Rules of the District; and

4. offer to settle the violation if VISD Mission Valley Elementary consents to the following conditions:

1. acknowledges the violation by June 30, 2023;
2. pays a settlement fee of $20.00 by June 30, 2023; and
3. submits a administratively complete groundwater production report for calendar year 2022 by June 30, 2023.

In response to the action taken by the Board, staff recorded violation ECV-20230424-14

On May 2, 2023, staff attempted to provide notice of violation ECV-20230424-14 to VISD Mission Valley Elementary by certified mail (CMRRR 7021 0350 0000 2790 8055).

On May 23, 2023, Mission Valley ISD provided the following response to the district regarding the 1st NOV Letter for violation ECV-20230424-14.

On June 1, 2023, staff attempted to provide notice of violation ECV-20230424-14 to VISD Mission Valley Elementary by certified mail (CMRRR 7021 0350 0000 2790 8970).

On July 6, 2023, the staff attempted to provide notice of this enforcement hearing and intent to seek authorization to pursue enforcement of the rules by filing a civil suit against VISD Mission Valley Elementary at the next regularly scheduled meeting of the board of directors to VISD Mission Valley Elementary by certified mail (CMRRR 7021 0350 0000 2790 9250).

On July 13, 2023, Mr. Dan Davidson of VISD provided the following response to the district regarding the notice of need to file suit Letter for violation ECV-20230424-14.

On July 14, 2023, Mr. Allison, Legal Counsel for the District, provided a draft enforcement order regarding this matter. If adopted, the order would record the finds of the board including:

1. cancel any permits associated with the subject well,
2. prohibit production from the subject well until a production permit were reinstated,
3. order staff to seal the subject well to prevent further production, and
4. instruct Legal Counsel to file suit if necessary to enforce the order.

Board Action: Mr. Clements moved to open the enforcement hearing, close the enforcement hearing with no public comment, and designate the enforcement case ECV-20230424-12 resolved. Mr. Eller seconded the motion. The motion passed unanimously.

3.10 – Investigation INV-20221012.1537 related to Failures to Obtain Production Permits

Meeting Discussion: Mr. Andruss explained on October 12, 2022, staff initiated an investigation to gather information regarding active utilities within Victoria County that obtain water from groundwater-based public water systems that do not have valid groundwater production permits issued by the District.

As of July 18, 2023, staff had an open investigation related to groundwater management associated with 16 entities that had not submitted administratively complete permitting applications. The entities are:

1. Brentwood Subdivision
2. Victoria County WCID 2
3. Devereux Foundation
4. Linden Hill Motel
5. Nursery ISD Elementary School
6. VISD Mission Valley Elementary
7. Coleto Water
8. Arenosa Creek Estates
9. 7-Eleven Stores 36525
10. 7-Eleven Store 36551H
11. H2O Systems Plus
12. North Victoria Utilities
13. Patriot RV Park
14. Dollar General Store 16658
15. The Barn
16. Smitty's Foodmart

The relevant provisions of the rules of the district associated with the investigations are:

- RULE 3.1: GENERAL POLICIES RELATED TO REGISTRATION OF WELLS, WELL FIELDS, AND WELL SYSTEMS

3. The well owner or authorized agent of a grandfathered non-exempt-use well within the boundary of the district shall apply for the registration of the grandfathered non-exempt-use well prior to operating the subject well for non-exempt use.

- RULE 4.1: GENERAL POLICIES RELATED TO PERMITS

15. No person shall operate a well to produce groundwater to be used for any purpose other than those uses defined as exempt use prior to obtaining a production permit from the district unless the subject well satisfies the definition of an original exempt-use grandfathered well or an original exempt-use non-grandfathered well.

- RULE 11.2: GENERAL POLICIES RELATED VIOLATIONS

5. Any person that produces groundwater from a well for non-exempt uses in any amount without a valid production permit authorizing the groundwater production violates the rules of the district.

6. Any person that produces groundwater from a well for non-exempt uses for any purpose of use not authorized by production permits associated with well violates the rules of the district.

10. Any person that engages in an activity that requires a permit from the district under the rules of the district prior to receiving such permit violates the rules of the district.

In each instance, staff have attempted to contact representatives of the entities to notify the entity of the permitting requirements of the District and attempt to assist the entities with submitting production permit applications since January 2023.

Board Action: Mr. Eller moved to instruct the general manager attempt to notify potential violators of future consideration of enforcement order by with fines of $2,000.00. Mr. Clements seconded the motion. The motion passed unanimously.

4. Consideration of and possible action on matters related to groundwater protection including complaints, investigations, violations, and enforcement cases related to groundwater contamination and waste.

4.0 – Report regarding Groundwater Protection

Meeting Discussion: Mr. Andruss explained as of July 18, 2023, staff had recorded 46 well inspections since October 1, 2022. Well inspections are scheduled to be completed in connection with PRJ-20236100.01 - Well Inspections for FY2023 (MG2:O1) - Active.

As of July 18, 2023, staff had 2 active investigations regarding potential contamination of groundwater:
1. INV-20180730.0800 - Potential Contamination of Groundwater on FM 236 and Weber Rd - Active;
2. INV-20220328.0813 - Potential Contamination of Groundwater at Smitty's Food Mart Inez - Active.

Board Action: None.

5. Consideration of and possible action on matters related to groundwater monitoring.

5.0 – Report regarding Groundwater Monitoring

Meeting Discussion: Mr. Andruss explained according to the National Integrated Drought Information System, the U.S. Drought Monitor (USDM) is updated each Thursday to show the location and intensity of drought across the country using a five-category system, from Abnormally Dry (D0) conditions to Exceptional Drought (D4). The USDM is a joint effort of the National Drought Mitigation Center, USDA, and NOAA.

The U.S. Drought Monitor (https://www.drought.gov/states/texas/county/victoria) indicates that 100% of Victoria County was experiencing abnormally dry conditions while 0% of Victoria County was experiencing drought as of July 18, 2023.

Drought condition information related to the district and the surrounding region of Texas collected from the Water Data for Texas website (https://www.waterdatafortexas.org/drought/) indicates that the entire area of Victoria County is experiencing abnormally dry conditions as of July 18, 2023.

Board Action: None.

5.1 – Groundwater Level Measurements for Calendar Year 2022

Meeting Discussion: Mr. Andruss staff have collected water level measurements from 45 wells during year 2022.

Generally, the depth to water in monitored wells has decreased from year 2021 to year 2022 by 1.5 feet and decreased from year 2000 to year 2022 by 6.13 feet.

Board Action: None.

5.2 – Groundwater Quality Measurements for Calendar Year 2022

Meeting Discussion: Mr. Andruss explained staff have collected water quality measurements from 23 wells during year 2022.

Generally, the conductivity measurement (a measure of the mineralization of the water) in monitored wells has decreased in year 2022 compared to the historic maximum and historic average, -434 µmhos/cm and -146 µmhos/cm respectively, for those wells with measurements collected before year 2022.

Board Action: None.

5.3 – WellIntell Service for Continuous Aquifer Monitoring

Meeting Discussion: Mr. Andruss explained on June 21, 2023, staff participated in a virtual meeting with representatives of WellIntel (Dawna Urlakis, Director of Business Development and Charles Dunning) in connection with project PRJ-20234100.03 - Continuous Water Level Monitoring for FY2023 (MG7:O1) - Active for the purposes of learning more about products (water level sensor and telemetry equipment) and services (analytics dashboard) offered by WellIntel. The WellIntel offerings could potentially improve the monitoring program of the district by 1) increasing the amount of data collected regarding water levels and water quality in terms of measurement frequency (continuous measurements versus synoptic/ad hoc measurements) with the use of the WellIntel Water Level Sensor, 2) increasing

operational efficiency by reducing data processing labor and transportation costs associate with monitoring efforts (e.g., eliminate post-processing of sensor data, reducing travel cost to well sites, etc.), and 3) increasing access and use of monitoring data for assessing aquifer conditions and regulatory compliance with permitting. A two-year pilot project with 4 monitoring wells is estimated to cost $23,500 in Year 1 and $2,500 in Year 2 for an estimated total of $26,000. Integration of 3rd party instruments would result in additional costs.

Board Action: Mr. Clements moved to authorize the general manager to budget for and execute a two-year pilot project in FY2024 with 4 monitoring wells within the district at a cost not exceeding $35.000.00. Mr. Eller seconded the motion. The motion passed unanimously.

5.4 – Intera Proposal for Update of Water Level Assessment Report

Meeting Discussion: Mr. Andruss explained on July 14, 2023, Dr. Young of Intera submitted a proposal to Victoria County GCD to apply geostatistical techniques to interpret measured 2022 water level in Calhoun County GCD, Refugio GCD, Texana GCD and Victoria County GCD. The proposed work will expand the analysis of measured water levels performed by Young and others (2021) [Application of Geostatistical Techniques to Quantify Changes in Water Levels] and INTERA (2022) [memorandum :Application of Geostatistical Techniques to Interpret Measured 2021 Water Levels, dated June 29, 2022] to include measured water levels in 2022.

The cost for performing the completing the work is $15,000. The project will be fixed priced. The presentations and the memorandum will be completed by December 4, 2023. The memorandum will be similar in its content and figures to the INTERA (2022) memorandum that provided an analysis of the 2021 water level data.

The proposal will be presented to the boards of Refugio GCD, Victoria GCD, and Calhoun County GCD with a recommendation to approve the proposal and share in the costs equally at a fixed cost of $3,750.00.

Board Action: Mr. Eller moved to approve the proposal and share in the costs equally at a fixed cost of $3,750.00. Mr. Clements seconded the motion. The motion passed unanimously.

6. Consideration of and possible action on matters related to groundwater conservation.

6.0 – Report regarding Groundwater Conservation

Meeting Discussion: Mr. Andruss on April 21, 2023, the board authorized the expenditure of up to $5,000.00 for sponsorship of field trips by 4th and 5th grade

students from Victoria County to the Wetland Education Center located in the INVISTA Victoria Plant Wetland for the purposes of promoting water conservation.

On May 5, 2023, staff notified Victoria ISD, Bloomington ISD, Nursery ISD, and Industrial ISD of the sponsorship opportunity.

On May 23, 2023, staff notified Faith Academy 539, Nazareth Academy Catholic Schools, Northside Baptist School, Our Lady of Victory Catholic School, Trinity Episcopal School, and Victoria Christian School of the sponsorship opportunity.

On May 10, 2023, the District awarded a $1,000.00 sponsorship to Ms. Kaylee Armstrong of VISD for 141 4th and 5th grade students from Schorlemmer Elementary to participate in a field trip to Invista Victoria Plant Wetlands on September 7 and 8, 2023.

On May 23, 2023, the District awarded a $1,000.00 sponsorship to Ms. Jennifer Wheeler of VISD for 75 5th grade students from Smith STEM Academy to participate in a field trip to Invista Victoria Plant Wetlands on September 14, 2023.

On May 24, 2023, the District received an application requesting $337.50 sponsorship for 35 elementary students from Nursery Elementary School to participate in a field trip to Invista Victoria Plant Wetlands during September 20, 2023.

On June 1, 2023, the District awarded a $871.52 sponsorship to Ms. Brook Miller of VISD for 132 elementary students from Torres Elementary School to participate in a field trip to Invista Victoria Plant Wetlands on September 28 and 29, 2023.

Board Action: None.

6.1 – Proposal regarding Conservation and Teacher Professional Development

Meeting Discussion: Mr. Andruss explained on July 5, 2023, staff concluded efforts to revise the preliminary proposal submitted by Professors Teresa LeSage-Clements and Dmitri Sobolev on behalf of UHV for continuing the conservation promotion project complete in previous years. A final proposal was developed that includes cooperation between UHV, VISD, and the District. On July17, 2023, Mr. John Snyder of Wetland Educator with VISD expressed his support for the proposal.

The revised proposal seeks to extend and expand the cooperative efforts between the UHV, VISD, and the District to promote water conservation through a project to deliver professional development to teachers of middle school science classes and teachers of high school aquatic science and environmental systems classes. This proposal expands the professional development activities by 1) conducting a workshop at the Wetland Education Center located at the INVISTA Victoria Plant

Wetland in Victoria County and 2) including a presentation by UHV staff on the application of Artificial Intelligence/Machine Learning to water resource management.

If implemented, the qualifying teachers would be recruited from with the boundary of the financially contributing partners to participate in workshops held on two days in the Summer of 2024 at multiple locations within Victoria County (i.e., INVISTA Victoria Plant Wetland, the Clements Ranch, and UVH Campus) designed to 1) increase awareness, knowledge, and technical skills related to the hydrologic cycle, water resources, risks to water resources including over-production and pollution, and 2) expand knowledge and skills that align with the related Texas Essential Knowledge and Skills (TEKS) for the purposes of promoting water conservation. Participating teachers would receive a $500.00 stipend and continuing education credits for completing the workshops. The project would conclude with the submittal of a summary report of professional development provided during the workshops.

The total cost for the project is projected to at $17,540. The proposal does not assign a cost to the valuable contributions of time to be made by Teresa LeSage-Clements of UHV, Dmitri Sobolev of UHV, John Snyder of VISD, Tim Andruss of VCGCD, or the administrative staff members of the cooperating entities. Furthermore, the proposal does not assign a cost to the valuable contributions made by the UHV, the City of Victoria, the VISD, the INVISTA Victoria Plant Wetland, or the Clements Ranch for providing access to facilities to be used during the workshops.

If the district(s) agrees to fund the project, management recommends that the districts use a teacher's participation in the UHV PD as a prerequisite to seeking sponsorship from the GCDs for the development and teaching of water conservation curriculum in their classrooms. The development and execution of curriculum, lesson plans, and possibly field trips would be a responsibility of those teachers, if any, sponsored by the GCDs, independent of UHV. Management believes the implementation of district-sponsored curriculum can serve to offset the negative consequences of eliminating the student camp component in the original UHV proposal.

If the project is approved, staff will seek cooperation and approval of cost sharing agreements with Calhoun County GCD, Refugio GCD, and Texana GCD.

Mr. Clements abstained from the deliberation of this matter.

Board Action: No motion was taken.

6.2 – Educational Display at UHV Science Building

Meeting Discussion: Mr. Andruss explained on July 5, 2023, staff discussed a potential opportunity for the District to sponsor an educational display at the UHV Science Building with Professors Teresa LeSage-Clements and Dmitri Sobolev as another method of promoting groundwater conservation. The discussion focused on past considerations by the District (circa 2014) to potentially fund a groundwater education station at the Children's Discovery Museum in Downtown Victoria. Although the project was never fully designed nor was funding approved for the project, the District was anticipating seeking authorization of up to $10,000 for the project.

In light of the District's recent focus on promoting water conservation through elementary student field trips and past efforts to promote water conservation through the implementation of projects with UHV geared toward high school teachers and student, the sponsorship of an educational display at the UHV Science Building would expand the scope of the District's conservation efforts.

Mr. Clements abstained from the deliberation of this matter.

Board Action: None.

7. Consideration of and possible action on matters related to groundwater resource planning including Groundwater Management Area 15 Joint Planning and regional water planning.

7.0 – Report regarding Groundwater Resource Planning

Meeting Discussion: Mr. Andruss explained the representatives of Region L met on May 4, 2023, to continue efforts to develop the 2026 Regional Water Plan. Interim meetings of the Population and Water Demands Workgroup have met to review demand projections within the region. The next meeting of Region L is scheduled for August 3, 2023.

The representatives of Management Area 15 met on July 13, 2023, to continue their joint planning efforts. The next meeting of GMA 15 is scheduled for October 12, 2023.

Board Action: None.

7.1 – GMA 15 By-Laws, Cost Sharing Agreement, and RFP for Technical Services

Meeting Discussion: Mr. Andruss explained on April 21, 2023, the board agreed to serve as the GMA 15 Administrator for the purposes of a) holding the GMA 15 Joint Planning Funds, b) soliciting proposals from qualified entities to provide technical services to GMA 15 to support the development and adoption of desired future conditions and associated explanatory report for the 4th Joint Planning Cycle,

and c) negotiating terms of an agreement for consulting services from the preferred respondent(s) identified by the GMA-15 Committee Members.

The representatives of GMA 15 met on July 13, 2023. During the meeting, the representatives considered the By-Laws of the GMA-15 Committee, the Interlocal Agreement for Cost-Sharing, and the draft RFP for Technical Services for GMA 15 related to the 4th Cycle of Joint Planning. The representatives offered no comments or suggested revisions for the RFP.

The interlocal agreement related to cost-sharing specifies the funding requirements necessary to be a member of the GMA-15 Committee. Member districts located solely within GMA 15, such as VCGCD, are scheduled to pay $7,500.00 under the agreement while member districts located in groundwater management areas in addition to GMA 15 are scheduled to pay $3,750. If all member districts agree to the cost sharing agreement, the total funding for the 4th Joint Planning Cycle in GMA 15 will be reach $82,500.00 by January 9, 2024.

Board Action: Mr. Eller moved to accept and approve:
1. the GMA 15 - By-Laws of the GMA-15 Committee - Rev 2023041, and
2. the GMA 15 - Interlocal Agreement for Cost-Sharing - Rev 20230413a, by resolution, and
3. the VCGCD - RFP for Technical Services for GMA 15 - 20230627, as presented.
Mr. Clements seconded the motion. The motion passed unanimously.

8. Consideration of and possible action on matters related to groundwater policy including the Management Plan of the District and the Rules of the District.

8.0 – Report regarding Groundwater Policy

Meeting Discussion: Mr. Andruss explained on May 16, 2023, staff submitted the management plan approved at the meeting held on April 17, 2023, to the Texas Water Development Board and other entities are required by Chapter 36.

On July 10, 2023, staff identified the following bills on the Texas Legislature Online service that contain the phrase "groundwater" and have or will become law.
1. 88(R) HB 697 - Enrolled Version - Bill Text (relating to seller's disclosures)
2. 88(R) HB 1565 - Enrolled Version - Bill Text (relating to the functions of the Texas Water Development Board and continuation and functions of the State Water Implementation Fund for Texas Advisory Committee)
3. 88(R) HB 1699 - Enrolled Version - Bill Text (relating to the authority of the Evergreen Underground Water Conservation District to impose certain fees)
4. 88(R) HB 1971 - Enrolled Version - Bill Text (relating to the procedures for acting on a permit or permit amendment application by a Previous groundwater conservation district and the disqualification of board members of groundwater conservation districts)

5. 88(R) HB 2443 - Enrolled Version - Bill Text (relating to the authority of certain persons to petition a groundwater conservation district to change certain rules)
6. 88(R) HB 3059 - Enrolled Version - Bill Text (relating to the export fee charged for the transfer of groundwater from a groundwater conservation district)
7. 88(R) HB 3278 - Enrolled Version - Bill Text (relating to the joint planning of desired future conditions in groundwater management areas)
8. 88(R) HB 3731 - Enrolled Version - Bill Text (relating to the Bandera County River Authority and Groundwater District)
9. 88(R) HB 3744 - Enrolled Version - Bill Text (relating to the regulation of water well drillers and water well pump installers)
10. 88(R) HB 4559 - Enrolled Version - Bill Text (relating to the application of statutes that classify political subdivisions according to population)
11. 88(R) SB 317 - Enrolled Version - Bill Text (relating to appellate jurisdiction of the Public Utility Commission regarding certain water or sewer service fees)
12. 88(R) SB 785 - Enrolled Version - Bill Text (relating to the ownership of and certain insurance policy provisions regarding the geothermal energy and associated resources below the surface of land)
13. 88(R) SB 1290 - Enrolled Version - Bill Text (relating to a study of the effects of the installation, operation, removal, and disposal of solar, wind turbine, and energy storage equipment)
14. 88(R) SB 1659 - Enrolled Version - Bill Text (relating to the sunset review process and certain governmental entities subject to that process)
15. 88(R) SB 1746 - Enrolled Version - Bill Text (relating to an exemption from the requirement to obtain a permit from a groundwater conservation district for certain temporary water wells)
16. 88(R) SB 2406 - Enrolled Version - Bill Text (relating to the authority of hospitals in certain counties to drill a water well for the purpose of producing water for use in the event of an emergency or natural disaster)
17. 88(R) SB 2440 - Enrolled Version - Bill Text (relating to a requirement that certain plats for the subdivision of land include evidence of groundwater supply)
18. 88(R) SB 2592 - Enrolled Version - Bill Text (relating to the Lavaca-Navidad River Authority, following the recommendations of the Sunset Advisory Commission; altering terms of the board of directors; specifying grounds for the removal of a member of the board of directors)

Staff will review the passed legislation and coordinate with legal counsel to develop proposed rule revisions and post the required rulemaking hearing notice for the meeting scheduled for October 16, 2023.

Board Action: None.

9. Consideration of and possible action on matters related to administration and management including the minutes of previous meetings, the annual budget of the district, financial reports of the district, bills and invoices of the district, management goals and objectives of the district, administrative policies, staffing,

consultant agreements, interlocal cooperation agreements, and support services provided to and from other groundwater conservation districts.

9.0 – Report regarding Administration and Management

Meeting Discussion: Mr. Andruss explained the next meetings of the Board are scheduled for August 18, 2023, and October 20, 2023, with each meeting to convene at 9:00 AM. Special meetings may be scheduled to address unforeseen issues.

Board Action: None.

9.0.1 – Financial Audit

Meeting Discussion: Mr. Goldman presented his report and findings in his FY2022 Audit.

Board Action: Mr. Clements moved to accept the financial audit for FY2022 as presented. Mr. Eller seconded the motion. The motion passed unanimously.

9.1 – Minutes of Previous Meeting

Meeting Discussion: Mr. Andruss explained the minutes for the meeting held on April 21, 2023, were sent to the board members prior to the meeting.

Board Action: Mr. Clements moved to accept and approve the meeting minutes for April 21, 2023. Mr. Eller seconded the motion. The motion passed unanimously.

9.2 – Financial Reports of the District

Meeting Discussion: Mr. Andruss explained the internal control review and internal financial reports for March 2023, April 2023, and May 2023, have been compiled, reviewed, and forwarded to the directors prior to the meeting.

Board Action: Mr. Clements moved to accept and approve the financial reports for March, April, and May 2023. Mr. Eller seconded the motion. The motion passed unanimously.

9.2.1 – Financial Transaction Review

Meeting Discussion: Mr. Andruss explained since April 1, 2023, as of July 19, 2023, there have been 64 accounts payable transactions and 60 accounts receivable transactions recorded.

Board Action: None.

9.3 – Investments of the District

Meeting Discussion: Mr. Andruss explained the investment reports for December 2022, January and February 2023 have been compiled, reviewed and sent to the board members prior to the meeting.

Board Action: Mr. Clements moved to approve and accept the investment reports for March 2023, April 2023, and May 2023. Mr. Eller seconded the motion. The motion passed unanimously.

9.4 – Unpaid Accounts Payable

Meeting Discussion: Mr. Andruss explained the District has outstanding accounts payable invoices that are not considered regular and routine for which the District has received the goods and services billed for under the invoices.

Board Action: Mr. Eller moved to authorize the general manager to pay the following items:
1. ACCTP-20230516-03 - $1,440.00 - Allison, Bass & Magee - Inv# 6923

Mr. Clements seconded the motion. The motion passed unanimously.

9.5 – FY2024 Budget

Meeting Discussion: Mr. Andruss explained staff will develop and present a budget for the fiscal year ending September 30, 2024 at the meeting scheduled for August 18, 2023, that attempts to fund the operations of the District in a manner that should provide for 1) the accomplishment of the management plan goals and objectives and 2) the completion of certain projects and tasks associated with the administration of the district, groundwater conservation, groundwater management and permitting, groundwater monitoring, groundwater policy development, groundwater protection, groundwater research, and groundwater resource planning, and 3) avoid a budget deficit in Fiscal Year 2023-2024.

Staff will develop the proposed budget anticipating the continued cooperation with and support of the Calhoun County GCD, Refugio GCD, and the Texana GCD.

Staff will develop the proposed budget anticipating the commitment of the monies of the Reserve Fund in Fiscal Year 2023-2024 in accordance with the following schedule:
- Groundwater Conservation: 5%
- Groundwater Management: 10%
- Groundwater Monitoring: 25%
- Groundwater Protection: 25%
- Groundwater Research: 5%
- Groundwater Resource Planning: 5%

- Legal Contingencies: 25%

Staff will develop the proposed budget anticipating the approval of a tax rate equal to the No-New-Revenue Tax Rate calculated by the Tax Assessor - Collector for Tax Year 2023.

Board Action: Mr. Clements moved to authorize the general manager to publish the required tax rate notices for the district based on the lesser of the No-New-Revenue Tax Rate calculated by the Tax Assessor - Collector for Tax Year 2023 or the Tax Rate for Tax Year 2022. Mr. Eller seconded the motion. The motion passed unanimously.

10. Consideration of and possible action on matters related to legal counsel report.

10.0 – Legal Counsel Report

Meeting Discussion: Mr. Allison provide a verbal report regarding legal matters.

Board Action: None.

11. Adjourn.

11.0 – Adjourn Meeting

Meeting Discussion: None.

Board Action: Mr. Eller moved to adjourn the meeting at 11:17 AM after concluding all business of the District. Mr. Clements seconded the motion. The motion passed unanimously.

Victoria County Groundwater Conservation District

THE ABOVE AND FOREGOING MINUTES WERE READ AND APPROVED ON THIS

THE _____ DAY OF _____ A.D. _____.

_____
Director of the Victoria County Groundwater Conservation District

ATTEST:

_____
Director of the Victoria County Groundwater Conservation District

Victoria County Groundwater Conservation District

THE STATE OF TEXAS
VICTORIA COUNTY

The Board of Directors of the Victoria County Groundwater Conservation District convened a meeting at the Dr. Pattie Dodson Health Center, 2805 N. Navarro St., Room 108, Victoria, Victoria County, Texas, 77901 on August 18, 2023, at 9:00 AM.

Meeting Attendance:

Precinct 1:	Mr. Jerry Hroch, Vice President	Present
Precinct 2:	Mr. Thurman Clements, Jr., Director	Absent
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Present
Precinct 4:	Mr. Mark Meek, President	Absent
At Large:	Mr. Kenneth Eller, Director	Present
General Manager:	Mr. Timothy Andruss	Present
Legal Counsel:	Mr. James Allison	Present

Agenda Items -

1. Call the meeting to order and welcome guests.

Meeting Discussion: Mrs. Dietzel called the meeting to order at 9:00 AM.

Board Action: None.

2. Receive public comments.

Meeting Discussion: None.

Board Action: None.

3. Consideration of and possible action on matters related to Groundwater Management including efforts and activities of the District regarding permitting, complaints, investigations, violations, and enforcement cases associated with permitting.

4. Consideration of and possible action on matters related to groundwater protection including complaints, investigations, violations, and enforcement cases related to groundwater contamination and waste.

5. Consideration of and possible action on matters related to groundwater monitoring.

6. Consideration of and possible action on matters related to groundwater conservation.

7. Consideration of and possible action on matters related to groundwater resource planning including Groundwater Management Area 15 Joint Planning and regional water planning.

8. Consideration of and possible action on matters related to groundwater policy including the Management Plan of the District and the Rules of the District.

9. Consideration of and possible action on matters related to administration and management including the minutes of previous meetings, the annual budget of the district, financial reports of the district, bills and invoices of the district, management goals and objectives of the district, administrative policies, staffing, consultant agreements, interlocal cooperation agreements, and support services provided to and from other groundwater conservation districts.

9.0 – Report regarding Administration and Management

Meeting Discussion: Mr. Andruss explained the next meeting of the Board is October 20, 2023, with the meeting to convene at 9:00 AM. Regular meetings will be rescheduled as necessary and special meetings may be scheduled to address unforeseen issues.

On July 25, 2023, the District received a letter from Daniel B. Stephens & Associates, Inc. (DBS&A) expressing interest in providing technical support to the District. Due to the continuing difficulty the District has experienced in obtaining technical support from consultants, staff will attempt to negotiate terms for an agreement between the District and DBSA to be presented at the October 20, 2023, meeting.

Board Action: None.

9.1 – FY2024 Budget

Meeting Discussion: Mr. Andruss explained staff developed a budget for the fiscal year ending September 30, 2024, that attempts to fund the operations of the District in a manner that provides for 1) the accomplishment of the management plan goals and objectives and 2) the completion of certain projects and tasks associated with the administration of the district, groundwater conservation, groundwater management and permitting, groundwater monitoring, groundwater policy development, groundwater protection, groundwater research, and groundwater resource planning, and 3) avoid a budget deficit in Fiscal Year 2023-2024.

Staff developed the proposed budget anticipating the continued cooperation with and support of the Calhoun County GCD, Refugio GCD, and the Texana GCD to be achieved through the approval of a revised interlocal cooperation agreement that includes an increase to the monthly fees for service equal to 5%.

Staff developed the proposed budget anticipating the commitment of the monies of the Reserve Fund in Fiscal Year 2023-2024 in accordance with the following schedule:
- Groundwater Conservation: 5%
- Groundwater Management: 10%
- Groundwater Monitoring: 25%
- Groundwater Protection: 25%
- Groundwater Research: 5%
- Groundwater Resource Planning: 5%
- Legal Contingencies: 25%

Staff developed the proposed budget anticipating the approval of a tax rate equal to the No-New-Revenue Tax Rate calculated by the Tax Assessor - Collector for Tax Year 2023.

Summary of Budget Recommendation:

In keeping with the practice of the District to develop and adopt conservative budgets, management has developed a budget recommendation that anticipates revenue of $1,034,900 and expenditures of $907,300, resulting in an anticipated surplus of $127,600 at the end of the fiscal year. The budget surplus is achieved while reducing the tax rate, maintaining the tax levy, reducing employment-related expenses, and budgeting significant expenses for groundwater conservation, groundwater monitoring, and groundwater protection.

Based on feedback provided by the Board, the recommended budget has been developed based on the assumption that the adopted tax rate would equal the No-New-Revenue Tax Rate. The No-New-Revenue Tax Rate for Tax Year 2023 is $0.00699 per $100 valuation. The computed tax levy for Fiscal Year 2023, based on the No-New-Revenue Tax Rate, is $748,600.

Based on current staffing and the continuation of interlocal cooperation agreements with Pecan Valley GCD, Texana GCD, Refugio GCD, and Calhoun County GCD, the estimated revenue for Fiscal Year 2023 from cooperation district is estimated to be $251,300. The cooperating district revenue estimate is based on a 5% increase in fees charged to the cooperating districts which would require the approval of revisions to the interlocal agreements between the district and Texana GCD, Refugio GCD, and Calhoun County GCD.

The recommended budget expenditures for employment totals -$466,400. The total reflects the following changes: elimination of wages and benefits for the permitting technician position, the addition of expenditures for the intern position, the creation of a new wage chart (i.e. pay scale) for the specialist position based on the wage chart for the administrative coordinator position, the adjustment of the wage charts by 3.3% based on Consumer Price Index (CPI) calculations for the South Region for the 12 months ending in June 2023. The recommended budget

expenditures for employment represents a reduction of $43,700 as compared to Fiscal Year 2023.

Structurally, the budget has been revised to simplify future transaction processing by eliminating the "function" hierarchy and assigning all employment-related expenses to the Program 1002 - Administration - Employment.

Board Action: Mr. Eller move to adopt the proposed budget for Fiscal Year 2024 by order and authorize the presiding officer to execute the draft interlocal agreement with the Calhoun County Groundwater Conservation District, the Refugio Groundwater Conservation District, and the Texana Groundwater Conservation District, as presented. Mrs. Dietzel seconded the motion. The motion passed unanimously.

9.2 – Tax Rate for TY2023

Meeting Discussion: Mr. Andruss explained staff completed the public notice requirements related the required public hearing regarding the proposed tax rate for tax year 2023.

On September 9, 2022, the Board of Directors met and adopted a tax rate of $0.00800/$100 for Tax Year 2022.

Based on calculations completed by the Victoria County Tax Assessor-Collector, the following tax rates exist for the District for Tax Year 2023:
- No-New-Revenue Tax Rate: $0.006990/$100
- Voter-Approval Tax Rate: $0.007570/$100

The proposed tax rate for Tax Year 2023 is equal to the No-New-Revenue Tax Rate.

Board Action: Mr. Eller moved to close the public hearing at 9:29 AM after receiving no public comment. Mrs. Dietzel seconded the motion. The motion passed unanimously.

Mr. Eller moved to approve and adopt the proposed tax rate as the adopted tax rate by order. Mrs. Dietzel seconded the motion. The motion passed unanimously.

9.3 – Appraisal Roll for Tax Year 2023

Meeting Discussion: None.

Board Action: Mr. Eller moved to accept and approve the appraisal roll for Tax Year 2023 and adopt the Order Approving the 2023 Appraisal Roll. Mrs. Dietzel seconded the motion. The motion passed unanimously.

9.4 – Employee Compensation and Benefits

Meeting Discussion: Mr. Andruss explained the District established pay scales for each type of employee with the previous adoptions of the budgets of the district. The scales area comprised of 5 steps with each incremental step representing a 5% increase in wage. The scales are used to 1) establish budget recommendations and 2) establish pay rates for new employees, and 3) develop recommendations regarding merit-based pay increases for individual employees.

The recommended budget expenditures for employment totals -$466,400. The total reflects the following changes: elimination of wages and benefits for the permitting technician position, the addition of expenditures for the intern position, the creation of a new wage chart (i.e. pay scale) for the specialist position based on the wage chart for the administrative coordinator position, the adjustment of the wage charts by 3.3% based on Consumer Price Index (CPI) calculations for the South Region for the 12 months ending in June 2023. The recommended budget expenditures for employment represents a reduction of $43,700 as compared to Fiscal Year 2023 and are based on Step 5 wage rates.

Based on their performance during the current fiscal year and the state of the labor market, consideration of incrementing their pay scale steps is recommended. All other employees have reach step 5 of their respective pay scale.

Board Action: Mr. Eller moved to approve and adopt the recommended pay scales and pay steps for fiscal year 2024, as presented. Mrs. Dietzel seconded the motion. The motion passed unanimously.

10. Consideration of and possible action on matters related to legal counsel report.

11. Adjourn.

11.0 – Adjourn Meeting

Meeting Discussion: None.

Board Action: Mr. Eller moved to adjourn the meeting at 9:37 AM after concluding all business of the District. Mrs. Dietzel seconded the motion. The motion passed unanimously.

Victoria County Groundwater Conservation District

THE ABOVE AND FOREGOING MINUTES WERE READ AND APPROVED ON THIS

THE _____ DAY OF _____ A.D. _____.

_____
Director of the Victoria County Groundwater Conservation District

ATTEST:

_____
Director of the Victoria County Groundwater Conservation District

VCGCD - Adm - FM - Internal Control Review Reports - ICRR-20230630-01 - June 2023

Victoria CountyGroundwater Conservation DistrictInternal Control Review Report

Reporting Period Start: 6/1/23
Reporting Period Stop: 6/30/23

Related Documentation
VCGCD - Adm - FM - Financial Registry - FY2023 - Check Out 20230907.1515 CPD - Check In 20230918.0949 CPD
Bank Statement Links:

1. VCGCD - Adm - FM - Bank Statements - BS-20230602-01 - CD# 2625 - RECONCILED
2. VCGCD - Adm - FM - Bank Statements - BS-20230602-02 - CD# 2626 - RECONCILED
3. VCGCD - Adm - FM - Bank Statements - BS-20230602-03 - CD# 2629 - RECONCILED
4. VCGCD - Adm - FM - Bank Statements - BS-20230608-01 - CD# 2801 - RECONCILED
5. VCGCD - Adm - FM - Bank Statements - BS-20230608-02 - CD# 2802 - RECONCILED
6. VCGCD - Adm - FM - Bank Statements - BS-20230622-01 - CD# 2680 - RECONCILED
7. VCGCD - Adm - FM - Bank Statements - BS-20230630-01 - Prosperity 7120 - RECONCILED
8. VCGCD - Adm - FM - Bank Statements - BS-20230630-02 - Prosperity 5242 - RECONCILED
9. VCGCD - Adm - FM - Bank Statements - BS-20230630-03 - Prosperity 3566 - RECONCILED

10. VCGCD - Adm - FM - Bank Statements - BS-20230630-04 - CD# 0518 - RECONCILED
11. VCGCD - Adm - FM - Bank Statements - BS-20230630-05 - CD# 0519 - RECONCILED
12. VCGCD - Adm - FM - Bank Statements - BS-20230630-06 - CD# 0520 - RECONCILED
13. VCGCD - Adm - FM - Bank Statements - BS-20230630-07 - CD# 0521 - RECONCILED

List of UNPAID Accounts Payable (ACCTPs) Note Links:

1. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230516-03 - $1,440.00 - Allison, Bass & Magee - Inv# 6923 - TR-20230721-01-D - $1,440.00 - Prosperity 3566 - UNRECONCILED
2. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230622-01 - $1,415.00 - Pace Analytical Inv No. 1613729 - TR-20230713-05-D - $1,415.00 - Prosperity 3566 - UNRECONCILED
3. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230627-01 - $472.00 - Pace Analytical - TR-20230713-04-D - $472.00 - Prosperity 3566 - UNRECONCILED

List of UNPAID Accounts Receivable (ACCTRs) Note Links:

List of VOIDED Check Note Links:

List of CANCELLED Transaction Note Links:

List of COLLATERAL RECORD Note Links:

1. VCGCD - Adm - FM - Collateral Records - CR-20230630-01 - Prosperity Bank - June 2023

List of DISPUTED and UNPAID Accounts Payable (ACCTPs)Notes:

List of DISPUTED and UNPAID Accounts Receivable (ACCTRs)Notes:

List of transaction notes related to EMPLOYEE PAYROLL PAYMENTS Notes:

1. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230630-01 - $5,981.12 - Paystub - Tim Andruss - June 2023 - TR-20230630-01-D - $5,981.12 - Prosperity 3566 - RECONCILED

2. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230630-02 - $3,583.85 - Paystub - Mike Benavides - June 2023 - TR-20230630-02-D - $3,583.85 - Prosperity 3566 - RECONCILED
3. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230630-03 - $3,351.34 - Paystub - Caitlynn Davenport - June 2023 - TR-20230630-03-D - $3,351.34 - Prosperity 3566 - RECONCILED
4. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230630-04 - $3,103.49 - Paystub - Willie Immenhauser - June 2023 - TR-20230630-04-D - $3,103.49 - Prosperity 3566 - RECONCILED
5. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230630-05 - $2,728.35 - Paystub - Candace Whittley - June 2023 - TR-20230630-05-D - $2,728.35 - Prosperity 3566 - RECONCILED
6. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230630-06 - $1,449.07 - Paystub - Jace Stevens - June 2023 - TR-20230630-06-D - $1,449.07 - Prosperity 3566 - RECONCILED
7. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230630-07 - $11.19 - Payroll Services Fee - TR-20230630-07-D - $11.19 - Prosperity 3566 - RECONCILED
8. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230630-08 - $6,595.10 - IRS - TR-20230630-08-D - $6,595.10 - Prosperity 3566 - RECONCILED
9. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230630-09 - $2,578.95 - TML - TR-20230630-09-D - $2,578.95 - Prosperity 3566 - RECONCILED
10. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230630-10 - $5,427.86 - TCDRS - TR-20230630-10-D - $5,427.86 - Prosperity 3566 - RECONCILED

Internal Control Review

Question #1: Are bank statements and reconciliation forms consistent and balanced? Yes
Comments:

Question#2: Are dual signatures present on all checks? Yes
Comments:

Question#3: Are all expenditures associated with employees, including credit card expenditures, or contractors appropriate and properly authorized? Yes

Comments:

Question#3a: Do all expenditures associated with the payment of employee withholding and district contributions for heath benefits (TML) comport with withholdings and contribution made for health benefits with the associated payroll payment transactions?

Note:

Anticipated Number of Covered Employees for Reporting Period:	5
Anticipated Total Monthly Premium for Reporting Period:	$ 2,578.95
Total of Employee Withholdings for Health Benefits:	$78.95
Total of District Contributions for Health Benefits:	$ 2,500.00
Total of Withholdings and Contributions:	**$ 2,578.95**
Number of Covered Employees on Invoice:	5
Health Benefit (TML) Payment Amount:	**$ 2,578.95**

Question#3b: Do all expenditures associated with the payment of employee withholding and district contributions for pension benefits (TCDRS) comport with withholdings and contribution made for pension benefits with the associated payroll payment transactions? Yes

Difference: Group Term Life Premiums

Total of Employee Withholdings for Pension Benefits:	$1,796.46
Total of District Contributions for Pension Benefits:	$3,592.90
Total of Withholdings and Contributions:	**$5,389.36**
Pension Benefit (TCDRS) Payment Amount:	$5,427.86

$12,000 - One Time Payment

Question#3c: Do all expenditures associated with the payment of employee withholding and district contributions for taxes (IRS) comport with withholdings and contribution made for taxes with the associated payroll payment transactions? Yes

Total of Employee Withholdings for Taxes:	$4,705.55
Total of District Contributions for Taxes:	$1,889.55
Total of Withholdings and Contributions:	**$6,595.10**
Taxes (IRS) Payment Amount:	$6,595.10

Question#3d: Do all expenditures associated with the payment of employee withholding and district contributions for unemployment (TWC) comport with withholdings and contribution made for unemployment with the associated payroll payment transactions? Yes

Total of Employee Withholdings for Unemployment:	$0.00
Total of District Contributions for Unemployment:	$0.00
Total of Withholdings and Contributions:	**$0.00**
Taxes (TWC) Payment Amount:	$0.91

Question#4: Are all electronic transactions (drafts and transfers) appropriate and properly documented? Yes
Comments:

Question#5: Are all voided checks properly marked and recorded? Yes
Comments:

Question#6: Does the market valueof the pledged collateral and FDIC insurance exceed the total of investments per banking institution? Yes
Comments:

Question#7: Do the external financial recordscomport with internal financial records of the District? Yes
Comments:

Certification:

I certify that I have reviewed the documentation referenced above and the answers provided to the questions are true and accurate.

Caitlynn Davenport _____ 9/18/23 _____
Signature of District Official Date

Caitlynn Davenport

Name of District Official

PDF of Executed Report:

Note Template Link: VCGCD - Adm - FM - Internal Control Review Reports - ICRR-YYYYMMDD-SQ - REPORTINGPERIODSTOPDATE

VCGCD - Adm - FM - Internal Control Review Reports - ICRR-20230731-01 - July 2023

Victoria CountyGroundwater Conservation DistrictInternal Control Review Report

Reporting Period Start: 7/1/23
Reporting Period Stop: 7/31/23

Related Documentation
VCGCD - Adm - FM - Financial Registry - FY2023 - Check Out 20230918.1037 CPD - Check In 20230918.1427 CPD
Bank Statement Links:

1. VCGCD - Adm - FM - Bank Statements - BS-20230703-01 - CD# 2625 - RECONCILED
2. VCGCD - Adm - FM - Bank Statements - BS-20230703-02 - CD# 2626 - RECONCILED
3. VCGCD - Adm - FM - Bank Statements - BS-20230703-03 - CD# 2629 - RECONCILED
4. VCGCD - Adm - FM - Bank Statements - BS-20230708-01 - CD# 2801 - RECONCILED
5. VCGCD - Adm - FM - Bank Statements - BS-20230708-02 - CD# 2802 - RECONCILED
6. VCGCD - Adm - FM - Bank Statements - BS-20230721-01 - CD# 2680 - RECONCILED
7. VCGCD - Adm - FM - Bank Statements - BS-20230731-01 - Prosperity 7120 - RECONCILED
8. VCGCD - Adm - FM - Bank Statements - BS-20230731-02 - Prosperity 5242 - RECONCILED
9. VCGCD - Adm - FM - Bank Statements - BS-20230731-03 - Prosperity 3566 - RECONCILED

List of UNPAID Accounts Payable (ACCTPs) Note Links:

List of UNPAID Accounts Receivable (ACCTRs) Note Links:

List of VOIDED Check Note Links:

List of CANCELLED Transaction Note Links:

List of COLLATERAL RECORD Note Links:

1. VCGCD - Adm - FM - Collateral Records - CR-20230731-01 - Prosperity Bank - July 2023

List of DISPUTED and UNPAID Accounts Payable (ACCTPs)Notes:

List of DISPUTED and UNPAID Accounts Receivable (ACCTRs)Notes:

List of transaction notes related to EMPLOYEE PAYROLL PAYMENTS Notes:

1. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-01 - $5,981.13 - Tim Andruss - Paystub - July 2023 - TR-20230731-01-D - $5,981.13 - Prosperity 3566 - UNRECONCILED
2. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-02 - $3,430.28 - Mike Benavides - Paystub - July 2023 - TR-20230731-01-D - $3,430.28 - Prosperity 3566 - UNRECONCILED
3. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-03 - $3,351.33 - Caitlynn Davenport - Paystub - July 2023 - TR-20230731-03-D - $3,351.33 - Prosperity 3566 - UNRECONCILED
4. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-04 - $2,968.89 - Willie Immenhauser - Paystub - July 2023 - TR-20230731-04-D - $2,968.89 - Prosperity 3566 - UNRECONCILED
5. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-05 - $2,610.27 - Candace Whittley - Paystub - July 2023 - TR-20230731-05-D - $2,610.27 - Prosperity 3566 - UNRECONCILED
6. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-06 - $1,300.84 - Jace Stevens - Paystub - July 2023 - TR-20230731-06-D - $1,300.84 - Prosperity 3566 - UNRECONCILED

7. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-17 - $6,444.76 - IRS - TR-20230731-17-D - $6,444.76 - Prosperity 3566 - RECONCILED
8. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-16 - $191.63 - IRS - TR-20230731-16-D - $191.63 - Prosperity 3566 - RECONCILED
9. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-15 - $11.25 - IRS- TR-20230731-15-D - $11.25 - Prosperity 3566 -RECONCILED
10. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-14 - $254.24 - IRS - TR-20230731-14-D - $254.24 - Prosperity 3566 - RECONCILED
11. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-13 - $5,314.76 - TCDRS - TR-20230731-13-D - $5,314.76 - Prosperity 3566 - RECONCILED
12. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-12 - $2,578.95 - TML - TR-20230731-12-D - $2,578.95 - Prosperity 3566 - RECONCILED
13. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-11 - $6,619.36 - IRS - TR-20230731-11-D - $6,619.36 - Prosperity 3566 - RECONCILED
14. VCGCD - Adm - FM - Accounts Payable - ACCTP-20230731-10 - $11.19 - Intuit - TR-20230731-10-D - $11.19 - Prosperity 3566 - RECONCILED

Internal Control Review

Question #1: Are bank statements and reconciliation forms consistent and balanced? Yes
Comments:

Question#2: Are dual signatures present on all checks? Yes
Comments:

Question#3: Are all expenditures associated with employees, including credit card expenditures, or contractors appropriate and properly authorized? Yes
Comments:

Question#3a: Do all expenditures associated with the payment of employee withholding and district contributions for heath benefits (TML) comport with withholdings and contribution made for health benefits with the associated payroll payment transactions?
Note:

Anticipated Number of Covered Employees for Reporting Period:	5
Anticipated Total Monthly Premium for Reporting Period:	$ 2,578.95
Total of Employee Withholdings for Health Benefits:	$78.95
Total of District Contributions for Health Benefits:	$ 2,500.00
Total of Withholdings and Contributions:	**$ 2,578.95**
Number of Covered Employees on Invoice:	5
Health Benefit (TML) Payment Amount:	**$ 2,560.45**

Question#3b: Do all expenditures associated with the payment of employee withholding and district contributions for pension benefits (TCDRS) comport with withholdings and contribution made for pension benefits with the associated payroll payment transactions? Yes
Difference: Group Term Life Premiums

Total of Employee Withholdings for Pension Benefits:	$1,759.03
Total of District Contributions for Pension Benefits:	$3,518.04
Total of Withholdings and Contributions:	**$5,277.07**
Pension Benefit (TCDRS) Payment Amount:	$5,314.76

$12,000 - One Time Payment

Question#3c: Do all expenditures associated with the payment of employee withholding and district contributions for taxes (IRS) comport with withholdings and contribution made for taxes with the associated payroll payment transactions? Yes

2 months

Difference is adjustments

Total of Employee Withholdings for Taxes:	$9,304.56
Total of District Contributions for Taxes:	$3,759.56
Total of Withholdings and Contributions:	**$13,064.12**
Taxes (IRS) Payment Amount:	$13,521.24

Question#3d: Do all expenditures associated with the payment of employee withholding and district contributions for unemployment (TWC) comport with withholdings and contribution made for unemployment with the associated payroll payment transactions? Yes

Total of Employee Withholdings for Unemployment:	$0.00
Total of District Contributions for Unemployment:	$1.62
Total of Withholdings and Contributions:	**$1.62**
Taxes (TWC) Payment Amount:	$0.00

Question#4: Are all electronic transactions (drafts and transfers) appropriate and properly documented? Yes

Comments:

Question#5: Are all voided checks properly marked and recorded? Yes
Comments:

Question#6: Does the market valueof the pledged collateral and FDIC insurance exceed the total of investments per banking institution? Yes
Comments:

Question#7: Do the external financial recordscomport with internal financial records of the District? Yes
Comments:

Certification:

I certify that I have reviewed the documentation referenced above and the answers provided to the questions are true and accurate.

Caitlynn Davenport _____ 9/18/23 _____
Signature of District Official Date

Caitlynn Davenport _____
Name of District Official

PDF of Executed Report:

Note Template Link: VCGCD - Adm - FM - Internal Control Review Reports - ICRR-YYYYMMDD-SQ - REPORTINGPERIODSTOPDATE

Bank Account Balance Report as of June 30, 2023

Bank Account	Reconciled Bank Statement	Fund	Reported Balance as of October 1, 2022	Total Credits	Total Debits	Calculated Balance	Current Reported Balance	Unreconciled Amount
Prosperity 3566	BS-20230630-03	Operating	$ 180,525.17	$ 463,239.38	$ (519,459.26)	$ 124,305.29	$ 124,305.29	$ -
Prosperity 7120	BS-20230630-01	Operating	$ 114,882.98	$ 1,577.74	$ -	$ 116,460.72	$ 116,460.72	$ -
Prosperity 5242	BS-20230630-02	Reserve	$ 1,950,619.41	$ 752,722.72	$ (1,250,000.00)	$ 1,453,342.13	$ 1,453,342.13	$ -
Prosperity CD 2625	BS-20230602-01	Reserve	$ 156,664.44	$ 2,239.75	$ -	$ 158,904.19	$ 158,904.19	$ -
Prosperity CD 2626	BS-20230602-02	Reserve	$ 157,421.43	$ 235.65	$ -	$ 157,657.08	$ 157,657.08	$ -
Prosperity CD 2629	BS-20230602-03	Reserve	$ 158,373.16	$ 2,380.77	$ -	$ 160,753.93	$ 160,753.93	$ -
Prosperity CD 2680	BS-20230622-01	Reserve	$ 158,275.72	$ 1,538.20	$ -	$ 159,813.92	$ 159,813.92	$ -
Prosperity CD 2801	BS-20230608-01	Reserve	$ 259,070.95	$ 484.83	$ -	$ 259,555.78	$ 259,555.78	$ -
Prosperity CD 2802	BS-20230608-02	Reserve	$ 259,070.95	$ 484.83	$ -	$ 259,555.78	$ 259,555.78	$ -
Prosperity CD 0518	BS-20230630-04	Reserve	$ -	$ 252,110.96	$ -	$ 252,110.96	$ 252,110.96	$ -
Prosperity CD 0519	BS-20230630-05	Reserve	$ -	$ 252,110.96	$ -	$ 252,110.96	$ 252,110.96	$ -
Prosperity CD 0520	BS-20230630-06	Reserve	$ -	$ 252,047.95	$ -	$ 252,047.95	$ 252,047.95	$ -
Prosperity CD 0521	BS-20230630-07	Reserve	$ -	$ 252,047.95	$ -	$ 252,047.95	$ 252,047.95	$ -
Total			**$ 3,394,904.21**	**$ 2,233,221.69**	**$ (1,769,459.26)**	**$ 3,858,666.64**	**$ 3,858,666.64**	

Note: cash-basis accounting method used to develop reports.
Tab: Bank Account Balances Report

FDIC Insurance and Collateral Report as of June 30, 2023

Institution	Type	CUSIP	Description	Safekeeping Location	Safekeeping Receipt	Credit Rating	Market Value
Prosperity Bank	FDIC Insurance	N/A	N/A	N/A		N/A	$ 250,000.00
Prosperity Bank	Pledged Collateral	3138WBAD7	FNMA #AS1803	FHLB		AAA	$ 39,063.05
Prosperity Bank	Pledged Collateral	3128MMT86	FHLMC #G18574	FHLB		AAA	$ 158,829.95
Prosperity Bank	Pledged Collateral	3138WJAC2	FNMA #AS8102	FHLB		AAA	$ 417,261.39
Prosperity Bank	Pledged Collateral	3128MMVQ3	FNMA #G18622	FHLB		AAA	$ 910,621.56
Prosperity Bank	Pledged Collateral	3138WJN53	FNMA #AS8511	FHLB		AAA	$ 238,254.31
Prosperity Bank	Pledged Collateral	31418DXG2	FNMA #MA4278	FHLB		AAA	$ 765,961.07
Prosperity Bank	Pledged Collateral	3132J4HD4	FHLMS #G30927	FHLB		AAA	$ 464,037.29
Prosperity Bank	Pledged Collateral	31418D5F5	FNMA #MA4445	FHLB		AAA	$ 287,393.20
Prosperity Bank	Pledged Collateral	31418ECD0	FNMA #MS4567	FHLB		AAA	$ 233,306.96
Prosperity Bank	Pledged Collateral	31418EDH0	FNMA #MA4603	FHLB		AAA	$ 243,822.87
Total							**$ 4,008,551.65**

Note: cash-basis accounting method used to develop reports.
Tab: Collateral Report

Budget Performance Report as of June 30, 2023

Program	Function	Category	Original Budget	Actual	Performance
1000 - Administration	1001 - Administration - Revenue Administration	0120 - Tax Collections	$ 696,388.01	$ 720,235.69	$ (23,847.68)
1000 - Administration	1001 - Administration - Revenue Administration	0130 - Interest Income	$ 5,000.00	$ 49,929.85	$ (44,929.85)
1000 - Administration	1001 - Administration - Revenue Administration	0140 - District Fees - GCD Management and Operations Cost-	$ 237,985.00	$ 94,899.08	$ 143,085.92
1000 - Administration	1001 - Administration - Revenue Administration	0143 - District Fees - Permitting	$ -	$ 101,423.47	$(101,423.47)
1000 - Administration	1001 - Administration - Revenue Administration	0145 - District Fees - Enforcement	$ -	$ 80.00	$ (80.00)
1000 - Administration	1001 - Administration - Revenue Administration	0150 - Grants	$ -	$ -	$ -
1000 - Administration	1001 - Administration - Revenue Administration	0160 - Refunds	$ -	$ 1,675.62	$ (1,675.62)
1000 - Administration	1001 - Administration - Revenue Administration	0215 - District Fees - Legislative Services Cost-Sharing Fees	$ 18,000.00	$ -	$ 18,000.00
1000 - Administration	1100 - Administration - Personnel and Benefits	110 - Employee Wages - Managerial	$ (13,610.06)	$ (13,261.68)	$ (348.38)
1000 - Administration	1100 - Administration - Personnel and Benefits	130 - Employee Wages - Administrative	$ (97,366.08)	$ (62,970.48)	$ (34,395.60)
1000 - Administration	1100 - Administration - Personnel and Benefits	140 - Employee Benefits - Health	$ (36,000.00)	$ (25,812.66)	$ (10,187.34)
1000 - Administration	1100 - Administration - Personnel and Benefits	150 - Employee Benefits - Retirement	$ (63,997.49)	$ (49,310.66)	$ (14,686.83)
1000 - Administration	1100 - Administration - Personnel and Benefits	160 - Employment Fees - Social Security and Medicare	$ (27,697.11)	$ (20,013.70)	$ (7,683.41)
1000 - Administration	1100 - Administration - Personnel and Benefits	170 - Employment Fees - State Unemployment	$ (1,500.00)	$ (2,072.79)	$ 572.79
1000 - Administration	1100 - Administration - Personnel and Benefits	180 - Employment Fees - Accrued Leave Conversion	$ (19,193.34)	$ -	$ (19,193.34)
1000 - Administration	1100 - Administration - Personnel and Benefits	190 - Employment Deductions and Withholdings	$ -	$ (21,020.35)	$ 21,020.35
1000 - Administration	1100 - Administration - Personnel and Benefits	900 - Miscellaneous	$ -	$ (39.18)	$ 39.18
1000 - Administration	1200 - Administration - Election Management	210 - Legal Services	$ (1,000.00)	$ (210.00)	$ (790.00)
1000 - Administration	1200 - Administration - Election Management	220 - Professional and Technical Services	$ (30,000.00)	$ -	$ (30,000.00)
1000 - Administration	1200 - Administration - Election Management	310 - Supplies	$ -	$ -	$ -
1000 - Administration	1200 - Administration - Election Management	500 - Public Notices and Publications	$ (1,000.00)	$ -	$ (1,000.00)
1000 - Administration	1200 - Administration - Election Management	900 - Miscellaneous	$ -	$ -	$ -
1000 - Administration	1300 - Administration - Financial Management	210 - Legal Services	$ (500.00)	$ -	$ (500.00)

Note: cash-basis accounting method used to develop reports.
Tab: Budget Performance - FY22

1000 - Administration	1300 - Administration - Financial Management	220 - Professional and Technical Services	$	-	$	(450.00)	$	450.00
1000 - Administration	1300 - Administration - Financial Management	221 - Professional and Technical Services - Auditor	$	(15,000.00)	$	-	$	(15,000.00)
1000 - Administration	1300 - Administration - Financial Management	222 - Professional and Technical Services - Tax Assessor	$	(50,000.00)	$	(46,428.00)	$	(3,572.00)
1000 - Administration	1300 - Administration - Financial Management	223 - Professional and Technical Services - Appraisal District	$	(12,000.00)	$	(7,102.85)	$	(4,897.15)
1000 - Administration	1300 - Administration - Financial Management	224 - Professional and Technical Services - Accountant	$	(2,400.00)	$	(475.00)	$	(1,925.00)
1000 - Administration	1300 - Administration - Financial Management	500 - Public Notices and Publications	$	(2,000.00)	$	-	$	(2,000.00)
1000 - Administration	1300 - Administration - Financial Management	900 - Miscellaneous	$	-	$	(49.19)	$	49.19
1000 - Administration	1400 - Administration - Information Management	210 - Legal Services	$	(500.00)	$	(557.41)	$	57.41
1000 - Administration	1400 - Administration - Information Management	220 - Professional and Technical Services	$	-	$	-	$	-
1000 - Administration	1400 - Administration - Information Management	310 - Supplies	$	-	$	-	$	-
1000 - Administration	1400 - Administration - Information Management	330 - Training and Travel Expenses	$	-	$	-	$	-
1000 - Administration	1400 - Administration - Information Management	340 - Membership/Dues/Subscriptions	$	-	$	-	$	-
1000 - Administration	1400 - Administration - Information Management	410 - Equipment	$	(1,000.00)	$	(1,418.32)	$	418.32
1000 - Administration	1400 - Administration - Information Management	420 - Software	$	(3,760.00)	$	(1,810.04)	$	(1,949.96)
1000 - Administration	1400 - Administration - Information Management	430 - Technology Services	$	(500.00)	$	(3,064.55)	$	2,564.55
1000 - Administration	1400 - Administration - Information Management	431 - Technology Services - GIS System	$	-	$	-	$	-
1000 - Administration	1400 - Administration - Information Management	432 - Technology Services - Workflow System	$	(1,200.00)	$	(810.00)	$	(390.00)
1000 - Administration	1400 - Administration - Information Management	433 - Technology Services - Record Archival System	$	-	$	(223.50)	$	223.50
1000 - Administration	1400 - Administration - Information Management	434 - Technology Services - Website and Email System	$	(600.00)	$	(604.18)	$	4.18
1000 - Administration	1400 - Administration - Information Management	435 - Technology Services - Phone System	$	(10,320.00)	$	(4,084.79)	$	(6,235.21)
1000 - Administration	1400 - Administration - Information Management	436 - Technology Services - Internet	$	(2,400.00)	$	-	$	(2,400.00)
1000 - Administration	1400 - Administration - Information Management	450 - Maintenance and Repair	$	(500.00)	$	-	$	(500.00)
1000 - Administration	1400 - Administration - Information Management	900 - Miscellaneous	$	-	$	-	$	-
1000 - Administration	1500 - Administration - Meeting Management	210 - Legal Services	$	(7,500.00)	$	(557.42)	$	(6,942.58)
1000 - Administration	1500 - Administration - Meeting Management	500 - Public Notices and Publications	$	(200.00)	$	-	$	(200.00)

1000 - Administration	1500 - Administration - Meeting Management	900 - Miscellaneous	$	-	$	(28.98)	$	28.98
1000 - Administration	1600 - Administration - Operational and Performance Management	900 - Miscellaneous	$	-	$	-	$	-
1000 - Administration	1700 - Administration - Organizational Management	210 - Legal Services	$	(2,000.00)	$	(1,340.02)	$	(659.98)
1000 - Administration	1700 - Administration - Organizational Management	215 - Legislative and Administrative Action Representation Services	$	(40,000.00)	$	-	$	(40,000.00)
1000 - Administration	1700 - Administration - Organizational Management	220 - Professional and Technical Services	$	-	$	-	$	-
1000 - Administration	1700 - Administration - Organizational Management	230 - Insurance and Bonds	$	(3,750.00)	$	(3,291.18)	$	(458.82)
1000 - Administration	1700 - Administration - Organizational Management	310 - Supplies	$	(5,500.00)	$	(6,480.71)	$	980.71
1000 - Administration	1700 - Administration - Organizational Management	315 - Certified Mail and Stamps	$	(1,000.00)	$	(500.15)	$	(499.85)
1000 - Administration	1700 - Administration - Organizational Management	330 - Training and Travel Expenses	$	(1,000.00)	$	986.21	$	(1,986.21)
1000 - Administration	1700 - Administration - Organizational Management	340 - Membership/Dues/Subscriptions	$	(200.00)	$	-	$	(200.00)
1000 - Administration	1700 - Administration - Organizational Management	350 - Lease	$	(20,000.00)	$	(1,044.00)	$	(18,956.00)
1000 - Administration	1700 - Administration - Organizational Management	900 - Miscellaneous	$	(1,000.00)	$	(40.00)	$	(960.00)
1000 - Administration	1800 - Administration - Program and Project Management	900 - Miscellaneous	$	-	$	-	$	-
1000 - Administration	1900 - Administration - Records Management	210 - Legal Services	$	(2,500.00)	$	(180.00)	$	(2,320.00)
1000 - Administration	1900 - Administration - Records Management	350 - Lease	$	(2,000.00)	$	-	$	(2,000.00)
1000 - Administration	1900 - Administration - Records Management	433 - Technology Services - Record Archival System	$	(600.00)	$	(604.64)	$	4.64
1000 - Administration	1900 - Administration - Records Management	900 - Miscellaneous	$	-	$	-	$	-
2000 - Groundwater Conservation	2100 - Program Implementation	110 - Employee Wages - Managerial	$	(13,610.06)	$	(13,261.61)	$	(348.45)
2000 - Groundwater Conservation	2100 - Program Implementation	210 - Legal Services	$	-	$	-	$	-
2000 - Groundwater Conservation	2100 - Program Implementation	215 - Legislative and Administrative Action Representation Services	$	-	$	-	$	-
2000 - Groundwater Conservation	2100 - Program Implementation	363 - Sponsorships and Cost-Sharing - Conservation Promotion	$	(15,000.00)	$	-	$	(15,000.00)
2000 - Groundwater Conservation	2100 - Program Implementation	900 - Miscellaneous	$	-	$	-	$	-
3000 - Groundwater Management	3100 - Program Implementation	110 - Employee Wages - Managerial	$	(13,610.06)	$	(13,261.61)	$	(348.45)
3000 - Groundwater Management	3100 - Program Implementation	120 - Employee Wages - Technicial	$	(51,935.71)	$	(42,298.98)	$	(9,636.73)
3000 - Groundwater Management	3100 - Program Implementation	210 - Legal Services	$	(5,000.00)	$	-	$	(5,000.00)

3000 - Groundwater Management	3100 - Program Implementation	215 - Legislative and Administrative Action Representation Services	$	-	$	-	$	-
3000 - Groundwater Management	3100 - Program Implementation	225 - Professional and Technical Services - Hydrogeologist	$	(1,000.00)	$	(1,000.00)	$	-
3000 - Groundwater Management	3100 - Program Implementation	310 - Supplies	$	-	$	-	$	-
3000 - Groundwater Management	3100 - Program Implementation	315 - Certified Mail and Stamps	$	(1,000.00)	$	-	$	(1,000.00)
3000 - Groundwater Management	3100 - Program Implementation	325 - Fuel	$	(500.00)	$	(323.24)	$	(176.76)
3000 - Groundwater Management	3100 - Program Implementation	330 - Training and Travel Expenses	$	-	$	(495.94)	$	495.94
3000 - Groundwater Management	3100 - Program Implementation	500 - Public Notices and Publications	$	(6,000.00)	$	(3,013.80)	$	(2,986.20)
3000 - Groundwater Management	3100 - Program Implementation	900 - Miscellaneous	$	-	$	-	$	-
4000 - Groundwater Monitoring	4100 - Program Implementation	110 - Employee Wages - Managerial	$	(13,610.06)	$	(13,261.61)	$	(348.45)
4000 - Groundwater Monitoring	4100 - Program Implementation	120 - Employee Wages - Technicial	$	(51,935.71)	$	(9,475.84)	$	(42,459.87)
4000 - Groundwater Monitoring	4100 - Program Implementation	210 - Legal Services	$	-	$	-	$	-
4000 - Groundwater Monitoring	4100 - Program Implementation	215 - Legislative and Administrative Action Representation Services	$	-	$	-	$	-
4000 - Groundwater Monitoring	4100 - Program Implementation	220 - Professional and Technical Services	$	-	$	(469.00)	$	469.00
4000 - Groundwater Monitoring	4100 - Program Implementation	225 - Professional and Technical Services - Hydrogeologist	$	(15,000.00)	$	(15,000.00)	$	-
4000 - Groundwater Monitoring	4100 - Program Implementation	226 - Professional and Technical Services - Laboratory	$	(10,000.00)	$	(551.00)	$	(9,449.00)
4000 - Groundwater Monitoring	4100 - Program Implementation	310 - Supplies	$	-	$	(416.00)	$	416.00
4000 - Groundwater Monitoring	4100 - Program Implementation	311 - Supplies - Field	$	(2,000.00)	$	-	$	(2,000.00)
4000 - Groundwater Monitoring	4100 - Program Implementation	315 - Certified Mail and Stamps	$	(500.00)	$	(413.81)	$	(86.19)
4000 - Groundwater Monitoring	4100 - Program Implementation	325 - Fuel	$	(2,000.00)	$	(1,505.37)	$	(494.63)
4000 - Groundwater Monitoring	4100 - Program Implementation	330 - Training and Travel Expenses	$	-	$	(402.88)	$	402.88
4000 - Groundwater Monitoring	4100 - Program Implementation	360 - Sponsorships and Cost-Sharing	$	-	$	-	$	-
4000 - Groundwater Monitoring	4100 - Program Implementation	410 - Equipment	$	-	$	-	$	-
4000 - Groundwater Monitoring	4100 - Program Implementation	450 - Maintenance and Repair	$	(5,000.00)	$	-	$	(5,000.00)
4000 - Groundwater Monitoring	4100 - Program Implementation	900 - Miscellaneous	$	(1,000.00)	$	-	$	(1,000.00)
4000 - Groundwater Monitoring	4200 - Monitoring Network Development	210 - Legal Services	$	(10,000.00)	$	(210.00)	$	(9,790.00)

4000 - Groundwater Monitoring	4200 - Monitoring Network Development	225 - Professional and Technical Services - Hydrogeologist	$	(25,000.00)	$	(25,000.00)	$	-
4000 - Groundwater Monitoring	4200 - Monitoring Network Development	380 - Aquifer Monitoring Network Construction	$	(50,000.00)	$	-	$	(50,000.00)
4000 - Groundwater Monitoring	4200 - Monitoring Network Development	410 - Equipment			$	-	$	-
4000 - Groundwater Monitoring	4200 - Monitoring Network Development	415 - Equipment - Field	$	(25,000.00)	$	-	$	(25,000.00)
5000 - Groundwater Policy	5100 - Program Implementation	110 - Employee Wages - Managerial	$	(13,610.06)	$	(13,261.61)	$	(348.45)
5000 - Groundwater Policy	5100 - Program Implementation	210 - Legal Services	$	(5,000.00)	$	(750.00)	$	(4,250.00)
5000 - Groundwater Policy	5100 - Program Implementation	215 - Legislative and Administrative Action Representation Services	$	-	$	-	$	-
5000 - Groundwater Policy	5100 - Program Implementation	220 - Professional and Technical Services	$	-	$	-	$	-
5000 - Groundwater Policy	5100 - Program Implementation	225 - Professional and Technical Services - Hydrogeologist	$	-	$	-	$	-
5000 - Groundwater Policy	5100 - Program Implementation	330 - Training and Travel Expenses	$	(500.00)	$	-	$	(500.00)
5000 - Groundwater Policy	5100 - Program Implementation	340 - Membership/Dues/Subscriptions	$	(1,000.00)	$	-	$	(1,000.00)
5000 - Groundwater Policy	5100 - Program Implementation	500 - Public Notices and Publications	$	-	$	-	$	-
5000 - Groundwater Policy	5100 - Program Implementation	900 - Miscellaneous	$	-	$	-	$	-
6000 - Groundwater Protection	6100 - Program Implementation	110 - Employee Wages - Managerial	$	(13,610.06)	$	(13,261.61)	$	(348.45)
6000 - Groundwater Protection	6100 - Program Implementation	120 - Employee Wages - Technicial	$	(51,935.71)	$	(19,889.19)	$	(32,046.52)
6000 - Groundwater Protection	6100 - Program Implementation	210 - Legal Services	$	(5,000.00)	$	(960.00)	$	(4,040.00)
6000 - Groundwater Protection	6100 - Program Implementation	215 - Legislative and Administrative Action Representation Services	$	-	$	-	$	-
6000 - Groundwater Protection	6100 - Program Implementation	220 - Professional and Technical Services	$	-	$	-	$	-
6000 - Groundwater Protection	6100 - Program Implementation	225 - Professional and Technical Services - Hydrogeologist	$	(10,000.00)	$	(9,323.75)	$	(676.25)
6000 - Groundwater Protection	6100 - Program Implementation	310 - Supplies	$	-	$	-	$	-
6000 - Groundwater Protection	6100 - Program Implementation	315 - Certified Mail and Stamps	$	(100.00)	$	-	$	(100.00)
6000 - Groundwater Protection	6100 - Program Implementation	325 - Fuel	$	(500.00)	$	-	$	(500.00)
6000 - Groundwater Protection	6100 - Program Implementation	361 - Sponsorships and Cost-Sharing - Well Plugging	$	(2,500.00)	$	-	$	(2,500.00)
6000 - Groundwater Protection	6100 - Program Implementation	362 - Sponsorships and Cost-Sharing - Borehole Logging	$	(5,000.00)	$	-	$	(5,000.00)
6000 - Groundwater Protection	6100 - Program Implementation	500 - Public Notices and Publications	$	-	$	-	$	-

6000 - Groundwater Protection	6100 - Program Implementation	900 - Miscellaneous	$	-	$	-	$	-
7000 - Groundwater Research	7100 - Program Implementation	110 - Employee Wages - Managerial	$	(13,610.06)	$	(13,261.61)	$	(348.45)
7000 - Groundwater Research	7100 - Program Implementation	210 - Legal Services	$	-	$	-	$	-
7000 - Groundwater Research	7100 - Program Implementation	215 - Legislative and Administrative Action Representation Services	$	-	$	-	$	-
7000 - Groundwater Research	7100 - Program Implementation	220 - Professional and Technical Services	$	-	$	-	$	-
7000 - Groundwater Research	7100 - Program Implementation	225 - Professional and Technical Services - Hydrogeologist	$	-	$	-	$	-
7000 - Groundwater Research	7100 - Program Implementation	900 - Miscellaneous	$	-	$	-	$	-
8000 - Groundwater Resource Planning	8100 - Program Implementation	110 - Employee Wages - Managerial	$	(13,610.06)	$	(13,261.61)	$	(348.45)
8000 - Groundwater Resource Planning	8100 - Program Implementation	210 - Legal Services	$	(1,000.00)	$	-	$	(1,000.00)
8000 - Groundwater Resource Planning	8100 - Program Implementation	215 - Legislative and Administrative Action Representation Services	$	-	$	-	$	-
8000 - Groundwater Resource Planning	8100 - Program Implementation	225 - Professional and Technical Services - Hydrogeologist	$	(5,000.00)	$	(5,000.00)	$	-
8000 - Groundwater Resource Planning	8100 - Program Implementation	310 - Supplies	$	-	$	-	$	-
8000 - Groundwater Resource Planning	8100 - Program Implementation	330 - Training and Travel Expenses	$	(1,000.00)	$	-	$	(1,000.00)
8000 - Groundwater Resource Planning	8100 - Program Implementation	360 - Sponsorships and Cost-Sharing	$	(500.00)	$	(280.96)	$	(219.04)
8000 - Groundwater Resource Planning	8100 - Program Implementation	500 - Public Notices and Publications	$	(1,200.00)	$	-	$	(1,200.00)
8000 - Groundwater Resource Planning	8100 - Program Implementation	900 - Miscellaneous	$	-	$	-	$	-
Total					**$**	**463,762.43**		

Budget Performance related to Revenue Function Report as of June 30, 2023

Row Labels	Sum of Actual	Sum of Performance
1001 - Administration - Revenue Administration	**$ 968,243.71**	**$ (10,870.70)**
0120 - Tax Collections	$ 720,235.69	$ (23,847.68)
0130 - Interest Income	$ 49,929.85	$ (44,929.85)
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$ 94,899.08	$ 143,085.92
0143 - District Fees - Permitting	$ 101,423.47	$ (101,423.47)
0145 - District Fees - Enforcement	$ 80.00	$ (80.00)
0150 - Grants	$ -	$ -
0160 - Refunds	$ 1,675.62	$ (1,675.62)
0215 - District Fees - Legislative Services Cost-Sharing Fees	$ -	$ 18,000.00
Grand Total	**$ 968,243.71**	**$ (10,870.70)**

Note: cash-basis accounting method used to develop reports.
Tab: Budget Performance - Rev - FY22

Budget Performance related to Expense Functions Report as of June 30, 2023

Row Labels	Sum of Actual	Sum of Performance
1100 - Administration - Personnel and Benefits	**$ (181,494.20)**	**$ (77,869.88)**
110 - Employee Wages - Managerial	$ (12,127.50)	$ (1,482.56)
130 - Employee Wages - Administrative	$ (55,269.69)	$ (42,096.39)
140 - Employee Benefits - Health	$ (23,312.66)	$ (12,687.34)
150 - Employee Benefits - Retirement	$ (44,400.55)	$ (19,596.94)
160 - Employment Fees - Social Security and Medicare	$ (17,729.40)	$ (9,967.71)
170 - Employment Fees - State Unemployment	$ (2,066.35)	$ 566.35
190 - Employment Deductions and Withholdings	$ (26,548.87)	$ 26,548.87
900 - Miscellaneous	$ (39.18)	$ 39.18
180 - Employment Fees - Accrued Leave Conversion	$ -	$ (19,193.34)
1200 - Administration - Election Management	**$ (210.00)**	**$ (31,790.00)**
210 - Legal Services	$ (210.00)	$ (790.00)
220 - Professional and Technical Services	$ -	$ (30,000.00)
310 - Supplies	$ -	$ -
500 - Public Notices and Publications	$ -	$ (1,000.00)
900 - Miscellaneous	$ -	$ -
1300 - Administration - Financial Management	**$ (54,505.04)**	**$ (27,394.96)**
210 - Legal Services	$ -	$ (500.00)
220 - Professional and Technical Services	$ (450.00)	$ 450.00
221 - Professional and Technical Services - Auditor	$ -	$ (15,000.00)
222 - Professional and Technical Services - Tax Assessor	$ (46,428.00)	$ (3,572.00)
223 - Professional and Technical Services - Appraisal District	$ (7,102.85)	$ (4,897.15)
224 - Professional and Technical Services - Accountant	$ (475.00)	$ (1,925.00)
500 - Public Notices and Publications	$ -	$ (2,000.00)
900 - Miscellaneous	$ (49.19)	$ 49.19
1400 - Administration - Information Management	**$ (12,572.79)**	**$ (8,207.21)**
210 - Legal Services	$ (557.41)	$ 57.41
220 - Professional and Technical Services	$ -	$ -
310 - Supplies	$ -	$ -
330 - Training and Travel Expenses	$ -	$ -
340 - Membership/Dues/Subscriptions	$ -	$ -
410 - Equipment	$ (1,418.32)	$ 418.32
420 - Software	$ (1,810.04)	$ (1,949.96)
430 - Technology Services	$ (3,064.55)	$ 2,564.55
431 - Technology Services - GIS System	$ -	$ -
432 - Technology Services - Workflow System	$ (810.00)	$ (390.00)
433 - Technology Services - Record Archival System	$ (223.50)	$ 223.50
434 - Technology Services - Website and Email System	$ (604.18)	$ 4.18
435 - Technology Services - Phone System	$ (4,084.79)	$ (6,235.21)
450 - Maintenance and Repair	$ -	$ (500.00)
900 - Miscellaneous	$ -	$ -
436 - Technology Services - Internet	$ -	$ (2,400.00)
1500 - Administration - Meeting Management	**$ (586.40)**	**$ (7,113.60)**
210 - Legal Services	$ (557.42)	$ (6,942.58)
500 - Public Notices and Publications	$ -	$ (200.00)
900 - Miscellaneous	$ (28.98)	$ 28.98

Note: cash-basis accounting method used to develop reports.
Tab: Budget Performance - Exp - FY22

1600 - Administration - Operational and Performance Management	**$ -**	**$ -**
900 - Miscellaneous	$ -	$ -
1700 - Administration - Organizational Management	**$ (11,709.85)**	**$ (62,740.15)**
210 - Legal Services	$ (1,340.02)	$ (659.98)
215 - Legislative and Administrative Action Representation Services	$ -	$ (40,000.00)
220 - Professional and Technical Services	$ -	$ -
230 - Insurance and Bonds	$ (3,291.18)	$ (458.82)
310 - Supplies	$ (6,480.71)	$ 980.71
315 - Certified Mail and Stamps	$ (500.15)	$ (499.85)
330 - Training and Travel Expenses	$ 986.21	$ (1,986.21)
340 - Membership/Dues/Subscriptions	$ -	$ (200.00)
350 - Lease	$ (1,044.00)	$ (18,956.00)
900 - Miscellaneous	$ (40.00)	$ (960.00)
1800 - Administration - Program and Project Management	**$ -**	**$ -**
900 - Miscellaneous	$ -	$ -
1900 - Administration - Records Management	**$ (784.64)**	**$ (4,315.36)**
210 - Legal Services	$ (180.00)	$ (2,320.00)
350 - Lease	$ -	$ (2,000.00)
433 - Technology Services - Record Archival System	$ (604.64)	$ 4.64
900 - Miscellaneous	$ -	$ -
2100 - Program Implementation	**$ (12,127.44)**	**$ (16,482.62)**
110 - Employee Wages - Managerial	$ (12,127.44)	$ (1,482.62)
210 - Legal Services	$ -	$ -
215 - Legislative and Administrative Action Representation Services	$ -	$ -
363 - Sponsorships and Cost-Sharing - Conservation Promotion	$ -	$ (15,000.00)
900 - Miscellaneous	$ -	$ -
3100 - Program Implementation	**$ (56,413.78)**	**$ (22,631.99)**
110 - Employee Wages - Managerial	$ (12,127.44)	$ (1,482.62)
120 - Employee Wages - Technicial	$ (39,453.36)	$ (12,482.35)
210 - Legal Services	$ -	$ (5,000.00)
215 - Legislative and Administrative Action Representation Services	$ -	$ -
225 - Professional and Technical Services - Hydrogeologist	$ (1,000.00)	$ -
310 - Supplies	$ -	$ -
315 - Certified Mail and Stamps	$ -	$ (1,000.00)
330 - Training and Travel Expenses	$ (495.94)	$ 495.94
500 - Public Notices and Publications	$ (3,013.80)	$ (2,986.20)
900 - Miscellaneous	$ -	$ -
325 - Fuel	$ (323.24)	$ (176.76)
4100 - Program Implementation	**$ (41,948.00)**	**$ (59,097.77)**
110 - Employee Wages - Managerial	$ (12,127.44)	$ (1,482.62)
120 - Employee Wages - Technicial	$ (11,062.50)	$ (40,873.21)
210 - Legal Services	$ -	$ -
215 - Legislative and Administrative Action Representation Services	$ -	$ -
220 - Professional and Technical Services	$ (469.00)	$ 469.00
225 - Professional and Technical Services - Hydrogeologist	$ (15,000.00)	$ -
310 - Supplies	$ (416.00)	$ 416.00
315 - Certified Mail and Stamps	$ (413.81)	$ (86.19)
330 - Training and Travel Expenses	$ (402.88)	$ 402.88
360 - Sponsorships and Cost-Sharing	$ -	$ -

Note: cash-basis accounting method used to develop reports.
Tab: Budget Performance - Exp - FY22

410 - Equipment	$ -	$ -
450 - Maintenance and Repair	$ -	$ (5,000.00)
900 - Miscellaneous	$ -	$ (1,000.00)
325 - Fuel	$ (1,505.37)	$ (494.63)
226 - Professional and Technical Services - Laboratory	$ (551.00)	$ (9,449.00)
311 - Supplies - Field	$ -	$ (2,000.00)
5100 - Program Implementation	**$ (12,877.44)**	**$ (7,232.62)**
110 - Employee Wages - Managerial	$ (12,127.44)	$ (1,482.62)
210 - Legal Services	$ (750.00)	$ (4,250.00)
215 - Legislative and Administrative Action Representation Services	$ -	$ -
220 - Professional and Technical Services	$ -	$ -
225 - Professional and Technical Services - Hydrogeologist	$ -	$ -
330 - Training and Travel Expenses	$ -	$ (500.00)
340 - Membership/Dues/Subscriptions	$ -	$ (1,000.00)
500 - Public Notices and Publications	$ -	$ -
900 - Miscellaneous	$ -	$ -
6100 - Program Implementation	**$ (44,308.61)**	**$ (44,337.16)**
110 - Employee Wages - Managerial	$ (12,127.44)	$ (1,482.62)
120 - Employee Wages - Technicial	$ (21,897.42)	$ (30,038.29)
210 - Legal Services	$ (960.00)	$ (4,040.00)
215 - Legislative and Administrative Action Representation Services	$ -	$ -
220 - Professional and Technical Services	$ -	$ -
225 - Professional and Technical Services - Hydrogeologist	$ (9,323.75)	$ (676.25)
310 - Supplies	$ -	$ -
315 - Certified Mail and Stamps	$ -	$ (100.00)
361 - Sponsorships and Cost-Sharing - Well Plugging	$ -	$ (2,500.00)
362 - Sponsorships and Cost-Sharing - Borehole Logging	$ -	$ (5,000.00)
500 - Public Notices and Publications	$ -	$ -
900 - Miscellaneous	$ -	$ -
325 - Fuel	$ -	$ (500.00)
7100 - Program Implementation	**$ (12,127.44)**	**$ (1,482.62)**
110 - Employee Wages - Managerial	$ (12,127.44)	$ (1,482.62)
210 - Legal Services	$ -	$ -
215 - Legislative and Administrative Action Representation Services	$ -	$ -
220 - Professional and Technical Services	$ -	$ -
225 - Professional and Technical Services - Hydrogeologist	$ -	$ -
900 - Miscellaneous	$ -	$ -
8100 - Program Implementation	**$ (17,408.40)**	**$ (4,901.66)**
110 - Employee Wages - Managerial	$ (12,127.44)	$ (1,482.62)
210 - Legal Services	$ -	$ (1,000.00)
215 - Legislative and Administrative Action Representation Services	$ -	$ -
225 - Professional and Technical Services - Hydrogeologist	$ (5,000.00)	$ -
310 - Supplies	$ -	$ -
330 - Training and Travel Expenses	$ -	$ (1,000.00)
360 - Sponsorships and Cost-Sharing	$ (280.96)	$ (219.04)
500 - Public Notices and Publications	$ -	$ (1,200.00)
900 - Miscellaneous	$ -	$ -
Grand Total	**$ (459,074.06)**	**$ (375,597.57)**

Note: cash-basis accounting method used to develop reports.
Tab: Budget Performance - Exp - FY22

Budget Performance by Program and Function Report as of June 30, 2023

Row Labels	Sum of Actual	Sum of Performance
1000 - Administration	**$ 706,380.79**	**$ (230,301.86)**
1001 - Administration - Revenue Administration	$ 968,243.71	$ (10,870.70)
1100 - Administration - Personnel and Benefits	$ (181,494.20)	$ (77,869.88)
1200 - Administration - Election Management	$ (210.00)	$ (31,790.00)
1300 - Administration - Financial Management	$ (54,505.04)	$ (27,394.96)
1400 - Administration - Information Management	$ (12,572.79)	$ (8,207.21)
1500 - Administration - Meeting Management	$ (586.40)	$ (7,113.60)
1600 - Administration - Operational and Performance Management	$ -	$ -
1700 - Administration - Organizational Management	$ (11,709.85)	$ (62,740.15)
1800 - Administration - Program and Project Management	$ -	$ -
1900 - Administration - Records Management	$ (784.64)	$ (4,315.36)
2000 - Groundwater Conservation	**$ (12,127.44)**	**$ (16,482.62)**
2100 - Program Implementation	$ (12,127.44)	$ (16,482.62)
3000 - Groundwater Management	**$ (56,413.78)**	**$ (22,631.99)**
3100 - Program Implementation	$ (56,413.78)	$ (22,631.99)
4000 - Groundwater Monitoring	**$ (67,158.00)**	**$ (143,887.77)**
4100 - Program Implementation	$ (41,948.00)	$ (59,097.77)
4200 - Monitoring Network Development	$ (25,210.00)	$ (84,790.00)
5000 - Groundwater Policy	**$ (12,877.44)**	**$ (7,232.62)**
5100 - Program Implementation	$ (12,877.44)	$ (7,232.62)
6000 - Groundwater Protection	**$ (44,308.61)**	**$ (44,337.16)**
6100 - Program Implementation	$ (44,308.61)	$ (44,337.16)
7000 - Groundwater Research	**$ (12,127.44)**	**$ (1,482.62)**
7100 - Program Implementation	$ (12,127.44)	$ (1,482.62)
8000 - Groundwater Resource Planning	**$ (17,408.40)**	**$ (4,901.66)**
8100 - Program Implementation	$ (17,408.40)	$ (4,901.66)
Grand Total	**$ 483,959.65**	**$ (471,258.27)**

Note: cash-basis accounting method used to develop reports.
Tab: Budget Performance - PF - FY22

Budget Performance by Category Report as of June 30, 2023

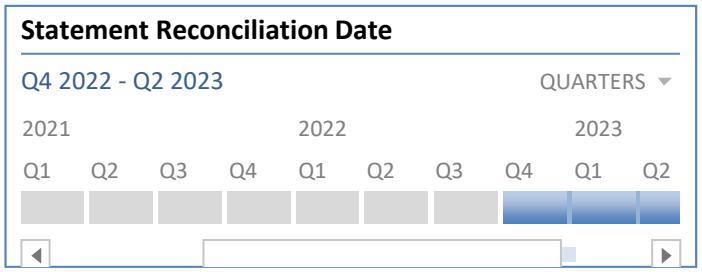
Row Labels	Sum of Actual	Sum of Performance
0120 - Tax Collections	$ 720,235.69	$ (23,847.68)
0130 - Interest Income	$ 49,929.85	$ (44,929.85)
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$ 94,899.08	$ 143,085.92
0143 - District Fees - Permitting	$ 101,423.47	$ (101,423.47)
0145 - District Fees - Enforcement	$ 80.00	$ (80.00)
0150 - Grants	$ -	$ -
0160 - Refunds	$ 1,675.62	$ (1,675.62)
0215 - District Fees - Legislative Services Cost-Sharing Fees	$ -	$ 18,000.00
110 - Employee Wages - Managerial	$ (97,019.61)	$ (11,860.87)
120 - Employee Wages - Technicial	$ (72,413.28)	$ (83,393.85)
130 - Employee Wages - Administrative	$ (55,269.69)	$ (42,096.39)
140 - Employee Benefits - Health	$ (23,312.66)	$ (12,687.34)
150 - Employee Benefits - Retirement	$ (44,400.55)	$ (19,596.94)
160 - Employment Fees - Social Security and Medicare	$ (17,729.40)	$ (9,967.71)
170 - Employment Fees - State Unemployment	$ (2,066.35)	$ 566.35
180 - Employment Fees - Accrued Leave Conversion	$ -	$ (19,193.34)
190 - Employment Deductions and Withholdings	$ (26,548.87)	$ 26,548.87
210 - Legal Services	$ (4,764.85)	$ (35,235.15)
215 - Legislative and Administrative Action Representation Services	$ -	$ (40,000.00)
220 - Professional and Technical Services	$ (919.00)	$ (29,081.00)
221 - Professional and Technical Services - Auditor	$ -	$ (15,000.00)
222 - Professional and Technical Services - Tax Assessor	$ (46,428.00)	$ (3,572.00)
223 - Professional and Technical Services - Appraisal District	$ (7,102.85)	$ (4,897.15)
224 - Professional and Technical Services - Accountant	$ (475.00)	$ (1,925.00)
225 - Professional and Technical Services - Hydrogeologist	$ (55,323.75)	$ (676.25)
226 - Professional and Technical Services - Laboratory	$ (551.00)	$ (9,449.00)
230 - Insurance and Bonds	$ (3,291.18)	$ (458.82)
310 - Supplies	$ (6,896.71)	$ 1,396.71
311 - Supplies - Field	$ -	$ (2,000.00)
315 - Certified Mail and Stamps	$ (913.96)	$ (1,686.04)
325 - Fuel	$ (1,828.61)	$ (1,171.39)
330 - Training and Travel Expenses	$ 87.39	$ (2,587.39)
340 - Membership/Dues/Subscriptions	$ -	$ (1,200.00)
350 - Lease	$ (1,044.00)	$ (20,956.00)
360 - Sponsorships and Cost-Sharing	$ (280.96)	$ (219.04)
361 - Sponsorships and Cost-Sharing - Well Plugging	$ -	$ (2,500.00)
362 - Sponsorships and Cost-Sharing - Borehole Logging	$ -	$ (5,000.00)
363 - Sponsorships and Cost-Sharing - Conservation Promotion	$ -	$ (15,000.00)
380 - Aquifer Monitoring Network Construction	$ -	$ (50,000.00)
410 - Equipment	$ (1,418.32)	$ 418.32

Note: cash-basis accounting method used to develop reports.
Tab: Budget Performance - Cat - FY22

415 - Equipment - Field	$ -	$ (25,000.00)
420 - Software	$ (1,810.04)	$ (1,949.96)
430 - Technology Services	$ (3,064.55)	$ 2,564.55
431 - Technology Services - GIS System	$ -	$ -
432 - Technology Services - Workflow System	$ (810.00)	$ (390.00)
433 - Technology Services - Record Archival System	$ (828.14)	$ 228.14
434 - Technology Services - Website and Email System	$ (604.18)	$ 4.18
435 - Technology Services - Phone System	$ (4,084.79)	$ (6,235.21)
436 - Technology Services - Internet	$ -	$ (2,400.00)
450 - Maintenance and Repair	$ -	$ (5,500.00)
500 - Public Notices and Publications	$ (3,013.80)	$ (7,386.20)
900 - Miscellaneous	$ (157.35)	$ (1,842.65)
Grand Total	**$ 483,959.65**	**$ (471,258.27)**

Note: cash-basis accounting method used to develop reports.
Tab: Budget Performance - Cat - FY22

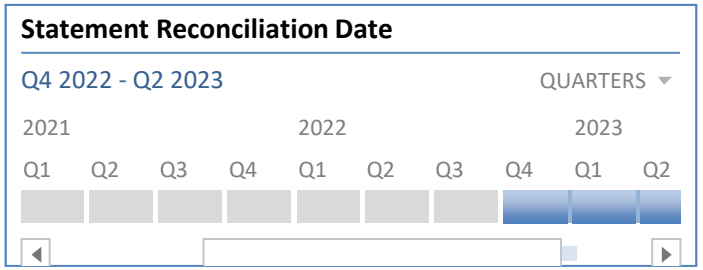
Transaction Summary Report by Bank Account, Transaction Type



Row Labels		Sum of Split Amount
Prosperity 3566		
Credit	$	463,239.38
Debit	$	(519,459.26)
Prosperity 5242		
Credit	$	752,722.72
Debit	$	(1,250,000.00)
Prosperity 7120		
Credit	$	1,577.74
Prosperity CD 0518		
Credit	$	252,110.96
Prosperity CD 0519		
Credit	$	252,110.96
Prosperity CD 0520		
Credit	$	252,047.95
Prosperity CD 0521		
Credit	$	252,047.95
Prosperity CD 2625		
Credit	$	2,239.75
Prosperity CD 2626		
Credit	$	235.65
Prosperity CD 2629		
Credit	$	2,380.77
Prosperity CD 2680		
Credit	$	1,538.20
Prosperity CD 2801		
Credit	$	484.83
Prosperity CD 2802		
Credit	$	484.83
Grand Total	**$**	**463,762.43**

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary by Account

Transaction Summary Report by Budget Program, Function Category



Row Labels		Sum of Split Amount
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	720,235.69
0130 - Interest Income	$	49,929.85
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	94,899.08
0143 - District Fees - Permitting	$	101,423.47
0145 - District Fees - Enforcement	$	80.00
0160 - Refunds	$	1,675.62
1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(13,261.68)
130 - Employee Wages - Administrative	$	(62,970.48)
140 - Employee Benefits - Health	$	(25,812.66)
150 - Employee Benefits - Retirement	$	(49,310.66)
160 - Employment Fees - Social Security and Medicare	$	(20,013.70)
170 - Employment Fees - State Unemployment	$	(2,072.79)
190 - Employment Deductions and Withholdings	$	(21,020.35)
900 - Miscellaneous	$	(39.18)
1200 - Administration - Election Management		
210 - Legal Services	$	(210.00)
1300 - Administration - Financial Management		
220 - Professional and Technical Services	$	(450.00)
222 - Professional and Technical Services - Tax Assessor	$	(46,428.00)
223 - Professional and Technical Services - Appraisal District	$	(7,102.85)
224 - Professional and Technical Services - Accountant	$	(475.00)
900 - Miscellaneous	$	(49.19)
1400 - Administration - Information Management		
210 - Legal Services	$	(557.41)
410 - Equipment	$	(1,418.32)
420 - Software	$	(1,810.04)
430 - Technology Services	$	(3,064.55)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary by Budget

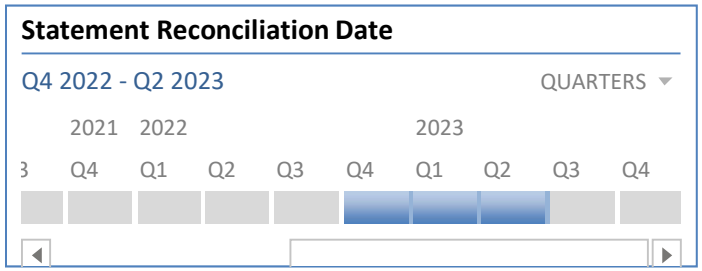
432 - Technology Services - Workflow System	$	(810.00)
433 - Technology Services - Record Archival System	$	(223.50)
434 - Technology Services - Website and Email System	$	(604.18)
435 - Technology Services - Phone System	$	(4,084.79)
1500 - Administration - Meeting Management		
210 - Legal Services	$	(557.42)
900 - Miscellaneous	$	(28.98)
1700 - Administration - Organizational Management		
210 - Legal Services	$	(1,340.02)
230 - Insurance and Bonds	$	(3,291.18)
310 - Supplies	$	(6,480.71)
315 - Certified Mail and Stamps	$	(500.15)
330 - Training and Travel Expenses	$	986.21
350 - Lease	$	(1,044.00)
900 - Miscellaneous	$	(40.00)
1900 - Administration - Records Management		
210 - Legal Services	$	(180.00)
433 - Technology Services - Record Archival System	$	(604.64)
2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(13,261.61)
3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(13,261.61)
120 - Employee Wages - Technicial	$	(42,298.98)
225 - Professional and Technical Services - Hydrogeologist	$	(1,000.00)
325 - Fuel	$	(323.24)
330 - Training and Travel Expenses	$	(495.94)
500 - Public Notices and Publications	$	(3,013.80)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(13,261.61)
120 - Employee Wages - Technicial	$	(9,475.84)
220 - Professional and Technical Services	$	(469.00)
225 - Professional and Technical Services - Hydrogeologist	$	(15,000.00)
226 - Professional and Technical Services - Laboratory	$	(551.00)
310 - Supplies	$	(416.00)
315 - Certified Mail and Stamps	$	(413.81)
325 - Fuel	$	(1,505.37)
330 - Training and Travel Expenses	$	(402.88)
4200 - Monitoring Network Development		
210 - Legal Services	$	(210.00)
225 - Professional and Technical Services - Hydrogeologist	$	(25,000.00)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary by Budget

5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(13,261.61)
210 - Legal Services	$	(750.00)
6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(13,261.61)
120 - Employee Wages - Technicial	$	(19,889.19)
210 - Legal Services	$	(960.00)
225 - Professional and Technical Services - Hydrogeologist	$	(9,323.75)
7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(13,261.61)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(13,261.61)
225 - Professional and Technical Services - Hydrogeologist	$	(5,000.00)
360 - Sponsorships and Cost-Sharing	$	(280.96)
Grand Total	**$**	**463,762.43**

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary by Budget

Transaction Summary Report by Program, Function, Category



Row Labels		Sum of Split Amount
TR-20220930-01-D	**$**	**(5,993.04)**
Timothy A. Andruss		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(1,080.16)
140 - Employee Benefits - Health	$	(480.00)
150 - Employee Benefits - Retirement	$	(665.38)
160 - Employment Fees - Social Security and Medicare	$	(654.94)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	4,448.59
2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,080.16)
3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,080.16)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,080.16)
5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,080.16)
6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,080.16)
7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,080.16)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,080.16)
TR-20220930-02-D	**$**	**(3,385.98)**
Michael A. Benavides		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(480.00)
150 - Employee Benefits - Retirement	$	(322.27)
160 - Employment Fees - Social Security and Medicare	$	(320.17)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,921.74
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,092.64)
6000 - Groundwater Protection		
6100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,092.64)
TR-20220930-03-D	**$**	**(3,096.02)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(299.02)
150 - Employee Benefits - Retirement	$	(3,883.33)
160 - Employment Fees - Social Security and Medicare	$	-
170 - Employment Fees - State Unemployment	$	(480.00)
190 - Employment Deductions and Withholdings	$	(297.07)
1700 - Administration - Organizational Management		
330 - Training and Travel Expenses	$	1,863.40
TR-20220930-04-D	**$**	**(3,222.60)**
Timothy C. Faltysek		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(480.00)

150 - Employee Benefits - Retirement	$	(322.27)
160 - Employment Fees - Social Security and Medicare	$	(308.72)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,073.67
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(4,185.28)
TR-20220930-05-D	**$**	**(2,742.53)**
Willie Immenhauser		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(263.18)
150 - Employee Benefits - Retirement	$	(3,417.92)
160 - Employment Fees - Social Security and Medicare	$	-
170 - Employment Fees - State Unemployment	$	(480.00)
190 - Employment Deductions and Withholdings	$	(261.47)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
120 - Employee Wages - Technicial	$	1,680.04
TR-20220930-06-D	**$**	**(2,643.79)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(3,247.20)
140 - Employee Benefits - Health	$	(480.00)
150 - Employee Benefits - Retirement	$	(250.03)
160 - Employment Fees - Social Security and Medicare	$	(248.40)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,581.84
TR-20221004-01-C	**$**	**984.96**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	984.96

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

TR-20221005-01-D	**$**	**(5.09)**
Xerox Corporation		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(5.09)
TR-20221005-02-D	**$**	**(165.00)**
Pace Analytical		
Prosperity 3566		
Operating		
4000 - Groundwater Monitoring		
4100 - Program Implementation		
226 - Professional and Technical Services - Laboratory	$	(165.00)
TR-20221005-04-D	**$**	**(692.25)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
330 - Training and Travel Expenses	$	(692.25)
TR-20221005-05-D	**$**	**(150.30)**
Office Systems		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(150.30)
TR-20221006-01-D	**$**	**(6,959.31)**
IRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(6,959.31)
TR-20221011-01-D	**$**	**(3,036.42)**
TML Health Benefits Pool		

Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(3,036.42)
TR-20221012-03-D	**$**	**(95.00)**
Catherine Ozment		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
224 - Professional and Technical Services - Accountant	$	(95.00)
TR-20221013-01-D	**$**	**(387.45)**
AT&T		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
435 - Technology Services - Phone System	$	(387.45)
TR-20221013-02-D	**$**	**(1,806.97)**
Chase Card Services - Acct 6174		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
420 - Software	$	(124.48)
430 - Technology Services	$	(202.23)
432 - Technology Services - Workflow System	$	(90.00)
433 - Technology Services - Record Archival System	$	(136.50)
435 - Technology Services - Phone System	$	(798.68)
1700 - Administration - Organizational Management		
310 - Supplies	$	(455.08)
TR-20221013-03-D	**$**	**(3,078.18)**
TML IRP		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
230 - Insurance and Bonds	$	(3,078.18)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

TR-20221017-01-C	**$**	**1,067.50**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
160 - Employment Fees - Social Security and Medicare	$	1,067.50
TR-20221017-01-D	**$**	**(3,500.17)**
TCDRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(3,500.17)
TR-20221019-01-C	**$**	**5,060.40**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	5,060.40
TR-20221019-02-C	**$**	**5,639.38**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	5,639.38
TR-20221021-01-D	**$**	**(1,672.25)**
Allison, Bass and Magee, LLP		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
210 - Legal Services	$	(557.41)
1500 - Administration - Meeting Management		
210 - Legal Services	$	(557.42)
1700 - Administration - Organizational Management		

210 - Legal Services	$	(557.42)
TR-20221021-02-D	**$**	**(9.00)**
Kenneth Eller		
Prosperity 3566		
Operating		
1000 - Administration		
1500 - Administration - Meeting Management		
900 - Miscellaneous	$	(9.00)
TR-20221027-01-C	**$**	**6,911.44**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
150 - Employee Benefits - Retirement	$	6,911.44
TR-20221027-02-C	**$**	**6,998.87**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	6,998.87
TR-20221027-03-C	**$**	**2,006.48**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	2,006.48
TR-20221027-04-C	**$**	**2,500.00**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	2,500.00
TR-20221031-01-C	**$**	**25.75**

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

VCGCD
Prosperity CD 2625
Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0130 - Interest Income $ 25.75

TR-20221031-02-C **$ 25.88**
VCGCD
Prosperity CD 2626
Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0130 - Interest Income $ 25.88

TR-20221031-03-C **$ 45.56**
VCGCD
Prosperity CD 2629
Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0130 - Interest Income $ 45.56

TR-20221031-04-C **$ 53.23**
VCGCD
Prosperity CD 2801
Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0130 - Interest Income $ 53.23

TR-20221031-05-C **$ 53.23**
VCGCD
Prosperity CD 2802
Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0130 - Interest Income $ 53.23

TR-20221031-06-C **$ 32.52**
VCGCD
Prosperity CD 2680
Reserve

1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	32.52
TR-20221031-07-C	**$**	**88.92**
VCGCD		
Prosperity 7120		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	88.92
TR-20221031-08	**$**	**2,272.32**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	2,272.32
TR-20221031-09-C	**$**	**18.84**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	18.84
TR-20221101-01-D	**$**	**(6,321.20)**
Timothy A. Andruss		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(1,134.18)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(698.65)
160 - Employment Fees - Social Security and Medicare	$	(687.99)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	4,638.81
2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)

3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
TR-20221101-02-D	**$**	**(11,150.51)**
Timothy A. Andruss		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(1,973.90)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(1,215.93)
160 - Employment Fees - Social Security and Medicare	$	(1,208.04)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	7,564.80
2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,973.92)
3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,973.92)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,973.92)
5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,973.92)

6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,973.92)
7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,973.92)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,973.92)
TR-20221101-03-D	**$**	**(3,393.31)**
Michael A. Benavides		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(323.01)
160 - Employment Fees - Social Security and Medicare	$	(320.92)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,945.58
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,097.48)
6000 - Groundwater Protection		
6100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,097.48)
TR-20221101-04-D	**$**	**(4,204.83)**
Michael A. Benavides		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(405.29)
160 - Employment Fees - Social Security and Medicare	$	(402.65)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,366.54
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,631.72)
6000 - Groundwater Protection		

6100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,631.71)
TR-20221101-05-D	**$**	**(3,406.14)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(330.46)
150 - Employee Benefits - Retirement	$	(4,291.67)
160 - Employment Fees - Social Security and Medicare	$	-
170 - Employment Fees - State Unemployment	$	(500.00)
190 - Employment Deductions and Withholdings	$	(328.32)
1700 - Administration - Organizational Management		
330 - Training and Travel Expenses	$	2,044.31
TR-20221101-06-D	**$**	**(3,230.48)**
Timothy C. Faltysek		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(323.01)
160 - Employment Fees - Social Security and Medicare	$	(309.50)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,096.99
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(4,194.96)
TR-20221102-01-C	**$**	**7,147.92**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	7,147.92
TR-20221102-02-C	**$**	**7,326.25**
VCGCD		
Prosperity 3566		

Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	7,326.25
TR-20221102-03-C	**$**	**21,635.98**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	21,635.98
TR-20221102-07-D	**$**	**(3,017.53)**
Willie Immenhauser		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(291.06)
160 - Employment Fees - Social Security and Medicare	$	(289.17)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,842.70
4000 - Groundwater Monitoring		
4100 - Program Implementation		
120 - Employee Wages - Technicial	$	(3,780.00)
TR-20221102-08-D	**$**	**(2,649.19)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(3,254.16)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(250.57)
160 - Employment Fees - Social Security and Medicare	$	(248.95)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,604.49
TR-20221103-01-C	**$**	**5,244.23**
VCGCD		

Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	5,244.23
TR-20221107-01-D	**$**	**(186.20)**
Victoria Advocate		
Prosperity 3566		
Operating		
3000 - Groundwater Management		
3100 - Program Implementation		
500 - Public Notices and Publications	$	(186.20)
TR-20221107-02-D	**$**	**(288.64)**
AT&T		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
435 - Technology Services - Phone System	$	(288.64)
TR-20221107-03-D	**$**	**(95.00)**
Catherine Ozment		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
224 - Professional and Technical Services - Accountant	$	(95.00)
TR-20221107-04-D	**$**	**(151.18)**
Office Systems		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(151.18)
TR-20221107-05-D	**$**	**(629.38)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		

1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(629.38)
TR-20221107-06-D	**$**	**(240.96)**
UHV		
Prosperity 3566		
Operating		
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
360 - Sponsorships and Cost-Sharing	$	(240.96)
TR-20221110-01-C	**$**	**12,073.49**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	12,073.49
TR-20221117-01-C	**$**	**1,650.00**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0160 - Refunds	$	1,650.00
TR-20221121-01-D	**$**	**(15.40)**
Xerox Corporation		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(15.40)
TR-20221121-02-D	**$**	**(853.61)**
Chase Card Services - Acct 6174		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
420 - Software	$	(124.48)
430 - Technology Services	$	(202.23)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

432 - Technology Services - Workflow System	$	(90.00)
433 - Technology Services - Record Archival System	$	(14.50)
435 - Technology Services - Phone System	$	104.83
1700 - Administration - Organizational Management		
310 - Supplies	$	(68.89)
350 - Lease	$	(122.00)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
315 - Certified Mail and Stamps	$	(136.57)
325 - Fuel	$	(199.77)
TR-20221122-01-C	**$**	**10,494.05**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	10,494.05
TR-20221123-01-C	**$**	**5,681.22**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	5,681.22
TR-20221130-01-C	**$**	**26.62**
VCGCD		
Prosperity CD 2625		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	26.62
TR-20221130-01-D	**$**	**(3,036.42)**
TML Health Benefits Pool		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(3,036.42)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

TR-20221130-02-C	**$**	**26.74**
VCGCD		
Prosperity CD 2626		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	26.74
TR-20221130-02-D	**$**	**(6,330.18)**
TCDRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(6,330.18)
TR-20221130-03-C	**$**	**296.00**
VCGCD		
Prosperity CD 2629		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	296.00
TR-20221130-03-D	**$**	**(13,544.89)**
IRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(13,544.89)
TR-20221130-04-C	**$**	**55.02**
VCGCD		
Prosperity CD 2801		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	55.02
TR-20221130-04-D	**$**	**(6,321.20)**
Timothy A. Andruss		
Prosperity 3566		

Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(1,134.18)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(698.65)
160 - Employment Fees - Social Security and Medicare	$	(687.99)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	4,638.81
2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
TR-20221130-05-C	**$**	**55.02**
VCGCD		
Prosperity CD 2802		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	55.02
TR-20221130-05-D	**$**	**(3,545.03)**
Michael A. Benavides		
Prosperity 3566		
Operating		

1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(338.39)
160 - Employment Fees - Social Security and Medicare	$	(336.20)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,024.28
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,197.36)
6000 - Groundwater Protection		
6100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,197.36)
TR-20221130-06-C	**$**	**33.61**
VCGCD		
Prosperity CD 2680		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	33.61
TR-20221130-06-D	**$**	**(3,406.15)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(4,291.67)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(330.46)
160 - Employment Fees - Social Security and Medicare	$	(328.32)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,044.30
TR-20221130-07-C	**$**	**165.37**
VCGCD		
Prosperity 7120		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	165.37

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

TR-20221130-07-D	**$**	**(3,382.20)**
Timothy C. Faltysek		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(338.39)
160 - Employment Fees - Social Security and Medicare	$	(324.78)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,175.69
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(4,394.72)
TR-20221130-08-C	**$**	**3,274.28**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	3,274.28
TR-20221130-08-D	**$**	**(3,154.24)**
Willie Immenhauser		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(304.92)
160 - Employment Fees - Social Security and Medicare	$	(302.94)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,913.62
4000 - Groundwater Monitoring		
4100 - Program Implementation		
120 - Employee Wages - Technicial	$	(3,960.00)
TR-20221130-09-C	**$**	**15.64**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		

1001 - Administration - Revenue Administration		
0130 - Interest Income	$	15.64
TR-20221130-09-D	**$**	**(2,769.84)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(3,409.12)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(262.50)
160 - Employment Fees - Social Security and Medicare	$	(260.79)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,662.57
TR-20221201-01-C	**$**	**8,515.42**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	8,515.42
TR-20221201-02-C	**$**	**1,603.70**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	1,603.70
TR-20221202-01-C	**$**	**25.76**
VCGCD		
Prosperity CD 2625		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	25.76
TR-20221202-02-C	**$**	**25.89**
VCGCD		
Prosperity CD 2626		

Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	25.89
TR-20221202-03-C	**$**	**286.99**
VCGCD		
Prosperity CD 2629		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	286.99
TR-20221202-04-C	**$**	**25.62**
VCGCD		
Prosperity 3566		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0160 - Refunds	$	25.62
TR-20221205-01-D	**$**	**(3,036.42)**
TML Health Benefits Pool		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(3,036.42)
TR-20221207-01-D	**$**	**(7,480.61)**
IRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(7,480.61)
TR-20221208-01-C	**$**	**53.26**
VCGCD		
Prosperity CD 2801		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		

0130 - Interest Income	$	53.26
TR-20221208-02-C	**$**	**53.26**
VCGCD		
Prosperity CD 2802		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	53.26
TR-20221209-01-C	**$**	**17,204.37**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	17,204.37
TR-20221215-01-D	**$**	**(3,789.50)**
TCDRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(3,749.50)
UHV		
Prosperity 3566		
Operating		
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
360 - Sponsorships and Cost-Sharing	$	(40.00)
TR-20221215-02-D	**$**	**(95.00)**
Catherine Ozment		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
224 - Professional and Technical Services - Accountant	$	(95.00)
TR-20221215-03D	**$**	**(46,428.00)**
VCTAC		
Prosperity 3566		

Operating		
1000 - Administration		
1300 - Administration - Financial Management		
222 - Professional and Technical Services - Tax Assessor	$	(46,428.00)
TR-20221215-04-D	**$**	**(448.40)**
Victoria Advocate		
Prosperity 3566		
Operating		
3000 - Groundwater Management		
3100 - Program Implementation		
500 - Public Notices and Publications	$	(448.40)
TR-20221215-05-D	**$**	**(1,359.59)**
Chase Card Services - Acct 6174		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
420 - Software	$	(124.48)
430 - Technology Services	$	(204.82)
432 - Technology Services - Workflow System	$	(90.00)
433 - Technology Services - Record Archival System	$	(14.50)
435 - Technology Services - Phone System	$	(105.60)
1700 - Administration - Organizational Management		
310 - Supplies	$	(334.22)
350 - Lease	$	(122.00)
900 - Miscellaneous	$	(40.00)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
315 - Certified Mail and Stamps	$	(277.24)
325 - Fuel	$	(46.73)
TR-20221215-06-D	**$**	**(587.31)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
330 - Training and Travel Expenses	$	(587.31)
TR-20221219-01-C	**$**	**18,702.92**
VCGCD		

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	18,702.92
TR-20221222-01-C	**$**	**32.54**
VCGCD		
Prosperity CD 2680		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	32.54
TR-20221227-01-C	**$**	**32,771.44**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	32,771.44
TR-20221229-01-D	**$**	**(493.38)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
330 - Training and Travel Expenses	$	(493.38)
TR-20221230-01-C	**$**	**66,901.95**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	66,901.95
TR-20221231-01-C	**$**	**171.76**
VCGCD		
Prosperity 7120		
Operating		
1000 - Administration		

1001 - Administration - Revenue Administration		
0130 - Interest Income	$	171.76
TR-20221231-02-C	**$**	**3,505.02**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	3,505.02
TR-20221231-03-C	**$**	**9.21**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	9.21
TR-20230101-01-D	**$**	**(6,405.89)**
Timothy A. Andruss		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(1,134.18)
140 - Employee Benefits - Health	$	-
150 - Employee Benefits - Retirement	$	(698.65)
160 - Employment Fees - Social Security and Medicare	$	(703.11)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	4,069.24
2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)

6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
TR-20230101-02-D	**$**	**(3,565.46)**
Michael A. Benavides		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(338.39)
160 - Employment Fees - Social Security and Medicare	$	(340.58)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,008.23
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,197.36)
6000 - Groundwater Protection		
6100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,197.36)
TR-20230101-03-D	**$**	**(3,416.36)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(4,291.67)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(330.47)
160 - Employment Fees - Social Security and Medicare	$	(332.60)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,038.38
TR-20230101-04-D	**$**	**(3,402.61)**
Timothy C. Faltysek		

Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(338.39)
160 - Employment Fees - Social Security and Medicare	$	(329.18)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,159.68
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(4,394.72)
TR-20230101-05-D	**$**	**(3,164.45)**
Willie Immenhauser		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(304.92)
160 - Employment Fees - Social Security and Medicare	$	(306.90)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,907.37
4000 - Groundwater Monitoring		
4100 - Program Implementation		
120 - Employee Wages - Technicial	$	(3,960.00)
TR-20230101-06-D	**$**	**(2,721.95)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(3,328.35)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(256.29)
160 - Employment Fees - Social Security and Medicare	$	(257.95)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,620.64
TR-20230104-01-C	**$**	**15,205.44**
VCGCD		

Prosperity 5242
Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0120 - Tax Collections $ 15,205.44

TR-20230111-01-C **$ 44,987.44**
VCGCD
Prosperity 5242
Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0120 - Tax Collections $ 44,987.44

TR-20230113-01-D **$ (3,739.25)**
TCDRS
Prosperity 3566
Operating
1000 - Administration
1100 - Administration - Personnel and Benefits
190 - Employment Deductions and Withholdings $ (3,739.25)

TR-20230117-01-C **$ 5,425.60**
VCGCD
Prosperity 3566
Operating
1000 - Administration
1001 - Administration - Revenue Administration
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees $ 5,425.60

TR-20230117-02-C **$ 5,411.51**
VCGCD
Prosperity 3566
Operating
1000 - Administration
1001 - Administration - Revenue Administration
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees $ 5,411.51

TR-20230117-03-C **$ 5,979.75**
VCGCD
Prosperity 3566
Operating
1000 - Administration

1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	5,979.75
TR-20230117-04-C	**$**	**1,331.49**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	1,331.49
TR-20230120-01-D	**$**	**(1,577.61)**
Coastal Office Solutions		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(1,577.61)
TR-20230120-02-D	**$**	**(359.85)**
Coastal Office Solutions		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(359.85)
TR-20230120-03-D	**$**	**(3,836.70)**
VCAD		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
223 - Professional and Technical Services - Appraisal District	$	(3,836.70)
TR-20230120-04-D	**$**	**(482.60)**
Allison, Bass and Magee, LLP		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
210 - Legal Services	$	(482.60)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

TR-20230120-06-D	**$**	**(412.20)**
Victoria Advocate		
Prosperity 3566		
Operating		
3000 - Groundwater Management		
3100 - Program Implementation		
500 - Public Notices and Publications	$	(412.20)
TR-20230120-07-D	**$**	**(301.60)**
Victoria Advocate		
Prosperity 3566		
Operating		
3000 - Groundwater Management		
3100 - Program Implementation		
500 - Public Notices and Publications	$	(301.60)
TR-20230120-08-D	**$**	**(101.52)**
Office Systems		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(101.52)
TR-20230120-09-D	**$**	**(13.00)**
Xerox Corporation		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(13.00)
TR-20230120-10-D	**$**	**(95.00)**
Catherine Ozment		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
224 - Professional and Technical Services - Accountant	$	(95.00)
TR-20230120-11-D	**$**	**(1,748.97)**
Chase Card Services - Acct 6174		
Prosperity 3566		

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

Operating		
1000 - Administration		
1400 - Administration - Information Management		
420 - Software	$	(277.93)
430 - Technology Services	$	(51.37)
432 - Technology Services - Workflow System	$	(90.00)
433 - Technology Services - Record Archival System	$	(14.50)
435 - Technology Services - Phone System	$	(662.90)
1700 - Administration - Organizational Management		
310 - Supplies	$	(338.94)
350 - Lease	$	(122.00)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
330 - Training and Travel Expenses	$	(191.33)
TR-20230120-12-D	**$**	**(250.00)**
Pace Analytical		
Prosperity 3566		
Operating		
4000 - Groundwater Monitoring		
4100 - Program Implementation		
226 - Professional and Technical Services - Laboratory	$	(250.00)
TR-20230120-13-D	**$**	**(9.99)**
Kenneth Eller		
Prosperity 3566		
Operating		
1000 - Administration		
1500 - Administration - Meeting Management		
900 - Miscellaneous	$	(9.99)
TR-20230123-01-C	**$**	**151,839.46**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	151,839.46
TR-20230124-01-C	**$**	**250,000.00**
VCGCD		
Prosperity 3566		
Operating		

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

1000 - Administration		
1300 - Administration - Financial Management		
900 - Miscellaneous	$	250,000.00
TR-20230124-01-D	**$**	**(250,000.00)**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1300 - Administration - Financial Management		
900 - Miscellaneous	$	(250,000.00)
TR-20230126-01-C	**$**	**20.00**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0143 - District Fees - Permitting	$	20.00
TR-20230126-02-C	**$**	**7,519.34**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	7,519.34
TR-20230126-03-C	**$**	**7,614.85**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	7,614.85
TR-20230126-05-C	**$**	**7,433.25**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	7,433.25

TR-20230126-06-C	**$**	**1,331.48**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	1,331.48
TR-20230126-07-C	**$**	**7,263.13**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	7,263.13
TR-20230126-08-C	**$**	**7,309.79**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	7,309.79
TR-20230126-09-C	**$**	**7,266.98**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	7,266.98
TR-20230126-10-C	**$**	**1,331.48**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0140 - District Fees - GCD Management and Operations Cost-Sharing Fees	$	1,331.48
TR-20230131-01-C	**$**	**181.18**
VCGCD		

Prosperity 7120		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	181.18
TR-20230131-01-D	**$**	**(1,983.36)**
TML Health Benefits Pool		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(1,983.36)
TR-20230131-02-C	**$**	**4,162.15**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	4,162.15
TR-20230131-02-D	**$**	**(7,385.77)**
IRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(7,385.77)
TR-20230131-03	**$**	**10.66**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	10.66
TR-20230131-03-D	**$**	**(35.00)**
Prosperity Bank		
Prosperity 3566		
Operating		
1000 - Administration		

1300 - Administration - Financial Management		
900 - Miscellaneous	$	(35.00)
TR-20230131-04-C	**$**	**366.09**
VCGCD		
Prosperity CD 2625		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	366.09
TR-20230131-04-D	**$**	**(3.00)**
Prosperity Bank		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
900 - Miscellaneous	$	(3.00)
TR-20230131-05-C	**$**	**26.75**
VCGCD		
Prosperity CD 2626		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	26.75
TR-20230131-06-C	**$**	**297.09**
VCGCD		
Prosperity CD 2629		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	297.09
TR-20230131-07-C	**$**	**55.04**
VCGCD		
Prosperity CD 2801		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	55.04

TR-20230131-08-C	**$**	**55.04**
VCGCD		
Prosperity CD 2802		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	55.04
TR-20230131-09-C	**$**	**33.63**
VCGCD		
Prosperity CD 2680		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	33.63
TR-20230201-01-D	**$**	**(6,246.19)**
Timothy A. Andruss		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(1,134.18)
140 - Employee Benefits - Health	$	-
150 - Employee Benefits - Retirement	$	(1,288.42)
160 - Employment Fees - Social Security and Medicare	$	(694.12)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	4,809.72
2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
TR-20230201-02-D	**$**	**(3,488.10)**
Michael A. Benavides		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(624.05)
160 - Employment Fees - Social Security and Medicare	$	(340.61)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,371.28
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,197.36)
6000 - Groundwater Protection		
6100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,197.36)
TR-20230201-03-D	**$**	**(3,340.81)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(4,291.67)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(609.41)
160 - Employment Fees - Social Security and Medicare	$	(332.61)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,392.88
TR-20230201-04-D	**$**	**(2,277.18)**
Timothy C. Faltysek		
Prosperity 3566		
Operating		
1000 - Administration		

1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(2,993.65)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(425.10)
160 - Employment Fees - Social Security and Medicare	$	(220.60)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,862.17
TR-20230201-05-D	**$**	**(3,094.76)**
Willie Immenhauser		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(562.32)
160 - Employment Fees - Social Security and Medicare	$	(306.90)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	2,234.46
4000 - Groundwater Monitoring		
4100 - Program Implementation		
120 - Employee Wages - Technicial	$	(3,960.00)
TR-20230201-06-D	**$**	**(2,723.48)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(3,409.12)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(484.10)
160 - Employment Fees - Social Security and Medicare	$	(264.20)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,933.94
TR-20230203-01-C	**$**	**124,583.52**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	124,583.52

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

TR-20230203-02-C	**$**	**4,653.93**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	4,653.93
TR-20230203-03-C	**$**	**366.95**
VCGCD		
Prosperity CD 2625		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	366.95
TR-20230203-04-C	**$**	**26.76**
VCGCD		
Prosperity CD 2626		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	26.76
TR-20230203-05-C	**$**	**297.65**
VCGCD		
Prosperity CD 2629		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	297.65
TR-20230208-01-C	**$**	**55.05**
VCGCD		
Prosperity CD 2801		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	55.05
TR-20230208-02-C	**$**	**55.05**
VCGCD		

Prosperity CD 2802		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	55.05
TR-20230217-01-D	**$**	**(6.00)**
Victoria County Clerk		
Prosperity 3566		
Operating		
3000 - Groundwater Management		
3100 - Program Implementation		
500 - Public Notices and Publications	$	(6.00)
TR-20230217-02-D	**$**	**(95.00)**
Catherine Ozment		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
224 - Professional and Technical Services - Accountant	$	(95.00)
TR-20230217-03-D	**$**	**(13.00)**
Xerox Corporation		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(13.00)
TR-20230217-04-D	**$**	**(290.56)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
330 - Training and Travel Expenses	$	(290.56)
TR-20230217-05-D	**$**	**(111.69)**
Office Systems		
Prosperity 3566		
Operating		
1000 - Administration		

1700 - Administration - Organizational Management		
310 - Supplies	$	(111.69)
TR-20230217-06-D	**$**	**(32.50)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
330 - Training and Travel Expenses	$	(32.50)
TR-20230217-07-D	**$**	**(259.81)**
Office Systems		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(259.81)
TR-20230217-08-D	**$**	**(327.60)**
Victoria Advocate		
Prosperity 3566		
Operating		
3000 - Groundwater Management		
3100 - Program Implementation		
500 - Public Notices and Publications	$	(327.60)
TR-20230217-09-D	**$**	**(323.75)**
WSP		
Prosperity 3566		
Operating		
6000 - Groundwater Protection		
6100 - Program Implementation		
225 - Professional and Technical Services - Hydrogeologist	$	(323.75)
TR-20230217-10-D	**$**	**(1,522.25)**
Prosperity Bank		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
420 - Software	$	(164.48)
430 - Technology Services	$	(48.78)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

432 - Technology Services - Workflow System	$	(90.00)
433 - Technology Services - Record Archival System	$	(14.50)
435 - Technology Services - Phone System	$	(386.50)
1700 - Administration - Organizational Management		
310 - Supplies	$	(399.43)
350 - Lease	$	(122.00)
3000 - Groundwater Management		
3100 - Program Implementation		
330 - Training and Travel Expenses	$	(104.80)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
330 - Training and Travel Expenses	$	(191.76)
TR-20230221-01-C	**$**	**137,448.60**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	137,448.60
TR-20230222-01-C	**$**	**33.63**
VCGCD		
Prosperity CD 2680		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	33.63
TR-20230224-01-C	**$**	**0.09**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
900 - Miscellaneous	$	0.09
TR-20230228-01-C	**$**	**163.90**
VCGCD		
Prosperity 7120		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		

0130 - Interest Income	$	163.90
TR-20230228-01-D	**$**	**(6,029.72)**
Timothy A. Andruss		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(1,134.18)
140 - Employee Benefits - Health	$	-
150 - Employee Benefits - Retirement	$	(1,288.42)
160 - Employment Fees - Social Security and Medicare	$	(595.72)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	4,927.79
2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
TR-20230228-02-C	**$**	**3,947.35**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	3,947.35

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

TR-20230228-02-D	**$**	**(2,733.16)**
Michael A. Benavides		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
160 - Employment Fees - Social Security and Medicare	$	(259.48)
170 - Employment Fees - State Unemployment	$	(4.00)
190 - Employment Deductions and Withholdings	$	2,025.53
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(1,997.61)
6000 - Groundwater Protection		
6100 - Program Implementation		
120 - Employee Wages - Technicial	$	(1,997.60)
TR-20230228-03-C	**$**	**31.41**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	31.41
TR-20230228-03-D	**$**	**(3,942.44)**
Michael A. Benavides		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
150 - Employee Benefits - Retirement	$	(568.12)
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(4,291.67)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(609.41)
160 - Employment Fees - Social Security and Medicare	$	(281.14)
170 - Employment Fees - State Unemployment	$	(4.29)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

190 - Employment Deductions and Withholdings	$	2,312.19
TR-20230228-04-C	**$**	**0.08**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
900 - Miscellaneous	$	0.08
TR-20230228-04-D	**$**	**(5,364.93)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(2,905.31)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(440.71)
160 - Employment Fees - Social Security and Medicare	$	(201.04)
170 - Employment Fees - State Unemployment	$	(3.10)
190 - Employment Deductions and Withholdings	$	1,540.73
Willie Immenhauser		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(511.92)
160 - Employment Fees - Social Security and Medicare	$	(483.19)
170 - Employment Fees - State Unemployment	$	(3.60)
190 - Employment Deductions and Withholdings	$	1,986.26
4000 - Groundwater Monitoring		
4100 - Program Implementation		
120 - Employee Wages - Technicial	$	(3,343.05)
TR-20230228-06-D	**$**	**(4,613.67)**
TML Health Benefits Pool		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(4,613.67)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

TR-20230228-07-D	**$**	**(6,974.25)**
IRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(6,974.25)
TR-20230228-08-D	**$**	**(5,961.99)**
TCDRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(5,961.99)
TR-20230228-09-D	**$**	**(0.17)**
Intuit		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
900 - Miscellaneous	$	(0.17)
TR-20230303-01-C	**$**	**5,686.36**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	5,686.36
TR-20230303-02-C	**$**	**2,146.94**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	2,122.77
Prosperity CD 2626		
Reserve		
1000 - Administration		

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

1001 - Administration - Revenue Administration		
0130 - Interest Income	$	24.17
TR-20230303-03-C	**$**	**269.35**
VCGCD		
Prosperity CD 2629		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	269.35
TR-20230317-01-D	**$**	**(320.24)**
Office Systems		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(96.91)
TML IRP		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
230 - Insurance and Bonds	$	(213.00)
Xerox Corporation		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
310 - Supplies	$	(10.33)
TR-20230317-02-D	**$**	**(136.00)**
Pace Analytical		
Prosperity 3566		
Operating		
4000 - Groundwater Monitoring		
4100 - Program Implementation		
226 - Professional and Technical Services - Laboratory	$	(136.00)
TR-20230317-05-D	**$**	**(1,263.23)**
Chase Card Services - Acct 6174		
Prosperity 3566		
Operating		

1000 - Administration		
1400 - Administration - Information Management		
420 - Software	$	(253.83)
430 - Technology Services	$	(48.78)
432 - Technology Services - Workflow System	$	(90.00)
433 - Technology Services - Record Archival System	$	(14.50)
435 - Technology Services - Phone System	$	(105.85)
1700 - Administration - Organizational Management		
310 - Supplies	$	(28.80)
350 - Lease	$	(139.00)
3000 - Groundwater Management		
3100 - Program Implementation		
330 - Training and Travel Expenses	$	(98.54)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
310 - Supplies	$	(416.00)
325 - Fuel	$	(67.93)
TR-20230322-01-C	**$**	**6,518.73**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	6,518.73
TR-20230324-01	**$**	**20.00**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0145 - District Fees - Enforcement	$	20.00
TR-20230329-01-D	**$**	**(9.98)**
Xerox Corporation		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
410 - Equipment	$	(9.98)
TR-20230329-02-D	**$**	**(319.64)**

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
330 - Training and Travel Expenses	$	(319.64)
TR-20230329-03-D	**$**	**(403.68)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		
330 - Training and Travel Expenses	$	(403.68)
TR-20230330-01-D	**$**	**(1,000,000.00)**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1300 - Administration - Financial Management		
900 - Miscellaneous	$	(1,000,000.00)
TR-20230331-01-C	**$**	**332.21**
VCGCD		
Prosperity CD 2625		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	332.21
TR-20230331-02-D	**$**	**(1,940.79)**
TML Health Benefits Pool		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(1,940.79)
TR-20230331-03-D	**$**	**(5,797.18)**
IRS		
Prosperity 3566		
Operating		

1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(5,797.18)
TR-20230331-04-C	**$**	**49.74**
VCGCD		
Prosperity CD 2801		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	49.74
TR-20230331-04-D	**$**	**(5,102.74)**
TCDRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(5,102.74)
TR-20230331-05-C	**$**	**49.74**
VCGCD		
Prosperity CD 2802		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	49.74
TR-20230331-05-D	**$**	**(18.66)**
Intuit		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
900 - Miscellaneous	$	(18.66)
TR-20230331-06-C	**$**	**30.39**
VCGCD		
Prosperity CD 2680		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	30.39

TR-20230331-07-C	**$**	**184.57**
VCGCD		
Prosperity 7120		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	184.57
TR-20230331-08-C	**$**	**4,588.10**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	4,588.10
TR-20230331-09-C	**$**	**30.18**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	30.18
TR-20230331-10-C	**$**	**250,000.00**
VCGCD		
Prosperity CD 0518		
Reserve		
1000 - Administration		
1300 - Administration - Financial Management		
900 - Miscellaneous	$	250,000.00
TR-20230331-11-C	**$**	**250,000.00**
VCGCD		
Prosperity CD 0519		
Reserve		
1000 - Administration		
1300 - Administration - Financial Management		
900 - Miscellaneous	$	250,000.00
TR-20230331-12-C	**$**	**250,000.00**
VCGCD		

Prosperity CD 0520		
Reserve		
1000 - Administration		
1300 - Administration - Financial Management		
900 - Miscellaneous	$	250,000.00
TR-20230331-13-C	**$**	**250,000.00**
VCGCD		
Prosperity CD 0521		
Reserve		
1000 - Administration		
1300 - Administration - Financial Management		
900 - Miscellaneous	$	250,000.00
TR-20230403-01-C	**$**	**5,068.39**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	5,068.39
TR-20230403-03-D	**$**	**(5,981.12)**
Timothy A. Andruss		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(1,134.18)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(1,288.42)
160 - Employment Fees - Social Security and Medicare	$	(644.32)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	5,524.99
2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
TR-20230403-047-D	**$**	**(2,847.44)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(3,550.13)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(505.79)
160 - Employment Fees - Social Security and Medicare	$	(252.36)
170 - Employment Fees - State Unemployment	$	(6.82)
190 - Employment Deductions and Withholdings	$	1,967.66
TR-20230403-04-D	**$**	**(3,746.99)**
Michael A. Benavides		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(643.23)
160 - Employment Fees - Social Security and Medicare	$	(326.88)
170 - Employment Fees - State Unemployment	$	0.61
190 - Employment Deductions and Withholdings	$	2,217.11
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,247.30)
6000 - Groundwater Protection		
6100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,247.30)

TR-20230403-05-D	**$**	**(3,351.35)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(4,291.67)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(609.41)
160 - Employment Fees - Social Security and Medicare	$	(304.11)
170 - Employment Fees - State Unemployment	$	0.42
190 - Employment Deductions and Withholdings	$	2,353.42
TR-20230403-06-D	**$**	**(3,238.08)**
Willie Immenhauser		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(587.52)
160 - Employment Fees - Social Security and Medicare	$	(293.33)
170 - Employment Fees - State Unemployment	$	(7.92)
190 - Employment Deductions and Withholdings	$	(3,992.85)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
120 - Employee Wages - Technicial	$	2,143.54
TR-20230410-01-C	**$**	**1,018.99**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	1,018.99
TR-20230410-01-D	**$**	**(102.18)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1700 - Administration - Organizational Management		

330 - Training and Travel Expenses	$	(102.18)
TR-20230410-02-D	**$**	**(477.00)**
Victoria Advocate		
Prosperity 3566		
Operating		
3000 - Groundwater Management		
3100 - Program Implementation		
500 - Public Notices and Publications	$	(477.00)
TR-20230410-03-D	**$**	**(3,266.15)**
VCAD		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
223 - Professional and Technical Services - Appraisal District	$	(3,266.15)
TR-20230410-04-D	**$**	**(55,000.00)**
Intera		
Prosperity 3566		
Operating		
3000 - Groundwater Management		
3100 - Program Implementation		
225 - Professional and Technical Services - Hydrogeologist	$	(1,000.00)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
225 - Professional and Technical Services - Hydrogeologist	$	(15,000.00)
4200 - Monitoring Network Development		
225 - Professional and Technical Services - Hydrogeologist	$	(25,000.00)
6000 - Groundwater Protection		
6100 - Program Implementation		
225 - Professional and Technical Services - Hydrogeologist	$	(9,000.00)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
225 - Professional and Technical Services - Hydrogeologist	$	(5,000.00)
TR-20230410-05-D	**$**	**(925.23)**
Office Systems		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		

410 - Equipment	$	(925.23)
TR-20230421-01-D	**$**	**(2,610.00)**
Allison, Bass and Magee, LLP		
Prosperity 3566		
Operating		
1000 - Administration		
1200 - Administration - Election Management		
210 - Legal Services	$	(210.00)
1700 - Administration - Organizational Management		
210 - Legal Services	$	(300.00)
1900 - Administration - Records Management		
210 - Legal Services	$	(180.00)
4000 - Groundwater Monitoring		
4200 - Monitoring Network Development		
210 - Legal Services	$	(210.00)
5000 - Groundwater Policy		
5100 - Program Implementation		
210 - Legal Services	$	(750.00)
6000 - Groundwater Protection		
6100 - Program Implementation		
210 - Legal Services	$	(960.00)
TR-20230421-02-D	**$**	**(602.60)**
Timothy A. Andruss		
Prosperity 3566		
Operating		
4000 - Groundwater Monitoring		
4100 - Program Implementation		
325 - Fuel	$	(602.60)
TR-20230421-03-D	**$**	**(6.00)**
Victoria County Clerk		
Prosperity 3566		
Operating		
3000 - Groundwater Management		
3100 - Program Implementation		
500 - Public Notices and Publications	$	(6.00)
TR-20230421-04-D	**$**	**(2,246.79)**
Chase Card Services - Acct 6174		
Prosperity 3566		
Operating		

1000 - Administration		
1400 - Administration - Information Management		
420 - Software	$	(355.03)
430 - Technology Services	$	(48.78)
432 - Technology Services - Workflow System	$	(90.00)
434 - Technology Services - Website and Email System	$	(182.20)
435 - Technology Services - Phone System	$	(673.14)
1700 - Administration - Organizational Management		
310 - Supplies	$	(524.34)
350 - Lease	$	(139.00)
1900 - Administration - Records Management		
433 - Technology Services - Record Archival System	$	(14.50)
3000 - Groundwater Management		
3100 - Program Implementation		
330 - Training and Travel Expenses	$	(111.91)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
325 - Fuel	$	(107.89)
TR-20230421-05-D	**$**	**(419.06)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
4000 - Groundwater Monitoring		
4100 - Program Implementation		
325 - Fuel	$	(419.06)
TR-20230421-06-D	**$**	**(10.69)**
Xerox Corporation		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
410 - Equipment	$	(10.69)
TR-20230421-07-D	**$**	**(9.99)**
Kenneth Eller		
Prosperity 3566		
Operating		
1000 - Administration		
1500 - Administration - Meeting Management		
900 - Miscellaneous	$	(9.99)

TR-20230427-01-C	**$**	**5,356.99**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0143 - District Fees - Permitting	$	5,356.99
TR-20230427-02-C	**$**	**5,419.50**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0143 - District Fees - Permitting	$	5,419.50
TR-20230427-03-C	**$**	**5,625.56**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0143 - District Fees - Permitting	$	5,625.56
TR-20230427-04-C	**$**	**13,750.00**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0143 - District Fees - Permitting	$	13,750.00
TR-20230427-05-C	**$**	**7,310.80**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0143 - District Fees - Permitting	$	7,310.80
TR-20230427-06-C	**$**	**7,166.25**
VCGCD		
Prosperity 3566		

Operating
1000 - Administration
1001 - Administration - Revenue Administration
0143 - District Fees - Permitting $ 7,166.25

TR-20230427-07-C **$ 7,372.38**
VCGCD
Prosperity 3566
Operating
1000 - Administration
1001 - Administration - Revenue Administration
0143 - District Fees - Permitting $ 7,372.38

TR-20230427-08-C **$ 13,750.00**
VCGCD
Prosperity 3566
Operating
1000 - Administration
1001 - Administration - Revenue Administration
0143 - District Fees - Permitting $ 13,750.00

TR-20230427-09-C **$ 7,313.30**
VCGCD
Prosperity 3566
Operating
1000 - Administration
1001 - Administration - Revenue Administration
0143 - District Fees - Permitting $ 7,313.30

TR-20230427-10-C **$ 7,238.79**
VCGCD
Prosperity 3566
Operating
1000 - Administration
1001 - Administration - Revenue Administration
0143 - District Fees - Permitting $ 7,238.79

TR-20230427-11-C **$ 7,269.90**
VCGCD
Prosperity 3566
Operating
1000 - Administration
1001 - Administration - Revenue Administration

0143 - District Fees - Permitting	$	7,269.90
TR-20230427-12-C	**$**	**13,750.00**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0143 - District Fees - Permitting	$	13,750.00
TR-20230430-01-D	**$**	**(6,460.00)**
IRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(6,460.00)
TR-20230430-02-D	**$**	**(2,560.45)**
TML Health Benefits Pool		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(2,560.45)
TR-20230430-03-D	**$**	**(5,439.62)**
TCDRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(5,439.62)
TR-20230430-04-D	**$**	**(244.18)**
IRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(244.18)
TR-20230430-05-D	**$**	**(52.39)**

Texas Workforce Commission		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(52.39)
TR-20230430-07-C	**$**	**204.70**
VCGCD		
Prosperity 7120		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	204.70
TR-20230430-08-C	**$**	**3,507.96**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	3,507.96
TR-20230430-09-C	**$**	**23.25**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	23.25
TR-20230431-01-C	**$**	**368.58**
VCGCD		
Prosperity CD 2625		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	368.58
TR-20230431-02-C	**$**	**26.77**
VCGCD		
Prosperity CD 2626		
Reserve		

1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	26.77
TR-20230431-03-C	**$**	**298.71**
VCGCD		
Prosperity CD 2629		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	298.71
TR-20230431-04-C	**$**	**55.08**
VCGCD		
Prosperity CD 2801		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	55.08
TR-20230431-05-C	**$**	**55.08**
VCGCD		
Prosperity CD 2802		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	55.08
TR-20230431-06-C	**$**	**450.89**
VCGCD		
Prosperity CD 2680		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	450.89
TR-20230501-01-C	**$**	**6,006.49**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	6,006.49

TR-20230501-02-C	**$**	**599.51**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	599.51
TR-20230502-01-D	**$**	**(6,015.82)**
Timothy A. Andruss		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(1,134.18)
140 - Employee Benefits - Health	$	-
150 - Employee Benefits - Retirement	$	(1,288.42)
160 - Employment Fees - Social Security and Medicare	$	(595.72)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	4,941.69
2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

TR-20230502-02-D	**$**	**(3,280.94)**
Michael A. Benavides		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(505.99)
160 - Employment Fees - Social Security and Medicare	$	(265.02)
170 - Employment Fees - State Unemployment	$	(5.99)
190 - Employment Deductions and Withholdings	$	1,991.26
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(1,997.60)
6000 - Groundwater Protection		
6100 - Program Implementation		
120 - Employee Wages - Technicial	$	(1,997.60)
TR-20230502-03-D	**$**	**(3,367.75)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(4,291.67)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(607.27)
160 - Employment Fees - Social Security and Medicare	$	(287.71)
170 - Employment Fees - State Unemployment	$	(6.44)
190 - Employment Deductions and Withholdings	$	2,325.34
TR-20230502-04-D	**$**	**(2,849.44)**
Willie Immenhauser		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(509.40)
160 - Employment Fees - Social Security and Medicare	$	(239.71)
170 - Employment Fees - State Unemployment	$	(540.00)
190 - Employment Deductions and Withholdings	$	(3,420.00)
4000 - Groundwater Monitoring		

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

4100 - Program Implementation		
120 - Employee Wages - Technicial	$	2,359.67
TR-20230502-05-D	**$**	**(2,503.92)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(2,579.70)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(504.65)
160 - Employment Fees - Social Security and Medicare	$	(206.55)
170 - Employment Fees - State Unemployment	$	(4.65)
190 - Employment Deductions and Withholdings	$	1,291.63
TR-20230504-01-C	**$**	**357.52**
VCGCD		
Prosperity CD 2625		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	357.52
TR-20230504-02-C	**$**	**25.91**
VCGCD		
Prosperity CD 2626		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	25.91
TR-20230504-03-C	**$**	**289.61**
VCGCD		
Prosperity CD 2629		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	289.61
TR-20230508-01-C	**$**	**53.31**
VCGCD		
Prosperity CD 2801		

Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0130 - Interest Income $ 53.31

TR-20230508-02-C **$ 53.31**
VCGCD
Prosperity CD 2802
Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0130 - Interest Income $ 53.31

TR-20230509-01-C **$ 1,997.14**
VCGCD
Prosperity 5242
Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0120 - Tax Collections $ 1,997.14

TR-20230516-01-C **$ 20.00**
VCGCD
Prosperity 3566
Operating
1000 - Administration
1001 - Administration - Revenue Administration
0143 - District Fees - Permitting $ 20.00

TR-20230516-01-D **$ (531.20)**
Victoria Advocate
Prosperity 3566
Operating
3000 - Groundwater Management
3100 - Program Implementation
500 - Public Notices and Publications $ (531.20)

TR-20230516-02-C **$ 20.00**
VCGCD
Prosperity 3566
Operating
1000 - Administration
1001 - Administration - Revenue Administration

0143 - District Fees - Permitting	$	20.00
TR-20230516-02-D	**$**	**(250.00)**
Streamline		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
434 - Technology Services - Website and Email System	$	(250.00)
TR-20230516-03-C	**$**	**20.00**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0143 - District Fees - Permitting	$	20.00
TR-20230516-03-D	**$**	**(155.38)**
Office Systems		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
410 - Equipment	$	(155.38)
TR-20230516-04-C	**$**	**20.00**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0143 - District Fees - Permitting	$	20.00
TR-20230516-04-D	**$**	**(31.67)**
Xerox Corporation		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
410 - Equipment	$	(31.67)
TR-20230516-05-C	**$**	**827.95**

VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	827.95
TR-20230516-05-D	**$**	**(2,343.66)**
Chase Card Services - Acct 6174		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
420 - Software	$	(200.79)
430 - Technology Services	$	(48.78)
432 - Technology Services - Workflow System	$	(90.00)
434 - Technology Services - Website and Email System	$	(45.99)
435 - Technology Services - Phone System	$	(390.43)
1700 - Administration - Organizational Management		
310 - Supplies	$	(144.53)
315 - Certified Mail and Stamps	$	(500.15)
350 - Lease	$	(139.00)
1900 - Administration - Records Management		
433 - Technology Services - Record Archival System	$	(590.14)
3000 - Groundwater Management		
3100 - Program Implementation		
330 - Training and Travel Expenses	$	(132.46)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
325 - Fuel	$	(61.39)
TR-20230516-06-C	**$**	**206.01**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	206.01
TR-20230519-01-C	**$**	**461.86**
VCGCD		
Prosperity 5242		
Reserve		

1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	461.86
TR-20230522-01-C	**$**	**437.58**
VCGCD		
Prosperity CD 2680		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	437.58
TR-20230525-01-C	**$**	**2,205.76**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	2,205.76
TR-20230531-01-C	**$**	**2,634.85**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	2,422.95
Prosperity 7120		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	211.90
TR-20230531-01-D	**$**	**(6,096.34)**
IRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(5,871.34)
TAGD		
Prosperity 3566		
Operating		

1000 - Administration		
1300 - Administration - Financial Management		
220 - Professional and Technical Services	$	(225.00)
TR-20230531-02-C	**$**	**3,659.22**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	3,659.22
TR-20230531-02-D	**$**	**(2,803.95)**
TAGD		
Prosperity 3566		
Operating		
1000 - Administration		
1300 - Administration - Financial Management		
220 - Professional and Technical Services	$	(225.00)
TML		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(2,578.95)
TR-20230531-03-C	**$**	**25.32**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	25.32
TR-20230531-03-D	**$**	**(5,088.57)**
TCDRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(5,088.57)
TR-20230531-04-D	**$**	**(12,000.00)**

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

TCDRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
150 - Employee Benefits - Retirement	$	(12,000.00)
TR-20230531-05-D	**$**	**(9.33)**
Intuit		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
900 - Miscellaneous	$	(9.33)
TR-20230531-06-D	**$**	**(11.19)**
Intuit		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
900 - Miscellaneous	$	(11.19)
TR-20230601-01-C	**$**	**793.10**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	793.10
TR-20230601-01-D	**$**	**(5,981.13)**
Timothy A. Andruss		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(1,134.18)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(1,288.42)
160 - Employment Fees - Social Security and Medicare	$	(644.33)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	5,524.99

2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
TR-20230601-02-D	**$**	**(3,734.41)**
Michael A. Benavides		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(643.23)
160 - Employment Fees - Social Security and Medicare	$	(326.88)
170 - Employment Fees - State Unemployment	$	0.61
190 - Employment Deductions and Withholdings	$	2,217.11
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,241.01)
6000 - Groundwater Protection		
6100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,241.01)
TR-20230601-03-D	**$**	**(3,351.33)**
Caitlynn Davenport		
Prosperity 3566		

Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(4,291.67)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(624.13)
160 - Employment Fees - Social Security and Medicare	$	(304.13)
170 - Employment Fees - State Unemployment	$	(6.44)
190 - Employment Deductions and Withholdings	$	2,375.04
TR-20230601-04-D	**$**	**(3,238.09)**
Willie Immenhauser		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(587.53)
160 - Employment Fees - Social Security and Medicare	$	(293.33)
170 - Employment Fees - State Unemployment	$	(7.92)
190 - Employment Deductions and Withholdings	$	(3,992.85)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
120 - Employee Wages - Technicial	$	2,143.54
TR-20230601-05-D	**$**	**(2,847.45)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(3,550.13)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(505.79)
160 - Employment Fees - Social Security and Medicare	$	(252.36)
170 - Employment Fees - State Unemployment	$	(6.82)
190 - Employment Deductions and Withholdings	$	1,967.65
TR-20230601-06-D	**$**	**(842.24)**
Jace Stevens		
Prosperity 3566		
Operating		
1000 - Administration		

1100 - Administration - Personnel and Benefits		
160 - Employment Fees - Social Security and Medicare	$	(69.76)
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(386.24)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
120 - Employee Wages - Technicial	$	(386.24)
TR-20230608-01-C	**$**	**1,960.10**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	1,960.10
TR-20230609-01-C	**$**	**399.54**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	399.54
TR-20230612-01-C	**$**	**149.24**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	149.24
TR-20230614-01-C	**$**	**20.00**
VCGCD		
Prosperity 3566		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0145 - District Fees - Enforcement	$	20.00
TR-20230614-02-C	**$**	**20.00**
VCGCD		

Prosperity 3566		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0145 - District Fees - Enforcement	$	20.00
TR-20230620-01-C	**$**	**20.00**
VCGCD		
Prosperity 3566		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0145 - District Fees - Enforcement	$	20.00
TR-20230620-01-D	**$**	**(323.24)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
3000 - Groundwater Management		
3100 - Program Implementation		
325 - Fuel	$	(323.24)
TR-20230620-02-D	**$**	**(469.00)**
Pace Analytical		
Prosperity 3566		
Operating		
4000 - Groundwater Monitoring		
4100 - Program Implementation		
220 - Professional and Technical Services	$	(469.00)
TR-20230620-03-D	**$**	**(2,160.00)**
Streamline		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
430 - Technology Services	$	(2,160.00)
TR-20230620-04-D	**$**	**(31.67)**
Xerox Corporation		
Prosperity 3566		
Operating		
1000 - Administration		

1400 - Administration - Information Management		
410 - Equipment	$	(31.67)
TR-20230620-05-D	**$**	**(317.60)**
Victoria Advocate		
Prosperity 3566		
Operating		
3000 - Groundwater Management		
3100 - Program Implementation		
500 - Public Notices and Publications	$	(317.60)
TR-20230620-06-D	**$**	**(253.70)**
Office Systems		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
410 - Equipment	$	(253.70)
TR-20230620-07-D	**$**	**(2,382.05)**
Chase Card Services - Acct 6174		
Prosperity 3566		
Operating		
1000 - Administration		
1400 - Administration - Information Management		
420 - Software	$	(184.54)
430 - Technology Services	$	(48.78)
432 - Technology Services - Workflow System	$	(90.00)
433 - Technology Services - Record Archival System	$	(14.50)
434 - Technology Services - Website and Email System	$	(125.99)
435 - Technology Services - Phone System	$	(390.43)
1700 - Administration - Organizational Management		
310 - Supplies	$	(1,320.79)
350 - Lease	$	(139.00)
3000 - Groundwater Management		
3100 - Program Implementation		
330 - Training and Travel Expenses	$	(48.23)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
330 - Training and Travel Expenses	$	(19.79)
TR-20230623-01-C	**$**	**240.85**
VCGCD		

Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	240.85
TR-20230626-01-C	**$**	**354.25**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	354.25
TR-20230627-01-C	**$**	**467.93**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	467.93
TR-20230629-01-C	**$**	**195.65**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0120 - Tax Collections	$	195.65
TR-20230630-01-C	**$**	**18.72**
VCGCD		
Prosperity 3566		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	18.72
TR-20230630-01-D	**$**	**(5,981.12)**
Timothy A. Andruss		
Prosperity 3566		
Operating		
1000 - Administration		

1100 - Administration - Personnel and Benefits		
110 - Employee Wages - Managerial	$	(1,134.18)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(1,288.42)
160 - Employment Fees - Social Security and Medicare	$	(644.33)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	5,525.00
2000 - Groundwater Conservation		
2100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
3000 - Groundwater Management		
3100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
5000 - Groundwater Policy		
5100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
6000 - Groundwater Protection		
6100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
7000 - Groundwater Research		
7100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
8000 - Groundwater Resource Planning		
8100 - Program Implementation		
110 - Employee Wages - Managerial	$	(1,134.17)
TR-20230630-02-C	**$**	**205.44**
VCGCD		
Prosperity 7120		
Operating		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	205.44
TR-20230630-02-D	**$**	**(3,583.85)**
Michael A. Benavides		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		

140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(2,206.56)
160 - Employment Fees - Social Security and Medicare	$	(338.39)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	(340.58)
3000 - Groundwater Management		
3100 - Program Implementation		
120 - Employee Wages - Technicial	$	(2,206.55)
6000 - Groundwater Protection		
6100 - Program Implementation		
120 - Employee Wages - Technicial	$	2,008.23
TR-20230630-03-C	**$**	**3,570.63**
VCGCD		
Prosperity 5242		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	3,570.63
TR-20230630-03-D	**$**	**(3,351.34)**
Caitlynn Davenport		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(4,291.67)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(624.13)
160 - Employment Fees - Social Security and Medicare	$	(304.13)
170 - Employment Fees - State Unemployment	$	(6.44)
190 - Employment Deductions and Withholdings	$	2,375.03
TR-20230630-04-C	**$**	**370.27**
VCGCD		
Prosperity CD 2625		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	370.27
TR-20230630-04-D	**$**	**(3,103.49)**
Willie Immenhauser		

Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(306.90)
160 - Employment Fees - Social Security and Medicare	$	(562.32)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	(3,960.00)
4000 - Groundwater Monitoring		
4100 - Program Implementation		
120 - Employee Wages - Technicial	$	2,225.73
TR-20230630-05-C	**$**	**26.78**
VCGCD		
Prosperity CD 2626		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	26.78
TR-20230630-05-D	**$**	**(2,728.35)**
Candace Whittley		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
130 - Employee Wages - Administrative	$	(3,409.12)
140 - Employee Benefits - Health	$	(500.00)
150 - Employee Benefits - Retirement	$	(484.10)
160 - Employment Fees - Social Security and Medicare	$	(264.20)
170 - Employment Fees - State Unemployment	$	-
190 - Employment Deductions and Withholdings	$	1,929.07
TR-20230630-06-C	**$**	**299.81**
VCGCD		
Prosperity CD 2629		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	299.81
TR-20230630-06-D	**$**	**(1,449.07)**

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

Jace Stevens
Prosperity 3566
Operating
1000 - Administration
1100 - Administration - Personnel and Benefits
160 - Employment Fees - Social Security and Medicare $ (170.93)
3000 - Groundwater Management
3100 - Program Implementation
120 - Employee Wages - Technicial $ (639.07)
4000 - Groundwater Monitoring
4100 - Program Implementation
120 - Employee Wages - Technicial $ (639.07)

TR-20230630-07-C **$ 453.41**
VCGCD
Prosperity CD 2680
Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0130 - Interest Income $ 453.41

TR-20230630-07-D **$ (11.19)**
Intuit
Prosperity 3566
Operating
1000 - Administration
1300 - Administration - Financial Management
900 - Miscellaneous $ (11.19)

TR-20230630-08-C **$ 55.10**
VCGCD
Prosperity CD 2801
Reserve
1000 - Administration
1001 - Administration - Revenue Administration
0130 - Interest Income $ 55.10

TR-20230630-08-D **$ (6,595.10)**
IRS
Prosperity 3566
Operating
1000 - Administration
1100 - Administration - Personnel and Benefits

190 - Employment Deductions and Withholdings	$	(6,595.10)
TR-20230630-09-C	**$**	**55.10**
VCGCD		
Prosperity CD 2802		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	55.10
TR-20230630-09-D	**$**	**(2,578.95)**
TML		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(2,578.95)
TR-20230630-10-C	**$**	**2,110.96**
VCGCD		
Prosperity CD 0518		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	2,110.96
TR-20230630-10-D	**$**	**(5,427.86)**
TCDRS		
Prosperity 3566		
Operating		
1000 - Administration		
1100 - Administration - Personnel and Benefits		
190 - Employment Deductions and Withholdings	$	(5,427.86)
TR-20230630-11-C	**$**	**2,110.96**
VCGCD		
Prosperity CD 0519		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	2,110.96
TR-20230630-12-C	**$**	**2,047.95**

VCGCD		
Prosperity CD 0520		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	2,047.95
TR-20230630-13-C	**$**	**2,047.95**
VCGCD		
Prosperity CD 0521		
Reserve		
1000 - Administration		
1001 - Administration - Revenue Administration		
0130 - Interest Income	$	2,047.95
Grand Total	**$**	**463,762.43**

Note: cash-basis accounting method used to develop reports.
Tab: Transaction Summary - List

Victoria County Groundwater Conservation District

INVESTMENT REPORT
Fiscal Year 2022-2023
As of June 30, 2023

Detailed Description of Investment Position - PFIA 2256.023(b)(1)
The investment position of the Victoria County Groundwater Conservation District (District) during the reporting period was restricted to: 1) cash deposited into an interest-bearing, demand deposit account for the purposes of holding monies of the Operating Fund, 2) cash deposited into an interest-bearing, money-market account for the purposes of holding monies of the Operating Fund, 3) cash deposited into an interest-bearing, money-market account for the purposes of holding monies of the Reserve Fund, and 4) cash deposited into certificates of deposit for the purposes of holding monies of the Reserve Fund. The accounts are secured by FDIC insurance and pledged collateral in accordance with state law and the Investment Policy of the District.

During the reporting period, the District deposited cash in an interest-bearing, demand deposit account at Prosperity Bank (Account Number: 7060023566) for the purpose of holding monies of the Operating Fund, receiving interest deposits of the account, receiving deposits of district fees, and paying of bills and invoices of the District.

During the reporting period, the District deposited cash in an interest-bearing, money market account at Prosperity Bank (Number: 218927120) for the purpose of holding monies of the Operating Fund, and receiving interest deposits of the account.

During the reporting period, the District deposited cash in an interest-bearing, money market account at Prosperity Bank (Number: 807725242) for the purpose of holding monies of the Reserve Fund, receiving interest deposits of the account, and receiving ad valorem tax revenue deposits.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002625) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002626) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002629) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002680) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002801) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002802) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 9570010518) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 9570010519) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 9570010520) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 9570010521) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

Summary of Pooled Fund Groups – PFIA 2256.023(b)(4)(A-D)
The District did not invest any portion of its funds in any pooled fund groups during the reporting period.

Beginning Market Value of Investments in Pooled Fund Groups:	$0.00
Additions and Changes to the Market Value of Investments in Pooled Fund Groups:	$0.00
Ending Market Value of Investments in Pooled Fund Groups:	$0.00
Fully Accrued Interest of Investments in Pooled Fund Groups:	$0.00

Book and Market Values by Asset Type and Fund Type Statement – PFIA 2256.023(b)(5)

Asset Type	Institution	Fund Types	Yield	Book Value	Market Value
Demand Deposit Account*	Prosperity Bank (7060023566)	Operating	0.15%	$124,305.29	$124,305.29
Money Market Account*	Prosperity Bank (218927120)	Operating	2.17%	$116,460.72	$116,460.72
Money Market Bank Account*	Prosperity Bank (807725242)	Reserve	3.04%	$1,453,342.13	$1,453,342.13
Certificate of Deposit Account*	Prosperity Bank (280002625)	Reserve	2.75%	$158,904.19	$158,904.19
Certificate of Deposit Account*	Prosperity Bank (280002626)	Reserve	0.20%	$157,657.08	$157,657.08
Certificate of Deposit Account*	Prosperity Bank (280002629)	Reserve	2.20%	$160,753.93	$160,753.93
Certificate of Deposit Account*	Prosperity Bank (280002680)	Reserve	3.35%	$159,813.92	$159,813.92
Certificate of Deposit Account*	Prosperity Bank (280002801)	Reserve	0.25%	$259,555.78	$259,555.78
Certificate of Deposit Account*	Prosperity Bank (280002802)	Reserve	0.25%	$259,555.78	$259,555.78

Certificate of Deposit Account*	Prosperity Bank (9570010518)	Reserve	3.35%	$252,110.96	$252,110.96
Certificate of Deposit Account*	Prosperity Bank (9570010519)	Reserve	3.35%	$252,110.96	$252,110.96
Certificate of Deposit Account*	Prosperity Bank (9570010520)	Reserve	3.25%	$252,047.95	$252,047.95
Certificate of Deposit Account*	Prosperity Bank (9570010521)	Reserve	3.25%	$252,047.95	$252,047.95
		Total:		$3,858,666.64	$3,858,666.64

* Based on monthly statements provided by banking institutions.

Summary of Insurance and Collateral by Institution

Institution	FDIC Insurance	Market Value of Pledged Securities as Collateral	Total Insurance and Pledged Securities
Prosperity Bank	$250,000.00	$3,758,551.65	$4,008,551.65

Asset Maturity Date Statement – PFIA 2256.0023(b)(6)

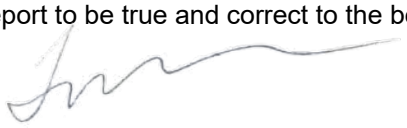
Asset	Maturity Date
Operating Funds in Interest-Bearing Demand Deposit Account	N/A
Operating Funds in Interest-Bearing Money Market Account	N/A
Reserve Funds in Interest-Bearing Money Market Account	N/A
Interest-Bearing Certificate of Deposit Account #280002625	12/4/2023
Interest-Bearing Certificate of Deposit Account #280002626	8/4/2023
Interest-Bearing Certificate of Deposit Account #280002629	9/4/2024
Interest-Bearing Certificate of Deposit Account #280002680	3/22/2025
Interest-Bearing Certificate of Deposit Account #280002801	1/8/2024
Interest-Bearing Certificate of Deposit Account #280002802	1/8/2024
Interest-Bearing Certificate of Deposit Account #9570010518	3/30/2025
Interest-Bearing Certificate of Deposit Account #9570010519	3/30/2025
Interest-Bearing Certificate of Deposit Account #9570010520	3/30/2024
Interest-Bearing Certificate of Deposit Account #9570010521	3/30/2024

Investments for Funds Statement – PFIA 2256.0023(b)(7)

Investment	Fund
Cash Deposits in Interest-Bearing Demand Deposit Account	Operating
Cash Deposits in Interest-Bearing Money Market Account	Operating
Cash Deposits in Interest-Bearing Money Market Account	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002625	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002626	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002629	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002680	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002801	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002802	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #9570010518	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #9570010519	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #9570010520	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #9570010521	Reserve

Statement of Compliance – PFIA 2256.0023(b)(8)
The portfolio of the District is believed to be in compliance with the District's Investment Strategy expressed in the District's Investment Policy and the Public Funds Investment Act.

Statement regarding Report Preparation – PFIA 2256.0023(b)(2-3)
By my signature, I represent that 1) this report was written under my direct supervision; 2) I have thoroughly reviewed all the information contained within and used to develop this report; and 3) I believe this report to be true and correct to the best of my knowledge.



Timothy A. Andruss, VCGCD Investment Officer	9/19/2023 Date

Victoria County Groundwater Conservation District

INVESTMENT REPORT
Fiscal Year 2022-2023
As of July 31, 2023

Detailed Description of Investment Position - PFIA 2256.023(b)(1)
The investment position of the Victoria County Groundwater Conservation District (District) during the reporting period was restricted to: 1) cash deposited into an interest-bearing, demand deposit account for the purposes of holding monies of the Operating Fund, 2) cash deposited into an interest-bearing, money-market account for the purposes of holding monies of the Operating Fund, 3) cash deposited into an interest-bearing, money-market account for the purposes of holding monies of the Reserve Fund, and 4) cash deposited into certificates of deposit for the purposes of holding monies of the Reserve Fund. The accounts are secured by FDIC insurance and pledged collateral in accordance with state law and the Investment Policy of the District.

During the reporting period, the District deposited cash in an interest-bearing, demand deposit account at Prosperity Bank (Account Number: 7060023566) for the purpose of holding monies of the Operating Fund, receiving interest deposits of the account, receiving deposits of district fees, and paying of bills and invoices of the District.

During the reporting period, the District deposited cash in an interest-bearing, money market account at Prosperity Bank (Number: 218927120) for the purpose of holding monies of the Operating Fund, and receiving interest deposits of the account.

During the reporting period, the District deposited cash in an interest-bearing, money market account at Prosperity Bank (Number: 807725242) for the purpose of holding monies of the Reserve Fund, receiving interest deposits of the account, and receiving ad valorem tax revenue deposits.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002625) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002626) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002629) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002680) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002801) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 280002802) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 9570010518) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 9570010519) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 9570010520) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

During the reporting period, the District deposited funds in a certificate of deposit (Number: 9570010521) for the purpose of holding monies of the Reserve Fund and receiving interest deposits of the account.

Summary of Pooled Fund Groups – PFIA 2256.023(b)(4)(A-D)
The District did not invest any portion of its funds in any pooled fund groups during the reporting period.

Beginning Market Value of Investments in Pooled Fund Groups:	$0.00
Additions and Changes to the Market Value of Investments in Pooled Fund Groups:	$0.00
Ending Market Value of Investments in Pooled Fund Groups:	$0.00
Fully Accrued Interest of Investments in Pooled Fund Groups:	$0.00

Book and Market Values by Asset Type and Fund Type Statement – PFIA 2256.023(b)(5)

Asset Type	Institution	Fund Types	Yield	Book Value	Market Value
Demand Deposit Account*	Prosperity Bank (7060023566)	Operating	0.15%	$140,498.12	$140,498.12
Money Market Account*	Prosperity Bank (218927120)	Operating	2.17%	$116,673.38	$116,673.38
Money Market Bank Account*	Prosperity Bank (807725242)	Reserve	3.04%	$1,461,887.68	$1,461,887.68
Certificate of Deposit Account*	Prosperity Bank (280002625)	Reserve	2.75%	$159,263.36	$159,263.36
Certificate of Deposit Account*	Prosperity Bank (280002626)	Reserve	0.20%	$157,683.00	$157,683.00
Certificate of Deposit Account*	Prosperity Bank (280002629)	Reserve	2.20%	$161,044.61	$161,044.61
Certificate of Deposit Account*	Prosperity Bank (280002680)	Reserve	3.35%	$160,253.96	$160,253.96
Certificate of Deposit Account*	Prosperity Bank (280002801)	Reserve	0.25%	$259,609.11	$259,609.11
Certificate of Deposit Account*	Prosperity Bank (280002802)	Reserve	0.25%	$259,609.11	$259,609.11

Certificate of Deposit Account*	Prosperity Bank (9570010518)	Reserve	3.35%	$252,110.96	$252,110.96
Certificate of Deposit Account*	Prosperity Bank (9570010519)	Reserve	3.35%	$252,110.96	$252,110.96
Certificate of Deposit Account*	Prosperity Bank (9570010520)	Reserve	3.25%	$252,047.95	$252,047.95
Certificate of Deposit Account*	Prosperity Bank (9570010521)	Reserve	3.25%	$252,047.95	$252,047.95
		Total:		$3,884,840.15	$3,884,840.15

* Based on monthly statements provided by banking institutions.

Summary of Insurance and Collateral by Institution

Institution	FDIC Insurance	Market Value of Pledged Securities as Collateral	Total Insurance and Pledged Securities
Prosperity Bank	$250,000.00	$4,098,865.17	$4,348,865.17

Asset Maturity Date Statement – PFIA 2256.0023(b)(6)

Asset	Maturity Date
Operating Funds in Interest-Bearing Demand Deposit Account	N/A
Operating Funds in Interest-Bearing Money Market Account	N/A
Reserve Funds in Interest-Bearing Money Market Account	N/A
Interest-Bearing Certificate of Deposit Account #280002625	12/4/2023
Interest-Bearing Certificate of Deposit Account #280002626	8/4/2023
Interest-Bearing Certificate of Deposit Account #280002629	9/4/2024
Interest-Bearing Certificate of Deposit Account #280002680	3/22/2025
Interest-Bearing Certificate of Deposit Account #280002801	1/8/2024
Interest-Bearing Certificate of Deposit Account #280002802	1/8/2024
Interest-Bearing Certificate of Deposit Account #9570010518	3/30/2025
Interest-Bearing Certificate of Deposit Account #9570010519	3/30/2025
Interest-Bearing Certificate of Deposit Account #9570010520	3/30/2024
Interest-Bearing Certificate of Deposit Account #9570010521	3/30/2024

Investments for Funds Statement – PFIA 2256.0023(b)(7)

Investment	Fund
Cash Deposits in Interest-Bearing Demand Deposit Account	Operating
Cash Deposits in Interest-Bearing Money Market Account	Operating
Cash Deposits in Interest-Bearing Money Market Account	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002625	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002626	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002629	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002680	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002801	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #280002802	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #9570010518	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #9570010519	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #9570010520	Reserve
Cash Deposits in Interest-Bearing Certificate of Deposit Account #9570010521	Reserve

Statement of Compliance – PFIA 2256.0023(b)(8)
The portfolio of the District is believed to be in compliance with the District's Investment Strategy expressed in the District's Investment Policy and the Public Funds Investment Act.

Statement regarding Report Preparation – PFIA 2256.0023(b)(2-3)
By my signature, I represent that 1) this report was written under my direct supervision; 2) I have thoroughly reviewed all the information contained within and used to develop this report; and 3) I believe this report to be true and correct to the best of my knowledge.

Timothy A. Andruss, VCGCD Investment Officer	9/19/2023 Date

What is TexPool?

TexPool is the oldest and largest local government investment pool in the State of Texas. TexPool seeks to preserve principal, liquidity, and yield of capital investment consistent with the Texas Public funds Investment Act. This local government investment pool is managed and serviced by Federated Hermes, Inc., one of the nation's leading investment managers. Thirty seven states rely on Federated Hermes for some form of liquidity management.

Who uses the portfolio?

over
2,700
individual public entities
in Texas

the portfolio is made up of over
$29.8 BILLION
in public funds*

** As of 6/30/23*

Eligibility extends to all Texas public entities including:

- School Districts
- Higher Education
- Healthcare
- Utility Districts
- Cities
- Counties

What are the BENEFITS?

- Daily liquidity
- Competitive yield
- No minimums
- AAAm Rating

What types of assets are invested?

OPERATING CASH | BOND PROCEEDS | STATE AID
GENERAL FUNDS | TRUST FUNDS | STABILIZATION FUNDS

Portfolio composition is subject to change.
An investment in the Pool is not insured or guaranteed by any government or government agency. Although the manager of the Pool seeks to preserve principal, it is possible to lose money by depositing money in the Pool.
An AAAm rating by Standard & Poor's is obtained after Standard & Poor's evaluates a number of factors, including credit quality, market price exposure and management. Ratings are subject to change, and do not remove market risk. For more information on credit ratings, visit standardandpoors.com.
For more complete information, see the investment policy and information statement available at www.texpool. com. You should consider the investment's objectives, risks, charges, and expenses carefully before you invest. Information about these and other important subjects is in the investment policy and information statement, which you should read carefully before investing.

TexPool Participant Services
1001 Texas Avenue, Suite 1150 · Houston, TX 77002
Phone: 1-866-TEXPOOL (839-7665) · Fax: 1-866-839-3291 · TexPool.com

G35884-70 (7/23)

Managed and Serviced by Federated Hermes

TEXPOOL
AN INVESTMENT SERVICE FOR PUBLIC FUNDS

Quarterly Update
TexPool and TexPool *Prime*

Investor Goal

The investor goal for both TexPool and TexPool *Prime* is preservation and safety of principal, liquidity and yield.

Pool Features

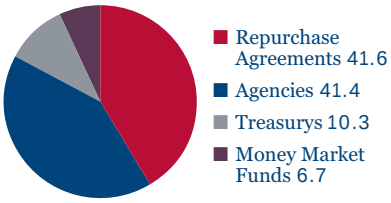
- Administered by the Texas Comptroller of Public Accounts.
- Managed and serviced by Federated Hermes.
- Highest possible ratings from Standard & Poor's underscores the portfolios' high credit quality, daily liquidity and relative safety.
- High asset levels give the benefit of economies of scale.

Portfolio Overviews as of 6/30/23

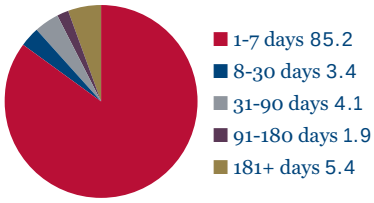
TexPool

Pool Assets $29.8 billion

Portfolio Composition (%)



Effective Maturity Schedule (%)



Weighted Average Maturity

26 Days

Credit Rating

AAAm Standard & Poor's

Portfolio Managers

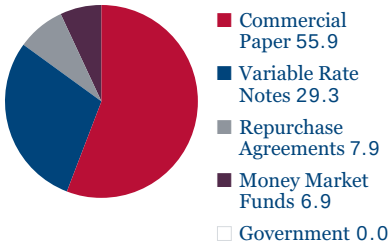
Susan Hill

Deborah Cunningham

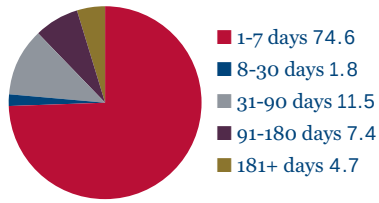
TexPool *Prime*

Pool Assets $11.8 billion

Portfolio Composition (%)



Effective Maturity Schedule (%)



Weighted Average Maturity

34 Days

Credit Rating

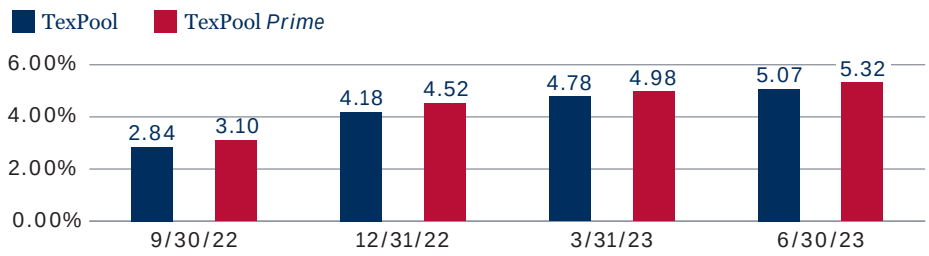
AAAm Standard & Poor's

Portfolio Managers

Paige Wilhelm

Deborah Cunningham

Pool Performance: 7-Day Net Yields (%)



Performance data quoted represents past performance which is no guarantee of future results. Investment return will vary. The value of an investment, when redeemed, may be worth more or less than the original cost. Current performance may be lower or higher than what is stated.

Portfolio Manager Commentary

In January, U.S. Treasury Secretary Janet Yellen announced that the federal government's statutory debt limit had been reached and that the Treasury Department was forced to implement "extraordinary measures" to meet its obligations. Yellen warned that the "X date"—the day it exhausts its cash balance held at the Federal Reserve—could come in June. As in past cases, lawmakers pushed the negotiations to the brink before finally voting to suspend the limit until January 2025. The immediate result was that the Treasury embarked on plans to issue a massive amount of securities to replenish its coffers. Some estimates put that amount as high as $1 trillion, based on the need to make whole the federal accounts in which it redeemed or suspended investments, service the national debt and fund government spending. The preponderance of the issuance will come in bills, a process that started as the second quarter drew to a close.

In the first of two Federal Open Market Committee (FOMC) meetings during the quarter, policymakers disregarded the debt ceiling debate and raised the fed funds target range by 25 basis points. That lifted it to a 16-year high of 5-5.25%. The rationale was that restricting the economy to fight inflation was critical despite the uncertainty. Most measures of inflation continued to decrease, but remained stubbornly above the Fed's 2% target, and the labor market and consumer spending remained strong.

Intriguingly, at its June FOMC meeting the Fed made a different decision after the resolution of the debt limit debate, declining to change the policy range after 10 straight hikes. This announcement was paired with policymaker projections that rates likely will continue to rise. As the quarter closed, public comments by Fed Chair Jerome Powell suggested the tightening cycle that began in March 2022 was not over.

At the end of the month, yields on 1-, 3-, 6- and 12-month U.S. Treasuries were 5.14%, 5.32%, 5.45% and 5.42%, respectively; the 1-, 3-, 6- and 12-month Bloomberg Short-Term Bank Yield Index rates (BSBY) were 5.21%, 5.47%, 5.67% and 5.93%, respectively; the 1-, 3-, 6- and 12-month London interbank offered rates were 5.26%, 5.53%, 5.81% and 6.04%, respectively. Since US$ LIBOR rates are no longer being reported, this is the last time they will appear on this update.

Portfolio composition is subject to change.

An investment in the Pool is not insured or guaranteed by any government or government agency. Although the manager of the Pool seeks to preserve principal, it is possible to lose money by depositing money in the Pool.

An AAAm rating by Standard & Poor's is obtained after Standard & Poor's evaluates a number of factors, including credit quality, market price exposure and management. Ratings are subject to change, and do not remove market risk. For more information on credit ratings, visit standardandpoors.com.

For more complete information, see the investment policy and information statement available at www.texpool.com. You should consider the investment's objectives, risks, charges, and expenses carefully before you invest. Information about these and other important subjects is in the investment policy and information statement, which you should read carefully before investing.

TexPool Participant Services
1001 Texas Avenue, Suite 1150 · Houston, TX 77002
Phone: 1-866-TEXPOOL (839-7665) · Fax: 1-866-839-3291 · TexPool.com

G35884-22 (7/23)

Managed and Serviced by
Federated Hermes

S&P Global Ratings

POOL PROFILE *March 30, 2023*

TEXPOOL

Principal Stability Fund Ratings Definitions

AAAm A fund rated 'AAAm' demonstrates extremely strong capacity to maintain principal stability and to limit exposure to principal losses due to credit risk.
'AAAm' is the highest principal stability fund rating assigned by S&P Global Ratings

AAm A fund rated 'AAm' demonstrates very strong capacity to maintain principal stability and to limit exposure to principal losses due to credit risk. It differs from the highest-rated funds only to a small degree.

Am A fund rated 'Am' demonstrates strong capacity to maintain principal stability and to limit exposure to principal losses due to credit risk, but is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than funds in higher-rated categories

BBBm A fund rated 'BBBm' demonstrates adequate capacity to maintain principal stability and to limit exposure to principal losses due to credit risk. However, adverse economic conditions or changing circumstances are more likely to lead to a reduced capacity to maintain principal stability.

BBm A fund rated 'BBm' demonstrates speculative characteristics and uncertain capacity to maintain principal stability. It is vulnerable to principal losses due to credit risk. While such funds will likely have some quality and protective characteristics, these may be outweighed by large uncertainties or major exposures to adverse conditions.

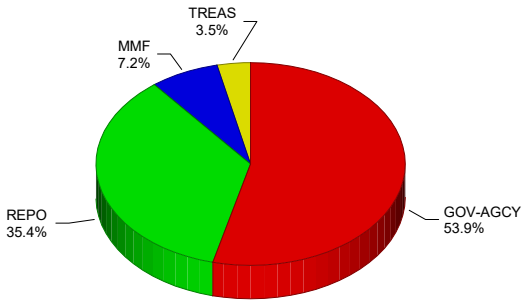
Dm A fund rated 'Dm' has failed to maintain principal stability resulting in a realized or unrealized loss of principal.

Plus (+) or Minus (-)
The ratings may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the rating categories.

About the Pool

Pool Rating	**AAAm**
Pool Type	Stable NAV Government Investment Pool
Investment Adviser	Federated Hermes, Inc.
Portfolio Manager	Susan R. Hill, CFA (Since 2002)
Pool Rated Since	March 1995
Custodian	State Street Bank
Distributor	Federated Securities Corp.

Portfolio Composition as of March 30, 2023



GOV-AGCY - Agency and Government; REPO - Repurchase Agreement; MMF - Money Market Fund; TREAS - Treasury

Rationale
S&P Global rates TEXPOOL 'AAAm'. This is S&P Global's highest principal stability fund rating and is based on an analysis of the pool's investment portfolio and guidelines, market price exposure, and management. The rating signifies our forward-looking opinion about a fixed-income fund's ability to maintain principal value (i.e., stable net asset value, or 'NAV'). TEXPOOL has a very conservative investment policy, which is in line with Rule 2a-7 money-market practices. To ensure an accurate and current rating, S&P Global monitors pertinent pool information, including its portfolio holdings, on a weekly basis.

Overview
TEXPOOL is a local government investment pool. It offers a safe, efficient and liquid investment alternative to local governments in the state of Texas. The primary objectives of the pool are to preserve capital and protect principal, maintain sufficient liquidity, provide safety of funds and investments, diversify to avoid unreasonable or avoidable risks, and maximize the return on the pool. Cities, counties, school districts, institutions of higher education, special districts, and other public entities of Texas make up the investor base.

Management
TEXPOOL was originally rated in March 1995, but effective April 2002, the Texas comptroller contracted with Federated Hermes, Inc. for the day-to-day operations of TEXPOOL. Federated Hermes, Inc. performs the pool's investment management and custodial functions. It also provides the marketing function, working closely with participants. Federated Securities Corp. acts as the distributor for the portfolio. Oversight of TEXPOOL continues to be provided by the Texas comptroller of public accounts, as well as the TEXPOOL advisory board. In January 1995, the advisory board adopted and implemented long-term policy changes to provide for a stable net asset value (NAV) pool, which, in effect, operates like an SEC regulated Rule 2a-7 money-market fund. These changes were made to ensure a more conservative investment strategy and to provide a much higher level of investment safety for local government funds.

Portfolio Assets
The pool invests a majority of its assets in repurchase agreements contracted with highly-rated counterparties, with the remainder of the portfolio invested in fixed rate or floating rate U.S. agency securities. In order to meet the liquidity needs of the pool's shareholder base and to limit its exposure to significant market price fluctuations occurring during periods of volatile interest rate movements, the weighted average maturity to reset (WAM(R)) of the pool's assets is limited to 60 days or less.

S&P Global Ratings Analyst: Michael Masih - (212) 438 1642 www.spratings.com

Principal Stability Rating Approach and Criteria

A S&P Global Ratings principal stability fund rating, also known as a "money market fund rating", is a forward-looking opinion about a fixed income fund's capacity to maintain stable principal (net asset value). When assigning a principal stability rating to a fund, S&P Global Ratings analysis focuses primarily on the creditworthiness of the fund's investments and counterparties, and also its investments' maturity structure and management's ability and policies to maintain the fund's stable net asset value. Principal stability fund ratings are assigned to funds that seek to maintain a stable or an accumulating net asset value.

Generally, when faced with an unanticipated level of redemption requests during periods of high market stress, the manager of any fund may suspend redemptions for up to five business days or meet redemption requests with payments in-kind in lieu of cash. A temporary suspension of redemptions or meeting redemption requests with distributions in-kind does not constitute a failure to maintain stable net asset values. However, higher rated funds are expected to have stronger capacities to pay investor redemptions in cash during times of high market stress because they generally comprise shorter maturity and higher quality investments.

Principal stability fund ratings, or money market fund ratings, are identified by the 'm' suffix (e.g., 'AAAm') to distinguish the principal stability rating from a S&P Global Ratings traditional issue or issuer credit rating. A traditional issue or issuer credit rating reflects S&P Global Ratings view of a borrower's ability to meet its financial obligations. Principal stability fund ratings are not commentaries on yield levels.

TEXPOOL

AAAm

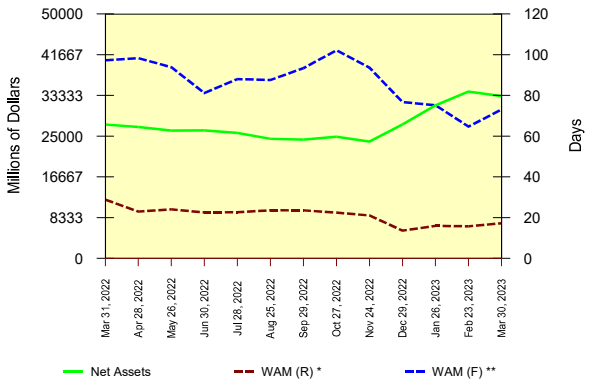
Data Bank as of March 30, 2023

Net Asset Value per Share.....	$0.99990	Net Assets (millions).....	$33,185.99	Inception Date.....	December 1989
WAM (R) *	17 days	WAM (F) **.....	73 days	7 Day Yield.....	4.77%

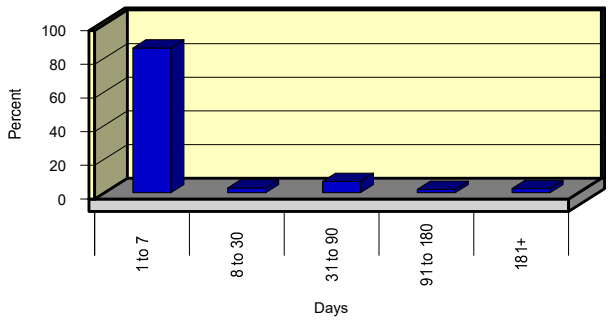
* Weighted Average Maturity (Reset)

** Weighted Average Maturity (Final)

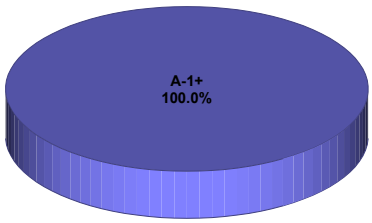
Net Assets, WAM (R) and WAM (F)



Portfolio Maturity Distribution as of March 30, 2023

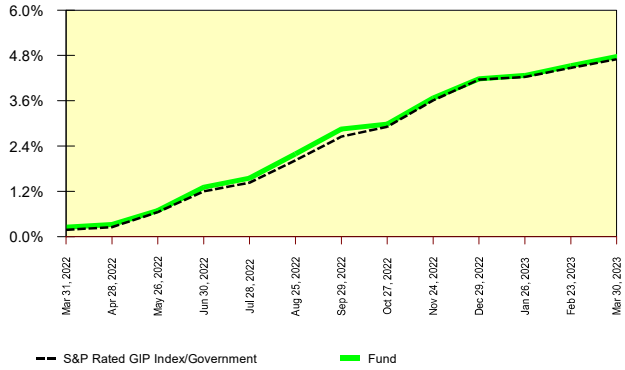


Portfolio Credit Quality as of March 30, 2023 *



*As assessed by S&P Global Ratings

Portfolio 7 Day Net-Yield Comparison *



*S&P 'AAAm' Money Fund Indices are calculated weekly by iMoneyNet, Inc., and are comprised of funds rated or assessed by S&P Global Ratings to within the specific rating categories. The S&P Global Ratings Rated LGIP Indices are calculated weekly by S&P Global Ratings and are comprised of 'AAAm' and 'AAm' government investment pools.

The yield quoted represents past performance. Past performance does not guarantee future results. Current yield may be lower or higher than the yield quoted.

Pool portfolios are monitored weekly for developments that could cause changes in the ratings. Rating decisions are based on periodic meetings with senior pool executives and public information.

TexPool
Investment Policy

Texas Local Government Investment Pool

November 2022

G35884-52

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.

[Remainder of page intentionally left blank.]

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.

[Remainder of page intentionally left blank.]

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.

In summary, pool participants should look to the Authorized Investments section of this document as all securities defined within are permissible and not deemed to be derivatives. These securities include (but are not limited to) 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
Information Statement

Texas Local Government Investment Pool

November 2022

G35884-50

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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, 2022. 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 Performance 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, 2027.

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, 2027 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.

Resolution Authorizing Participation in the TexPool Investment Pools and Designating Authorized Representatives

WHEREAS, _____ ("**Participant**") is a local government or state agency of the State of Texas and is empowered to delegate to the public funds investment pools the authority to invest funds and to act as custodian of investments purchased with local investment funds; and

WHEREAS, it is in the best interest of the Participant to invest local funds in investments that provide for the preservation and safety of principal, liquidity, and yield consistent with the Public Funds Investment Act; and

WHEREAS, the Texas Local Government Investment Pools ("**TexPool/TexPool Prime**"), public funds investment pools, were created on behalf of entities whose investment objectives in order of priority are preservation and safety of principal, liquidity, and yield consistent with the Public Funds Investment Act.

NOW THEREFORE, be it resolved as follows:

A. That Participant shall enter into a Participation Agreement to establish an account in its name in TexPool/TexPool Prime, for the purpose of transmitting local funds for investment in TexPool/TexPool Prime.

B. That the individuals, whose signatures appear in this Resolution, are authorized representatives of the Participant and are each hereby authorized to transmit funds for investment in TexPool/TexPool Prime and are each further authorized to withdraw funds from time to time, to issue letters of instruction, and to take all other actions deemed necessary or appropriate for the investment of local funds.

Authorized Representatives of the Participant

These individuals will be issued P.I.N. numbers to transact business via telephone with a Participant Service Representative.

1.
Signature _____ Telephone Number _____
Printed Name _____ Fax Number _____
Title _____ Email _____

2.
Signature _____ Telephone Number _____
Printed Name _____ Fax Number _____
Title _____ Email _____

3.
Signature _____ Telephone Number _____
Printed Name _____ Fax Number _____
Title _____ Email _____

4.
Signature _____ Telephone Number _____
Printed Name _____ Fax Number _____
Title _____ Email _____

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Authorized Representatives of the Participant (continued)

5. Signature | Telephone Number
Printed Name | Fax Number
Title | Email

6. Signature | Telephone Number
Printed Name | Fax Number
Title | Email

List the name of the Authorized Representative provided above that will have primary responsibility for performing transactions and receiving confirmations and monthly statements under the Participation Agreement.

Printed Name

In addition and at the option of the Participant, additional authorized representative(s) can be designated to perform inquiry only of selected information. This limited representative cannot make deposits or withdrawals. If the Participant desires to designate a representative with inquiry rights only, complete the following information.

1. Printed Name | Title
Telephone Number | Fax Number | Email

2. Printed Name | Title
Telephone Number | Fax Number | Email

3. Printed Name | Title
Telephone Number | Fax Number | Email

4. Printed Name | Title
Telephone Number | Fax Number | Email

5. Printed Name | Title
Telephone Number | Fax Number | Email

6. Printed Name | Title
Telephone Number | Fax Number | Email

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Authorized Representatives of the Participant (continued)

C. That this resolution and its authorization shall continue in full force and effect until amended or revoked by the Participant, and until TexPool/TexPool Prime receives a copy of any such amendment or revocation.

This resolution is hereby introduced and adopted by the Participant at its regular/special meeting held on the

__ __ day of _____, 2 0 __ __.

Document is to be signed by a Board Officer, Mayor or County Judge and attested by a Board Officer, City Secretary or County Clerk.

Name of Participant

SIGNED:

Signature

Printed Name

Title

ATTEST:

Signature

Printed Name

Title

Delivery Instructions

Please return this document to **TexPool Participant Services:**

Email: texpool@dstsystems.com

Fax: 866-839-3291

RESOLUTION ADOPTING INVESTMENT POLCIES AND PROCEDURES, FOR THE VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT

THE STATE OF TEXAS §
§

VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT §
§

WHEREAS, the Victoria County Groundwater Conservation District ("District") was created by the Legislature of the State of Texas in Acts codified as Chapter 8812 for the Special District Local Laws Code;

WHEREAS, § 36.061 of the Texas Water Code requires a groundwater conservation district to adopt certain policies for the district;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT AS FOLLOWS:

The Investment Policies and Procedures of the District attached hereto are hereby adopted; and,

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

AND IT IS SO ORDERED.

PASSED AND ADOPTED this _____ day of _____ .

VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT

By: _____
Presiding Officer of the District

Attest: _____
Director of the District

VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT

INVESTMENT POLICY

This Investment Policy (the "Policy") is adopted by the Board of Directors of Victoria County Groundwater Conservation District (the "District"), pursuant to Chapter 2256 of the Texas Government Code and Chapter 36 of the Texas Water Code.

ARTICLE I

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 ensure 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, 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

Section 2.01. Definitions.

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

1. The term "Authorized Investment" shall mean any security which the District is authorized to invest under Chapter 2256, Texas Government Code.
2. The term "Board" shall mean the Board of Directors of the Victoria County Groundwater Conservation District.
3. The term "Collateral" shall mean government securities or obligations issued by the State of Texas, its agencies or political subdivisions, and approved by the Attorney General of Texas payable from taxes or revenues or a combination thereof and approved by the investment committee; or Direct obligations of the United States of America backed by the full faith and credit of the government; or Any other obligations or securities authorized to be collateral securing the funds

of groundwater districts under the laws of the State of Texas and approved by the investment committee.

4. The term "Director" shall mean a person appointed to serve on the Board of Directors of the District.
5. The term “District” shall mean the Victoria County Groundwater Conservation District, a political subdivision of the State of Texas, created under authority of Article XVI, §59 of the Texas Constitution and codified as Chapter 8812, Special District and Local Laws Code and Chapter 36 of the Texas Water Code.
6. The term "District Officials" shall mean the Investment Officer, District Directors, officers, employees, and persons and business entities handling investments for the District.
7. 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.
8. The term “Investment Act” shall mean Chapter 2256, Texas Government Code, as amended from time to time.
9. 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

Section 3.01. Policy of Investment.

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. The 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.

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 except for those funds invested in Texas Local Government Investment Pools ("TexPool/TexPool Prime"). 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 Officer 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 Officer may withdraw or transfer funds from and to accounts of the District on such terms as the Board considers advisable.

The District shall maintain 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

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 Texas Government Code §2256.008.

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. contain a summary statement, prepared in compliance with generally accepted accounting principles, of each pooled fund group that states the:
    a. beginning market value for the reporting period;
    b. additions and changes to the market value during the period;
    c. ending market value for the period; and

d. fully accrued interest for the reporting period;

5. 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;
6. state the maturity date of each separately invested asset that has a maturity date;
7. state the District fund for which each individual investment was acquired; and
8. 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 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. Handling 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

Section 5.01. Qualified Brokers and Dealers

The following are the qualified broker/dealers with whom the District may engage in investment transactions:

1. Prosperity Bank
2. Texas Local Government Investment Pools ("TexPool/TexPool Prime")

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 Investment 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 A.

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.

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:

1. Certificates of deposit shall be valued at their face value plus any accrued but unpaid interest.
2. Shares in money market mutual funds and investment pools shall be valued at par plus any accrued but unpaid interest.
3. Other investment securities with a remaining maturity of one year or less may be valued in any of the following ways:
    a. the lower of two bids obtained from securities broker/dealers for such security;
    b. the average of the bid and asked prices for such investment security as published in The Wall Street Journal or The New York Times;
    c. the bid price published by any nationally recognized security pricing service; or
    d. the market value quoted by the seller of the security or the owner of such collateral.

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.

ARTICLE VI

Section 6.01. Provisions Applicable to All Fund Groups.

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.

The Board, by separate resolution, may provide that the District's bookkeeper may withdraw or transfer funds from and to accounts of the District only in compliance with this Policy.

No fund groups shall be pooled for the purposes of investment.

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

The District recognizes that FDIC (or it's successor) insurance is available for District funds deposited at any one Texas Financial Institution (including branch banks) 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 each of the District's accounts 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 except for those funds invested in Texas Local Government Investment Pools ("TexPool/TexPool Prime").

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.

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 reflects 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 is successor's, insurance limits or the market value of the collateral pledged as security for the District's deposits except for those funds invested in Texas Local Government Investment Pools ("TexPool/TexPool Prime"). 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.

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 or 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 complies 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:

1. Obligations whose payment represents the coupon payments on the outstanding principal balance of the underlying mortgage-backed security collateral and pays no principal;

2. Obligations whose payment represents the principal stream of cash flow from the underlying mortgage-backed security collateral and bears no interest;
3. Collateralized mortgage obligations that have a final stated maturity date of greater than 10 years; or
4. 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 100% of the funds of the District in any investment instrument authorized in this policy.

ARTICLE VII

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 in any account, security, obligation, certificate, agreement, fund, pool, program, or other instrument in which the District is authorized to invest under Chapter 2256, Texas Government Code.

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 (IO'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

Section 8.01. Investment 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:

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.

Monies in the following funds of the District shall be invested by the District's Investment Officer as follows:

1. General Fund: Monies in this fund 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. The monies of this account shall be used for the general administrative, governmental, and operations functions of the including payment of the ongoing operational expenditures during the fiscal year. Monies of the fund shall not be invested in any instrument for longer than thirteen (13) months.

2. Reserve Fund: Monies in this fund shall be invested to meet future financial requirements of the District including legal expenditures and groundwater water science development. The funds shall be committed to legal contingencies and groundwater science development on a 50/50 basis unless modified by action of the Board of Directors subsequent to the adoption of this policy. Monies of the fund shall not be invested in any instrument for longer than twenty-five (25) months.

3. Grant Fund: Monies in this fund shall be invested to satisfy the requirements associated with and agree to by the District associated with implementing and completing work associated with grants awarded to the District. Monies of the fund shall not be invested in any instrument for longer than thirteen (13) months.

ARTICLE IX

Section 9.01. Miscellaneous.

All checks drawn on District accounts shall require two signatures. One of the signatures on a check drawn on a District account may be the General Manager. The other signature(s) on the check shall be one or more of the members of the Board of Directors.

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

CERTIFICATE OF COMPLIANCE FROM SELLERS OF INVESTMENTS AS REQUIRED BY THE PUBLIC FUNDS INVESTMENT ACT

To: Victoria County Groundwater Conservation District

From: _____ _____
[Name of the person offering or the "qualified representative of the business organization" offering to engage in an investment transaction with the District] [Office such person holds]

of _____(the "Business Organization")
[Name of financial institution, business organization or investment pool]

Date:_____, 20____.

In accordance with the provisions of Chapter 2256 of the Texas Government Code, I hereby certify that:

I am an individual offering to enter into an investment transaction with the District or a "qualified representative" of the Business Organization offering to enter into an investment transaction with the District, as applicable, as such terms are used in the Public Funds Investment Act, Chapter 2256, Texas Government Code, and that I meet all requirements under such Act to sign this Certificate.

I or the Business Organization, as applicable, anticipate selling to the District investments that comply with the District's Investment Policy and the Public Funds Investment Act.

I or a registered investment professional that services the District's account, as applicable, have received and reviewed the Investment Policy, which the District has represented is the complete Investment Policy of the District now in full force and effect. The District has further acknowledged that I or the Business Organization, as applicable, may rely upon the Investment Policy until the District provides me or the Business Organization, as applicable, with any amendments to or any newly adopted form of the Investment Policy.

I or the Business Organization, as applicable, have/has implemented reasonable procedures and controls in an effort to preclude investment transactions between the District and me or the Business Organization, as applicable, that are not authorized by the Investment Policy, except to the extent that this authorization is dependent upon an analysis of the District's entire portfolio or requires an interpretation of subjective investment standards.

I or the Business Organization, as applicable, have/has reviewed or will review prior to sale, the terms, conditions, and characteristics of the investments to be sold to the District and determined (i) that each of the Investments is an authorized investment for local governments under the Investment Act and (ii) each of the Investments is an authorized investment as to whether any limits on the amount of District monies to be invested in the Investments exceeds or in any way violates the Investment Policy.

The Business Organization makes no representations or guarantees regarding the prudence, reasonableness or adequacy of the Investment Policy.

The Business Organization has attached hereto, for return to the District, or will provide a prospectus or disclosure document for each of the Investments other than certificates of deposit and direct obligations of the United States.

By: _____

Name: _____

Title: _____

Investments other than certificates of deposit are not FDIC insured, are not deposits or other obligations of me, the Business Organization or any of its affiliates, and are subject to investment risks, including possible loss of the principal amount invested.

Goldman, Hunt & Notz, L.L.P.

Certified Public Accountants

DONALD G. GOLDMAN, CPA
D. DALE HUNT, CPA
JAMIE K. NOTZ, CPA, CVA*

*CERTIFIED VALUATION ANALYST

MEMBERS OF:
AMERICAN INSTITUTE OF
CERTIFIED PUBLIC ACCOUNTANTS

TEXAS SOCIETY OF
CERTIFIED PUBLIC ACCOUNTANTS

KEITH H. COX, CPA, CISA*
STEPHANIE S. KOCH, CPA

*CERTIFIED INFORMATION SYSTEMS AUDITOR

September 29, 2023

Victoria County Groundwater Conservation District
2805 N. Navarro, Suite 210
Victoria, Texas 77901

Dear Board of Directors:

Enclosed please find the engagement letter (on cream color paper) and a "draft" of the management representation letter.

Please sign and return one original of the engagement letter to us in the envelope provided. The other original engagement letter is for your records.

We are making this "draft" of the management representation letter available to allow you adequate time to review. Once the audit work is nearing completion, we will provide a final copy for your review and signature. We are required to obtain the final signed copy prior to the audit report release.

If you have any questions, please contact our office.

Respectfully,

Donald G. Goldman, CPA
Partner

Enclosures

w:/winword/audit/audit templates/eng ltr and 'draft' mgt rep ltr.doc

TELEPHONE (361) 573-2471
FACSIMILE (361) 575-0444

5606 NORTH NAVARRO STREET, SUITE 309
VICTORIA, TEXAS 77904-1770

EMAIL: ghn@tisd.net

Goldman, Hunt & Notz, L.L.P.

Certified Public Accountants

DONALD G. GOLDMAN, CPA
D. DALE HUNT, CPA
JAMIE K. NOTZ, CPA, CVA*

*CERTIFIED VALUATION ANALYST

MEMBERS OF:
AMERICAN INSTITUTE OF
CERTIFIED PUBLIC ACCOUNTANTS

TEXAS SOCIETY OF
CERTIFIED PUBLIC ACCOUNTANTS

KEITH H. COX, CPA, CISA†
STEPHANIE S. KOCH, CPA

†CERTIFIED INFORMATION SYSTEMS AUDITOR

September 22, 2023

To Management and Board of Directors
Victoria County Groundwater Conservation District
2805 N. Navarro, Suite 210
Victoria, TX 77901

We are pleased to confirm our understanding of the services we are to provide Victoria County Groundwater Conservation District (the District) for the year ended September 30, 2023.

Audit Scope and Objectives

We will audit the financial statements of the governmental activities, each major fund, and the disclosures, which collectively comprise the basic financial statements of the District as of and for the year ended September 30, 2023. Accounting standards generally accepted in the United States of America (GAAP) provide for certain required supplementary information (RSI), such as management's discussion and analysis (MD&A), to supplement the District's basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. As part of our engagement, we will apply certain limited procedures to the District's RSI in accordance with auditing standards generally accepted in the United States of America (GAAS). These limited procedures will consist of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We will not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient appropriate evidence to express an opinion or provide any assurance. The following RSI is required by GAAP and will be subjected to certain limited procedures, but will not be audited:

1) Management's Discussion and Analysis
2) Budgetary Comparison Schedule
3) Required Supplementary Pension

The objectives of our audit are to obtain reasonable assurance as to whether the financial statements as a whole are free from material misstatement, whether due to fraud or error; issue an auditor's report that includes our opinion about whether your financial statements are fairly presented, in all material respects, in conformity with GAAP; and report on the fairness of the supplementary information referred to in the second paragraph when considered in relation to the financial statements as a whole. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. Misstatements, including omissions, can arise from fraud or error and are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment of a reasonable user made based on the financial statements.

TELEPHONE (361) 573-2471
FACSIMILE (361) 575-0444

5606 NORTH NAVARRO STREET, SUITE 309
VICTORIA, TEXAS 77904-1770

EMAIL: ghn@tisd.net

The objectives also include reporting on internal control over financial reporting and compliance with provisions of laws, regulations, contracts, and award agreements, noncompliance with which could have a material effect on the financial statements in accordance with *Government Auditing Standards*.

Auditor's Responsibilities for the Audit of the Financial Statements

We will conduct our audit in accordance with GAAS and the standards for financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, and will include tests of your accounting records of the District and other procedures we consider necessary to enable us to express such opinions. As part of an audit in accordance with GAAS and *Government Auditing Standards*, we exercise professional judgment and maintain professional skepticism throughout the audit.

We will evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management. We will also evaluate the overall presentation of the financial statements, including the disclosures, and determine whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation. We will plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether from (1) errors, (2) fraudulent financial reporting, (3) misappropriation of assets, or (4) violations of laws or governmental regulations that are attributable to the government or to acts by management or employees acting on behalf of the government. Because the determination of waste and abuse is subjective, *Government Auditing Standards* do not expect auditors to perform specific procedures to detect waste or abuse in financial audits nor do they expect auditors to provide reasonable assurance of detecting waste or abuse.

Because of the inherent limitations of an audit, combined with the inherent limitations of internal control, and because we will not perform a detailed examination of all transactions, there is an unavoidable risk that some material misstatements may not be detected by us, even though the audit is properly planned and performed in accordance with GAAS and *Government Auditing Standards*. In addition, an audit is not designed to detect immaterial misstatements or violations of laws or governmental regulations that do not have a direct and material effect on the financial statements. Our responsibility as auditors is limited to the period covered by our audit and does not extend to any later periods for which we are not engaged as auditors.

In connection with this engagement, we may communicate with you or others via email transmission. As emails can be intercepted and read, disclosed, or otherwise used or communicated by an unintended third party, or may not be delivered to each of the parties to whom they are directed and only to such parties, we cannot guarantee or warrant that emails from us will be properly delivered and read only by the addressee. Therefore, we specifically disclaim and waive any liability or responsibility whatsoever for interception or unintentional disclosure of emails transmitted by us in connection with the performance of this engagement. In that regard, you agree that we shall have no liability for any loss or damage to any person or entity resulting from the use of email transmissions, including any consequential, incidental, direct, indirect, or special damages, such as loss of revenues or anticipated profits, or disclosure or communication of confidential or proprietary information.

We will also conclude, based on the audit evidence obtained, whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the government's ability to continue as a going concern for a reasonable period of time.

Our procedures will include tests of documentary evidence supporting the transactions recorded in the accounts, and direct confirmation of receivables and certain assets and liabilities by correspondence with selected customers, creditors, and financial institutions. We will also request written representations from your attorneys as part of the engagement and they may bill you for responding to this inquiry.

We have identified the following significant risk(s) of material misstatement as part of our audit planning:

- Improper revenue recognition due to fraud or error
- Management override of controls

Our audit of financial statements does not relieve you of your responsibilities.

Audit Procedures—Internal Control

We will obtain an understanding of the government and its environment, including the system of internal control, sufficient to identify and assess the risks of material misstatement of the financial statements, whether due to error or fraud, and to design and perform audit procedures responsive to those risks and obtain evidence that is sufficient and appropriate to provide a basis for our opinions. Tests of controls may be performed to test the effectiveness of certain controls that we consider relevant to preventing and detecting errors and fraud that are material to the financial statements and to preventing and detecting misstatements resulting from illegal acts and other noncompliance matters that have a direct and material effect on the financial statements. Our tests, if performed, will be less in scope than would be necessary to render an opinion on internal control and, accordingly, no opinion will be expressed in our report on internal control issued pursuant to *Government Auditing Standards*. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentation, or the override of internal control. An audit is not designed to provide assurance on internal control or to identify significant deficiencies or material weaknesses. Accordingly, we will express no such opinion. However, during the audit, we will communicate to management and those charged with governance internal control related matters that are required to be communicated under AICPA professional standards and *Government Auditing Standards*.

Audit Procedures—Compliance

As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we will perform tests of the District's compliance with the provisions of applicable laws, regulations, contracts, agreements, and grants. However, the objective of our audit will not be to provide an opinion on overall compliance and we will not express such an opinion in our report on compliance issued pursuant to *Government Auditing Standards*.

Other Services

We will also assist in preparing the financial statements and related notes of the District in conformity with accounting principles generally accepted in the United States of America based on information provided by you.

We will also perform the following nonaudit services:

1. Drafting the Management's Discussion and Analysis
2. Drafting the Required Supplementary Information
3. Converting cash basis financial statements to accrual basis by recommending adjusting journal entries for approval
4. Recommending adjusting journal entries to fairly state financial statements in accordance with GAAP

These nonaudit services do not constitute an audit under *Government Auditing Standards* and such services will not be conducted in accordance with *Government Auditing Standards*. We will perform the services in accordance with applicable professional standards. The other services are limited to the financial statement services previously defined. We, in our sole professional judgment, reserve the right to refuse to perform any procedure or take any action that could be construed as assuming management responsibilities. These nonaudit services will be billed separately from the attest service.

You agree to assume all management responsibilities relating to the financial statements and related notes and any other nonaudit services we provide. You will be required to acknowledge in the management representation letter our assistance with preparation of the financial statements and related notes and that you have reviewed and approved the financial statements and related notes prior to their issuance and have accepted responsibility for them. Further, you agree to oversee the nonaudit services we provide by designating an individual, Tim Andruss, General Manager, with suitable skill, knowledge, or experience; evaluate the adequacy and results of those services; and accept responsibility for them.

Responsibilities of Management for the Financial Statements

Our audit will be conducted on the basis that you acknowledge and understand your responsibility for designing, implementing, establishing, and maintaining effective internal controls relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error, and for evaluating and monitoring ongoing activities to help ensure that appropriate goals and objectives are met; following laws and regulations; and ensuring that management and financial information is reliable and properly reported. Management is also responsible for implementing systems designed to achieve compliance with applicable laws, regulations, contracts, and grant agreements. You are also responsible for the selection and application of accounting principles, for the preparation and fair presentation of the financial statements and all accompanying information in conformity with accounting principles generally accepted in the United States of America, and for compliance with applicable laws and regulations and the provisions of contracts and grant agreements.

Management is responsible for making drafts of financial statements, all financial records, and related information available to us and for the accuracy and completeness of that information (including information from outside of the general and subsidiary ledgers). You are also responsible for providing us with (1) access to all information of which you are aware that is relevant to the preparation and fair presentation of the financial statements, such as records, documentation, identification of all related parties and all related-party relationships and transactions, and other matters; (2) additional information that we may request for the purpose of the audit; and (3) unrestricted access to persons within the government from whom we determine it necessary to obtain audit evidence. At the conclusion of our audit, we will require certain written representations from you about your responsibilities for the financial statements; compliance with laws, regulations, contracts, and grant agreements; and other responsibilities required by GAAS and *Government Auditing Standards*.

Your responsibilities include adjusting the financial statements to correct material misstatements and for confirming to us in the written representation letter that the effects of any uncorrected misstatements aggregated by us during the current engagement and pertaining to the latest period presented are immaterial, both individually and in the aggregate, to the financial statements of each opinion unit taken as a whole.

You are responsible for the design and implementation of programs and controls to prevent and detect fraud, and for informing us about all known or suspected fraud affecting the government involving (1) management, (2) employees who have significant roles in internal control, and (3) others where the fraud could have a material effect on the financial statements. Your responsibilities include informing us of your knowledge of any allegations of fraud or suspected fraud affecting the government received in communications from employees, former employees, grantors, regulators, or others. In addition, you are responsible for identifying and ensuring that the government complies with applicable laws, regulations, contracts, agreements, and grants and for taking timely and appropriate steps to remedy fraud and noncompliance with provisions of laws, regulations, or contracts or grant agreements that we report.

Management is responsible for establishing and maintaining a process for tracking the status of audit findings and recommendations. Management is also responsible for identifying and providing report copies of previous financial audits, attestation engagements, performance audits or other studies related to the objectives discussed in the Audit Scope and Objectives section of this letter. This responsibility includes relaying to us corrective actions taken to address significant findings and recommendations resulting from those audits, attestation engagements, performance audits, or other studies. You are also responsible for providing management's views on our current findings, conclusions, and recommendations, as well as your planned corrective actions, for the report, and for the timing and format for providing that information.

With regard to publishing the financial statements on your website, you understand that websites are a means of distributing information and, therefore, we are not required to read the information contained in those sites or to consider the consistency of other information on the website with the original document.

Engagement Administration, Fees, and Other

We will schedule the engagement based in part on deadlines, working conditions, and the availability of your key personnel. We will plan the engagement based on the assumption that your personnel will cooperate and provide assistance by performing tasks such as preparing requested schedules, retrieving supporting documents, and preparing confirmations. If, for whatever reason, your personnel are unavailable to provide the necessary assistance in a timely manner, it may substantially increase the work we have to do to complete the engagement within the established deadlines, resulting in an increase in fees over our original fee estimate.

We will provide copies of our reports to the District; however, management is responsible for distribution of the reports and the financial statements. Unless restricted by law or regulation, or containing privileged and confidential information, copies of our reports are to be made available for public inspection.

The audit documentation for this engagement is the property of Goldman, Hunt & Notz, L.L.P. and constitutes confidential information. However, subject to applicable laws and regulations, audit documentation and appropriate individuals will be made available upon request and in a timely manner to Texas Commission on Environmental Quality (TCEQ) or its designee, a federal agency providing direct or indirect funding, or the U.S. Government Accountability Office for the purposes of a quality review of the audit, to resolve audit findings, or to carry out oversight responsibilities. We will notify you of any such request. If requested, access to such audit documentation will be provided under the supervision of Goldman, Hunt & Notz, L.L.P. personnel. Furthermore, upon request, we may provide copies of selected audit documentation to the aforementioned parties. These parties may intend or decide to distribute the copies or information contained therein to others, including other governmental agencies.

The audit documentation for this engagement will be retained for a minimum of five years after the report release date or for any additional period requested by TCEQ. If we are aware that a federal awarding agency or auditee is contesting an audit finding, we will contact the party(ies) contesting the audit finding for guidance prior to destroying the audit documentation.

As an attest client, Goldman, Hunt & Notz, L.L.P. cannot retain your documents on your behalf. This is in accordance with the ET 1.295.143 of the *AICPA Code of Professional Conduct*. The District is responsible for maintaining its own data and records.

Donald Goldman, CPA is the engagement partner and is responsible for supervising the engagement and signing the reports or authorizing another individual to sign them. Our audit engagement ends on delivery of our audit report. Any follow-up services that might be required will be a separate, new engagement. The terms and conditions of that new engagement will be governed by a new, specific engagement letter for that service.

We estimate our fee for the basic audit is $11,000. In addition to the performance of field work, this estimate also includes but is not limited to the following out-of-pocket expenses:

- Travel to and from your office
- Postage costs associated with engagement and confirmation correspondence
- Printing and assembly of the audit report, the financial statements, and other relevant letters and support documentation associated with the audit

It should be noted that this estimated amount is based on the assumption that the District's financial records will be in a good and orderly condition. Requirements for the financial records to meet this standard include but are not limited to:

- All cash in bank reconciled and balanced to general ledger
- Taxes receivable balanced to the Victoria Central Appraisal District or the Tax Office
- Due from Victoria Central Appraisal District will be calculated and balance to general ledger
- Prepaid expenses will have detail and balance to general ledger
- Accounts payable will have detail and balance to general ledger
- All deferred inflows of resources will be calculated and recorded
- All capital assets purchased or disposed of during the fiscal year will be reflected in the appropriate fund accounts
- Net position/net assets will balance with prior year. If there is a difference, an explanation should be available
- No additional adjusting journal entries will be necessary for the financial records to be fairly stated in all material respects at the fiscal year end

- Any differences in revenues or expenditures over 10% from the prior year will be explained
- There is no fraud or suspected fraud
- Gross payroll expense will balance to the four quarterly reports
- Payroll tax expense will tie to Form 941's for the fiscal year
- There are no material contingencies or subsequent events
- There is no material legal activity
- There are no material related parties. The District will know the total expenditures to the known related party
- Declaration pages of all insurance policies will be copied
- All minutes will be available for review

Our fee for these additional services, as anticipated, will be at our standard hourly rates. Based on prior experience, this additional fee is estimated at $4,000. Our standard hourly rates vary according to the degree of responsibility involved and the experience level of the personnel assigned to your audit. We reserve the right to invoice on a monthly basis as the work progresses. In the event we so choose, the invoices are payable upon presentation. If we elect to terminate our services for nonpayment or withdrawal or you elect to terminate our services, our engagement will be deemed to have been completed upon written notification of termination or withdrawal, even if we have not completed our reports. You will be obligated to compensate us for all time expended and to reimburse us for all out-of-pocket costs through the date of termination or withdrawal. The above fee is based on anticipated cooperation from your personnel and the assumption that unexpected circumstances will not be encountered during the audit. If significant additional time is necessary, we will discuss it with you and arrive at a new fee estimate before we incur the additional costs.

You may request that we perform additional services not addressed in this engagement letter. If this occurs, we will communicate with you regarding the scope of the additional services and the estimated fees. We also may issue a separate engagement letter covering the additional services. In the absence of any other written communication from us documenting such additional services, our services will continue to be governed by the terms of this engagement letter.

Reporting

We will issue a written report upon completion of our audit of the District's financial statements. Our report will be addressed to the Board of Directors of the District. Circumstances may arise in which our report may differ from its expected form and content based on the results of our audit. Depending on the nature of these circumstances, it may be necessary for us to modify our opinions, add a separate section, or add an emphasis-of-matter or other-matter paragraph to our auditor's report, or if necessary, withdraw from this engagement. If circumstances occur related to the condition of your records, the availability of sufficient, appropriate audit evidence, or the existence of a significant risk of material misstatement of the financial statements caused by error, fraudulent financial reporting, or misappropriation of assets, which in our professional judgment prevent us from completing the audit or forming an opinion on the financial statements, we retain the right to take any course of action permitted by professional standards, including declining to express an opinion or issue a report, or withdrawing from the engagement.

We will also provide a report (that does not include an opinion) on internal control related to the financial statements and compliance with the provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a material effect on the financial statements as required by *Government Auditing Standards*. The report on internal control and on compliance and other matters will state (1) that the purpose of the report is solely to describe the scope of testing of internal control and compliance, and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control on compliance, and (2) that the report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. The report will also state that the report is not suitable for any other purpose. If during our audit we become aware that the District is subject to an audit requirement that is not encompassed in the terms of this engagement, we will communicate to management and those charged with governance that an audit in accordance with U.S. generally accepted auditing standards and the standards for financial audits contained in *Government Auditing Standards* may not satisfy the relevant legal, regulatory, or contractual requirements.

We appreciate the opportunity to be of service to the District and believe this letter accurately summarizes the significant terms of our engagement. If you have any questions, please let us know. If you agree with the terms of our engagement as described in this letter, please sign the attached copy and return it to us.

Very truly yours,

Goldman, Hunt & Notz, L.L.P.

RESPONSE:

This letter correctly sets forth the understanding of Victoria County Groundwater Conservation District.

Management signature: _____

Title: _____

Date: _____

Governance signature: _____

Title: _____

Date: _____

VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT

2805 N. Navarro, Suite 210
Victoria, Texas 77901
(361) 579-6863

[Date]

Goldman, Hunt & Notz, L.L.P.
5606 N. Navarro, Suite 309
Victoria, Texas 77904

This representation letter is provided in connection with your audit of the financial statements of Victoria County Groundwater Conservation District (the District), which comprise the respective financial position of the governmental activities and each major fund as of September 30, 2023, and the respective changes in financial position for the year then ended, and the disclosures (collectively, the "financial statements"), for the purpose of expressing opinions as to whether the financial statements are presented fairly, in all material respects, in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Certain representations in this letter are described as being limited to matters that are material. Items are considered to be material, regardless of size, if they involve an omission or misstatement of accounting information that, in light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement. An omission or misstatement that is monetarily small in amount could be considered material as a result of qualitative factors.

We confirm, to the best of our knowledge and belief, as of [Date of Auditor's Report] , the following representations made to you during your audit.

Financial Statements

1) We have fulfilled our responsibilities, as set out in the terms of the audit engagement letter dated September 22, 2023, including our responsibility for the preparation and fair presentation of the financial statements in accordance with U.S. GAAP and for preparation of the supplementary information in accordance with the applicable criteria.

2) The financial statements referred to above are fairly presented in conformity with U.S. GAAP and include all properly classified funds and other financial information of the primary government and all component units required by generally accepted accounting principles to be included in the financial reporting entity.

3) We acknowledge our responsibility for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

4) We acknowledge our responsibility for the design, implementation, and maintenance of internal control to prevent and detect fraud.

5) The methods, significant assumptions, and data used in making accounting estimates and their related disclosures are appropriate to achieve recognition, measurement, or disclosure that is reasonable in accordance with U.S. GAAP.

6) Related party relationships and transactions, including revenues, expenditures/expenses, loans, transfers, leasing arrangements, and guarantees, and amounts receivable from or payable to related parties have been appropriately accounted for and disclosed in accordance with U.S. GAAP.

7) Adjustments or disclosures have been made for all events, including instances of noncompliance, subsequent to the date of the financial statements that would require adjustment to or disclosure in the financial statements.

8) The effects of uncorrected misstatements are immaterial, both individually and in the aggregate, to the financial statements as a whole. A list of uncorrected misstatements is attached to the representation letter (X page). In addition, you have proposed adjusting journal entries that have been posted to the entity's accounts. A listing of the proposed adjusting journal entries and resulting trial balance are attached to the representation letter (X pages). We are in agreement with those adjustments.

9) The effects of all known actual or possible litigation, claims, and assessments have been accounted for and disclosed in accordance with U.S. GAAP.

10) Guarantees, whether written or oral, under which the District is contingently liable, if any, have been properly recorded or disclosed.

11) Receivables recorded in the financial statements represent valid claims against debtors for transactions arising on or before the financial statement date and have been reduced to their estimated net realizable value.

12) We believe that the actuarial assumptions and methods used to measure pension and OPEB liabilities and costs for financial accounting purposes are appropriate in the circumstances.

Information Provided

13) We have provided you with:

a) Access to all information, of which we are aware, that is relevant to the preparation and fair presentation of the financial statements, such as records (including information obtained from outside of the general and subsidiary ledgers), documentation, and other matters.

b) Additional information that you have requested from us for the purpose of the audit.

c) Unrestricted access to persons within the District from whom you determined it necessary to obtain audit evidence.

d) Minutes of the meetings of the Board of Directors or summaries of actions of recent meetings for which minutes have not yet been prepared.

14) All material transactions have been recorded in the accounting records and are reflected in the financial statements.

15) We have disclosed to you the results of our assessment of the risk that the financial statements may be materially misstated as a result of fraud.

16) We have no knowledge of any fraud or suspected fraud that affects the District and involves—

- Management,
- Employees who have significant roles in internal control, or
- Others where the fraud could have a material effect on the financial statements.

17) We have no knowledge of any allegations of fraud or suspected fraud affecting the District's financial statements communicated by employees, former employees, regulators, or others.

18) We have no knowledge of instances of noncompliance or suspected noncompliance with provisions of laws, regulations, contracts, or grant agreements, or waste or abuse, whose effects should be considered when preparing financial statements.

19) We have disclosed to you all known actual or possible litigation, claims, and assessments whose effects should be considered when preparing the financial statements.

20) We have disclosed to you the names of the District's related parties and all the related party relationships and transactions, including any side agreements.

Government-specific

20) There have been no communications from regulatory agencies concerning noncompliance with, or deficiencies in, financial reporting practices.

21) We have a process to track the status of audit findings and recommendations.

22) We have identified to you any previous audits, attestation engagements, and other studies related to the objectives of the audit and whether related recommendations have been implemented.

23) We have identified to you any investigations or legal proceedings that have been initiated with respect to the period under audit.

24) We have provided our views on reported findings, conclusions, and recommendations, as well as our planned corrective actions, for the report.

25) The District has no plans or intentions that may materially affect the carrying value or classification of assets, deferred outflows of resources, liabilities, deferred inflows of resources, and fund balance or net position.

26) We are responsible for compliance with the laws, regulations, and provisions of contracts and grant agreements applicable to us, including tax or debt limits and debt contracts, and legal and contractual provisions for reporting specific activities in separate funds.

27) We have identified and disclosed to you all instances of identified and suspected fraud and noncompliance with provisions of laws, regulations, contracts, and grant agreements that we believe have a material effect on the financial statements.

28) There are no violations or possible violations of budget ordinances, laws and regulations (including those pertaining to adopting, approving, and amending budgets), provisions of contracts and grant agreements, tax or debt limits, and any related debt covenants whose effects should be considered for disclosure in the financial statements, or as a basis for recording a loss contingency, or for reporting on noncompliance.

29) As part of your audit, you assisted with preparation of the financial statements and disclosures. We acknowledge our responsibility as it relates to those nonaudit services, including that we assume all management responsibilities; oversee the services by designating an individual, preferably within senior management, who possesses suitable skill, knowledge, or experience; evaluate the adequacy and results of the services performed; and accept responsibility for the results of the services. We have reviewed, approved, and accepted responsibility for those financial statements and disclosures.

30) In regard to the nonaudit services performed by you, including drafting the financial statements, drafting the management's discussion and analysis, drafting the notes to the financial statements, drafting the required supplementary information, and preparing proposed adjusting journal entries to record accruals at September 30, 2023, we have—

    1) Assumed all management responsibilities.

    2) Designated Tim Andruss, General Manager, who has suitable skill, knowledge, or experience to oversee the services.

    3) Evaluated the adequacy and results of the services performed.

    4) Accepted responsibility for the results of the services.

    5) Ensured that the data and records are complete, and we have sufficient information to oversee the services.

31) The District has satisfactory title to all owned assets, and there are no liens or encumbrances on such assets nor has any asset been pledged as collateral.

32) The District has complied with all aspects of contractual agreements that would have a material effect on the financial statements in the event of noncompliance.

33) The financial statements include all component units, appropriately present majority equity interests in legally separate organizations and joint ventures with an equity interest, and properly disclose all other joint ventures and other related organizations.

34) The financial statements include all fiduciary activities required by GASBS No. 84, as amended.

35) The financial statements properly classify all funds and activities in accordance with GASBS No. 34, as amended.

36) All funds that meet the quantitative criteria in GASBS Nos. 34 and 37 for presentation as major are identified and presented as such and all other funds that are presented as major are particularly important to financial statement users.

37) Components of net position (net investment in capital assets; restricted; and unrestricted) and classifications of fund balance (nonspendable, restricted, committed, assigned, and unassigned) are properly classified and, if applicable, approved.

38) Investments, derivative instrument transactions, and land and other real estate held by endowments are properly valued.

39) Provisions for uncollectible receivables have been properly identified and recorded.

40) Expenses have been appropriately classified in or allocated to functions and programs in the statement of activities, and allocations have been made on a reasonable basis.

41) Revenues are appropriately classified in the statement of activities within program revenues, general revenues, contributions to term or permanent endowments, or contributions to permanent fund principal.

42) Interfund, internal, and intra-entity activity and balances have been appropriately classified and reported.

43) Deposits and investment securities and derivative instrument transactions are properly classified as to risk and are properly disclosed.

44) Capital assets, including infrastructure and intangible assets, are properly capitalized, reported, and, if applicable, depreciated or amortized.

45) We have appropriately disclosed the District's policy regarding whether to first apply restricted or unrestricted resources when an expense is incurred for purposes for which both restricted and unrestricted net position is available and have determined that net position is properly recognized under the policy.

46) We are following our established accounting policy regarding which resources (that is, restricted, committed, assigned, or unassigned) are considered to be spent first for expenditures for which more than one resource classification is available. That policy determines the fund balance classifications for financial reporting purposes.

47) We acknowledge our responsibility for the required supplementary information (RSI). The RSI is measured and presented within prescribed guidelines and the methods of measurement and presentation have not changed from those used in the prior period. We have disclosed to you any significant assumptions and interpretations underlying the measurement and presentation of the RSI.

Management	Board of Governance
Signature: _____	Signature: _____
Title: _____	Title: _____

Goldman, Hunt & Notz, L.L.P.

Certified Public Accountants

DONALD G. GOLDMAN, CPA
D. DALE HUNT, CPA
JAMIE K. NOTZ, CPA, CVA*

*CERTIFIED VALUATION ANALYST

MEMBERS OF:
AMERICAN INSTITUTE OF
CERTIFIED PUBLIC ACCOUNTANTS

TEXAS SOCIETY OF
CERTIFIED PUBLIC ACCOUNTANTS

KEITH H. COX, CPA, CISA'
STEPHANIE S. KOCH, CPA

'CERTIFIED INFORMATION SYSTEMS AUDITOR

September 22, 2023

To Management and Board of Directors
Victoria County Groundwater Conservation District
2805 N. Navarro, Suite 210
Victoria, TX 77901

We are pleased to confirm our understanding of the services we are to provide Victoria County Groundwater Conservation District (the District) for the year ended September 30, 2023.

Audit Scope and Objectives

We will audit the financial statements of the governmental activities, each major fund, and the disclosures, which collectively comprise the basic financial statements of the District as of and for the year ended September 30, 2023. Accounting standards generally accepted in the United States of America (GAAP) provide for certain required supplementary information (RSI), such as management's discussion and analysis (MD&A), to supplement the District's basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. As part of our engagement, we will apply certain limited procedures to the District's RSI in accordance with auditing standards generally accepted in the United States of America (GAAS). These limited procedures will consist of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We will not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient appropriate evidence to express an opinion or provide any assurance. The following RSI is required by GAAP and will be subjected to certain limited procedures, but will not be audited:

1) Management's Discussion and Analysis
2) Budgetary Comparison Schedule
3) Required Supplementary Pension

The objectives of our audit are to obtain reasonable assurance as to whether the financial statements as a whole are free from material misstatement, whether due to fraud or error; issue an auditor's report that includes our opinion about whether your financial statements are fairly presented, in all material respects, in conformity with GAAP; and report on the fairness of the supplementary information referred to in the second paragraph when considered in relation to the financial statements as a whole. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. Misstatements, including omissions, can arise from fraud or error and are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment of a reasonable user made based on the financial statements.

TELEPHONE (361) 573-2471
FACSIMILE (361) 575-0444

5606 NORTH NAVARRO STREET, SUITE 309
VICTORIA, TEXAS 77904-1770

EMAIL: ghn@tisd.net

The objectives also include reporting on internal control over financial reporting and compliance with provisions of laws, regulations, contracts, and award agreements, noncompliance with which could have a material effect on the financial statements in accordance with *Government Auditing Standards*.

Auditor's Responsibilities for the Audit of the Financial Statements

We will conduct our audit in accordance with GAAS and the standards for financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, and will include tests of your accounting records of the District and other procedures we consider necessary to enable us to express such opinions. As part of an audit in accordance with GAAS and *Government Auditing Standards*, we exercise professional judgment and maintain professional skepticism throughout the audit.

We will evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management. We will also evaluate the overall presentation of the financial statements, including the disclosures, and determine whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation. We will plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether from (1) errors, (2) fraudulent financial reporting, (3) misappropriation of assets, or (4) violations of laws or governmental regulations that are attributable to the government or to acts by management or employees acting on behalf of the government. Because the determination of waste and abuse is subjective, *Government Auditing Standards* do not expect auditors to perform specific procedures to detect waste or abuse in financial audits nor do they expect auditors to provide reasonable assurance of detecting waste or abuse.

Because of the inherent limitations of an audit, combined with the inherent limitations of internal control, and because we will not perform a detailed examination of all transactions, there is an unavoidable risk that some material misstatements may not be detected by us, even though the audit is properly planned and performed in accordance with GAAS and *Government Auditing Standards*. In addition, an audit is not designed to detect immaterial misstatements or violations of laws or governmental regulations that do not have a direct and material effect on the financial statements. Our responsibility as auditors is limited to the period covered by our audit and does not extend to any later periods for which we are not engaged as auditors.

In connection with this engagement, we may communicate with you or others via email transmission. As emails can be intercepted and read, disclosed, or otherwise used or communicated by an unintended third party, or may not be delivered to each of the parties to whom they are directed and only to such parties, we cannot guarantee or warrant that emails from us will be properly delivered and read only by the addressee. Therefore, we specifically disclaim and waive any liability or responsibility whatsoever for interception or unintentional disclosure of emails transmitted by us in connection with the performance of this engagement. In that regard, you agree that we shall have no liability for any loss or damage to any person or entity resulting from the use of email transmissions, including any consequential, incidental, direct, indirect, or special damages, such as loss of revenues or anticipated profits, or disclosure or communication of confidential or proprietary information.

We will also conclude, based on the audit evidence obtained, whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the government's ability to continue as a going concern for a reasonable period of time.

Our procedures will include tests of documentary evidence supporting the transactions recorded in the accounts, and direct confirmation of receivables and certain assets and liabilities by correspondence with selected customers, creditors, and financial institutions. We will also request written representations from your attorneys as part of the engagement and they may bill you for responding to this inquiry.

We have identified the following significant risk(s) of material misstatement as part of our audit planning:

- Improper revenue recognition due to fraud or error
- Management override of controls

Our audit of financial statements does not relieve you of your responsibilities.

Audit Procedures—Internal Control

We will obtain an understanding of the government and its environment, including the system of internal control, sufficient to identify and assess the risks of material misstatement of the financial statements, whether due to error or fraud, and to design and perform audit procedures responsive to those risks and obtain evidence that is sufficient and appropriate to provide a basis for our opinions. Tests of controls may be performed to test the effectiveness of certain controls that we consider relevant to preventing and detecting errors and fraud that are material to the financial statements and to preventing and detecting misstatements resulting from illegal acts and other noncompliance matters that have a direct and material effect on the financial statements. Our tests, if performed, will be less in scope than would be necessary to render an opinion on internal control and, accordingly, no opinion will be expressed in our report on internal control issued pursuant to *Government Auditing Standards.* The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentation, or the override of internal control. An audit is not designed to provide assurance on internal control or to identify significant deficiencies or material weaknesses. Accordingly, we will express no such opinion. However, during the audit, we will communicate to management and those charged with governance internal control related matters that are required to be communicated under AICPA professional standards and *Government Auditing Standards.*

Audit Procedures—Compliance

As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we will perform tests of the District's compliance with the provisions of applicable laws, regulations, contracts, agreements, and grants. However, the objective of our audit will not be to provide an opinion on overall compliance and we will not express such an opinion in our report on compliance issued pursuant to *Government Auditing Standards.*

Other Services

We will also assist in preparing the financial statements and related notes of the District in conformity with accounting principles generally accepted in the United States of America based on information provided by you.

We will also perform the following nonaudit services:

1. Drafting the Management's Discussion and Analysis
2. Drafting the Required Supplementary Information
3. Converting cash basis financial statements to accrual basis by recommending adjusting journal entries for approval
4. Recommending adjusting journal entries to fairly state financial statements in accordance with GAAP

These nonaudit services do not constitute an audit under *Government Auditing Standards* and such services will not be conducted in accordance with *Government Auditing Standards.* We will perform the services in accordance with applicable professional standards. The other services are limited to the financial statement services previously defined. We, in our sole professional judgment, reserve the right to refuse to perform any procedure or take any action that could be construed as assuming management responsibilities. These nonaudit services will be billed separately from the attest service.

You agree to assume all management responsibilities relating to the financial statements and related notes and any other nonaudit services we provide. You will be required to acknowledge in the management representation letter our assistance with preparation of the financial statements and related notes and that you have reviewed and approved the financial statements and related notes prior to their issuance and have accepted responsibility for them. Further, you agree to oversee the nonaudit services we provide by designating an individual, Tim Andruss, General Manager, with suitable skill, knowledge, or experience; evaluate the adequacy and results of those services; and accept responsibility for them.

Responsibilities of Management for the Financial Statements

Our audit will be conducted on the basis that you acknowledge and understand your responsibility for designing, implementing, establishing, and maintaining effective internal controls relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error, and for evaluating and monitoring ongoing activities to help ensure that appropriate goals and objectives are met; following laws and regulations; and ensuring that management and financial information is reliable and properly reported. Management is also responsible for implementing systems designed to achieve compliance with applicable laws, regulations, contracts, and grant agreements. You are also responsible for the selection and application of accounting principles, for the preparation and fair presentation of the financial statements and all accompanying information in conformity with accounting principles generally accepted in the United States of America, and for compliance with applicable laws and regulations and the provisions of contracts and grant agreements.

Management is responsible for making drafts of financial statements, all financial records, and related information available to us and for the accuracy and completeness of that information (including information from outside of the general and subsidiary ledgers). You are also responsible for providing us with (1) access to all information of which you are aware that is relevant to the preparation and fair presentation of the financial statements, such as records, documentation, identification of all related parties and all related-party relationships and transactions, and other matters; (2) additional information that we may request for the purpose of the audit; and (3) unrestricted access to persons within the government from whom we determine it necessary to obtain audit evidence. At the conclusion of our audit, we will require certain written representations from you about your responsibilities for the financial statements; compliance with laws, regulations, contracts, and grant agreements; and other responsibilities required by GAAS and *Government Auditing Standards*.

Your responsibilities include adjusting the financial statements to correct material misstatements and for confirming to us in the written representation letter that the effects of any uncorrected misstatements aggregated by us during the current engagement and pertaining to the latest period presented are immaterial, both individually and in the aggregate, to the financial statements of each opinion unit taken as a whole.

You are responsible for the design and implementation of programs and controls to prevent and detect fraud, and for informing us about all known or suspected fraud affecting the government involving (1) management, (2) employees who have significant roles in internal control, and (3) others where the fraud could have a material effect on the financial statements. Your responsibilities include informing us of your knowledge of any allegations of fraud or suspected fraud affecting the government received in communications from employees, former employees, grantors, regulators, or others. In addition, you are responsible for identifying and ensuring that the government complies with applicable laws, regulations, contracts, agreements, and grants and for taking timely and appropriate steps to remedy fraud and noncompliance with provisions of laws, regulations, or contracts or grant agreements that we report.

Management is responsible for establishing and maintaining a process for tracking the status of audit findings and recommendations. Management is also responsible for identifying and providing report copies of previous financial audits, attestation engagements, performance audits or other studies related to the objectives discussed in the Audit Scope and Objectives section of this letter. This responsibility includes relaying to us corrective actions taken to address significant findings and recommendations resulting from those audits, attestation engagements, performance audits, or other studies. You are also responsible for providing management's views on our current findings, conclusions, and recommendations, as well as your planned corrective actions, for the report, and for the timing and format for providing that information.

With regard to publishing the financial statements on your website, you understand that websites are a means of distributing information and, therefore, we are not required to read the information contained in those sites or to consider the consistency of other information on the website with the original document.

Engagement Administration, Fees, and Other

We will schedule the engagement based in part on deadlines, working conditions, and the availability of your key personnel. We will plan the engagement based on the assumption that your personnel will cooperate and provide assistance by performing tasks such as preparing requested schedules, retrieving supporting documents, and preparing confirmations. If, for whatever reason, your personnel are unavailable to provide the necessary assistance in a timely manner, it may substantially increase the work we have to do to complete the engagement within the established deadlines, resulting in an increase in fees over our original fee estimate.

We will provide copies of our reports to the District; however, management is responsible for distribution of the reports and the financial statements. Unless restricted by law or regulation, or containing privileged and confidential information, copies of our reports are to be made available for public inspection.

The audit documentation for this engagement is the property of Goldman, Hunt & Notz, L.L.P. and constitutes confidential information. However, subject to applicable laws and regulations, audit documentation and appropriate individuals will be made available upon request and in a timely manner to Texas Commission on Environmental Quality (TCEQ) or its designee, a federal agency providing direct or indirect funding, or the U.S. Government Accountability Office for the purposes of a quality review of the audit, to resolve audit findings, or to carry out oversight responsibilities. We will notify you of any such request. If requested, access to such audit documentation will be provided under the supervision of Goldman, Hunt & Notz, L.L.P. personnel. Furthermore, upon request, we may provide copies of selected audit documentation to the aforementioned parties. These parties may intend or decide to distribute the copies or information contained therein to others, including other governmental agencies.

The audit documentation for this engagement will be retained for a minimum of five years after the report release date or for any additional period requested by TCEQ. If we are aware that a federal awarding agency or auditee is contesting an audit finding, we will contact the party(ies) contesting the audit finding for guidance prior to destroying the audit documentation.

As an attest client, Goldman, Hunt & Notz, L.L.P. cannot retain your documents on your behalf. This is in accordance with the ET 1.295.143 of the *AICPA Code of Professional Conduct*. The District is responsible for maintaining its own data and records.

Donald Goldman, CPA is the engagement partner and is responsible for supervising the engagement and signing the reports or authorizing another individual to sign them. Our audit engagement ends on delivery of our audit report. Any follow-up services that might be required will be a separate, new engagement. The terms and conditions of that new engagement will be governed by a new, specific engagement letter for that service.

We estimate our fee for the basic audit is $11,000. In addition to the performance of field work, this estimate also includes but is not limited to the following out-of-pocket expenses:

- Travel to and from your office
- Postage costs associated with engagement and confirmation correspondence
- Printing and assembly of the audit report, the financial statements, and other relevant letters and support documentation associated with the audit

It should be noted that this estimated amount is based on the assumption that the District's financial records will be in a good and orderly condition. Requirements for the financial records to meet this standard include but are not limited to:

- All cash in bank reconciled and balanced to general ledger
- Taxes receivable balanced to the Victoria Central Appraisal District or the Tax Office
- Due from Victoria Central Appraisal District will be calculated and balance to general ledger
- Prepaid expenses will have detail and balance to general ledger
- Accounts payable will have detail and balance to general ledger
- All deferred inflows of resources will be calculated and recorded
- All capital assets purchased or disposed of during the fiscal year will be reflected in the appropriate fund accounts
- Net position/net assets will balance with prior year. If there is a difference, an explanation should be available
- No additional adjusting journal entries will be necessary for the financial records to be fairly stated in all material respects at the fiscal year end

- Any differences in revenues or expenditures over 10% from the prior year will be explained
- There is no fraud or suspected fraud
- Gross payroll expense will balance to the four quarterly reports
- Payroll tax expense will tie to Form 941's for the fiscal year
- There are no material contingencies or subsequent events
- There is no material legal activity
- There are no material related parties. The District will know the total expenditures to the known related party
- Declaration pages of all insurance policies will be copied
- All minutes will be available for review

Our fee for these additional services, as anticipated, will be at our standard hourly rates. Based on prior experience, this additional fee is estimated at $4,000. Our standard hourly rates vary according to the degree of responsibility involved and the experience level of the personnel assigned to your audit. We reserve the right to invoice on a monthly basis as the work progresses. In the event we so choose, the invoices are payable upon presentation. If we elect to terminate our services for nonpayment or withdrawal or you elect to terminate our services, our engagement will be deemed to have been completed upon written notification of termination or withdrawal, even if we have not completed our reports. You will be obligated to compensate us for all time expended and to reimburse us for all out-of-pocket costs through the date of termination or withdrawal. The above fee is based on anticipated cooperation from your personnel and the assumption that unexpected circumstances will not be encountered during the audit. If significant additional time is necessary, we will discuss it with you and arrive at a new fee estimate before we incur the additional costs.

You may request that we perform additional services not addressed in this engagement letter. If this occurs, we will communicate with you regarding the scope of the additional services and the estimated fees. We also may issue a separate engagement letter covering the additional services. In the absence of any other written communication from us documenting such additional services, our services will continue to be governed by the terms of this engagement letter.

Reporting

We will issue a written report upon completion of our audit of the District's financial statements. Our report will be addressed to the Board of Directors of the District. Circumstances may arise in which our report may differ from its expected form and content based on the results of our audit. Depending on the nature of these circumstances, it may be necessary for us to modify our opinions, add a separate section, or add an emphasis-of-matter or other-matter paragraph to our auditor's report, or if necessary, withdraw from this engagement. If circumstances occur related to the condition of your records, the availability of sufficient, appropriate audit evidence, or the existence of a significant risk of material misstatement of the financial statements caused by error, fraudulent financial reporting, or misappropriation of assets, which in our professional judgment prevent us from completing the audit or forming an opinion on the financial statements, we retain the right to take any course of action permitted by professional standards, including declining to express an opinion or issue a report, or withdrawing from the engagement.

We will also provide a report (that does not include an opinion) on internal control related to the financial statements and compliance with the provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a material effect on the financial statements as required by *Government Auditing Standards*. The report on internal control and on compliance and other matters will state (1) that the purpose of the report is solely to describe the scope of testing of internal control and compliance, and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control on compliance, and (2) that the report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. The report will also state that the report is not suitable for any other purpose. If during our audit we become aware that the District is subject to an audit requirement that is not encompassed in the terms of this engagement, we will communicate to management and those charged with governance that an audit in accordance with U.S. generally accepted auditing standards and the standards for financial audits contained in *Government Auditing Standards* may not satisfy the relevant legal, regulatory, or contractual requirements.

We appreciate the opportunity to be of service to the District and believe this letter accurately summarizes the significant terms of our engagement. If you have any questions, please let us know. If you agree with the terms of our engagement as described in this letter, please sign the attached copy and return it to us.

Very truly yours,

Goldman, Hunt & Notz, L.L.P.

RESPONSE:

This letter correctly sets forth the understanding of Victoria County Groundwater Conservation District.

Management signature: _____ COPY

Title: _____

Date: _____

Governance signature: _____ COPY

Title: _____

Date: _____

TECHNICAL SERVICES AGREEMENT

VCGCD-TSA-DBSA-2023

I. PARTIES

A. This Services Agreement (the "Agreement") is entered into by and between Victoria County Groundwater Conservation District, a political subdivision within the State of Texas (the "Contractor" for services), and Daniel B. Stephens & Associates, Inc. (the "Consultant").

II. BACKGROUND

A. The Consultant is a consulting firm with extensive experience and expertise in hydrogeology including detailed understanding of the Gulf Coast Aquifer hydrogeology obtained, in part, by completing extensive analyses of Gulf Coast Aquifer issues for Groundwater Management Areas (GMAs) 12 and 15, and the Texas Water Development Board.

B. The Contractor wishes to retain the services of the Consultant to obtain technical assistance related to groundwater conservation, groundwater monitoring, groundwater policy, groundwater protection, and groundwater resource planning.

III. SERVICES

A. During the term of this Agreement, the Consultant shall perform services related to groundwater conservation, groundwater monitoring, groundwater policy, groundwater protection, and groundwater resource planning. The Consultant shall conduct the Services in compliance with all applicable laws and regulations.

B. In its performance of the services, the Consultant shall act as an independent entity and not as an employee or agent of the Contractor for services. Therefore, the parties agree that this Agreement creates an independent contractor relationship, not an employment relationship.

C. The parties acknowledge that neither party has, or shall be deemed to have, the authority to bind the other party.

D. The Consultant shall submit proposals describing the services to be performed for the Contractor. The Contractor shall approve proposals prior to Consultant providing any services.

IV. TERM AND TERMINATION

A. This agreement shall be effective until September 30, 2024, and may be renewed by written agreement of both parties. Either party may terminate this Agreement for any or no reason upon thirty (30) days of written notice to the other party.

V. COMPENSATION AND EXPENSES

A. As consideration for the services provided by Consultant, the Contractor will pay the Consultant for actual labor and expenses directly associated with the completion of tasks requested by the Contractor.

B. The payment for services shall be made within 60 days of receipt of invoice from Contractor.

C. The following schedule establishes the rates to be used for calculating labor and expenses:

Labor category	**Rate**
Senior Geologist	$_167.00_/hour Paul Kirby
Principal Hydrogeologist	$_275.00_/hour Neil Blandford
Principal Scientist	$ 245.00/hour Kevin Hopson
Hydrogeologist/Planner	$_195.00/hour Amy Ewing
Geologist	$_145.00/hour David Manoukian
Modeler	$_245.00/hour Todd Umstot
GIS Specialist	$_195.00/hour Kenny Calhoun
Field Technician	$_112.00/hour Daniel Acevado
Other Direct Costs	10% markup
Mileage	IRS Rate/Mile

VI. REPRESENTATIONS AND WARRANTIES

A. The Consultant represents that this Agreement has been duly executed and delivered by it and constitutes a valid, binding obligation enforceable against it in accordance with the terms hereof.

B. The Contractor represents that this Agreement has been duly executed and delivered by it and constitutes a valid, binding obligation enforceable against it in accordance with the terms hereof.

C. The Consultant verifies that it is in compliance with Chapter 2271, Texas Government Code (Prohibition on Contracts with Companies Boycotting Israel) and Chapter 2274, Texas Government Code (Prohibition on Contracts with Companies that Discriminate Against Firearms and Ammunition Industries).

VII. ASSIGNMENTS

A. The rights and liabilities of the parties hereto shall bind and inure to the benefit of their respective successors, heirs, executors and administrators, as the case may be.

B. The Contractor has specifically contracted for the Services to be provided by the Consultant. As such, the Consultant may not assign or delegate the obligations under this Agreement either in whole or in part without the prior written consent of the Contractor.

VIII. HEADINGS

A. The section headings used in this Agreement are intended for convenience of reference and shall not by themselves determine the construction or interpretation of any provision of this Agreement.

IX. GOVERNING LAW

A. This Agreement shall be construed in accordance with the laws of the State of Texas, and is performable in Victoria County, Texas.

X. NOTICES

A. All notices and communications under this Agreement shall be in writing and shall be deemed to have been given when received, if such notice or communication is delivered by facsimile, hand delivery or overnight courier, and two (2) days after mailing if such notice or communication is sent by United States registered or certified mail, return receipt requested, first class postage prepaid.

B. All notices and communications, to be effective, must be properly addressed to the party to whom the same is directed at its address as follows:

Consultant: Daniel B. Stephens & Associates, Inc., 12303 Technology Boulevard, Suite 930D, Austin, Texas 78727

Contractor: Victoria County Groundwater Conservation District, 2805 N. Navarro St., Suite 210, Victoria, Texas 77901

XI. ENFORCEMENT

A. If any portion of this Agreement is determined to be invalid or unenforceable, such portion shall be adjusted, rather than voided, to achieve the intent of the parties to the extent possible, and the remainder shall be enforced to the maximum extent possible.

XII. ENTIRE AGREEMENT AND MODIFICATIONS

A. Except as otherwise provided herein or in the exhibits hereto, this Agreement represents the entire understanding between the parties with respect to the subject matter of this Agreement, and this Agreement supersedes any and all prior and contemporaneous understandings, agreements, plans, and negotiations, whether written or oral, with respect to the subject matter hereof. All modifications to the Agreement must be in writing and signed by the parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date indicated below.

Daniel B. Stephens & Associates, Inc.

BY:

_____ 9/18/2023

James A. Kelsey, President, DBS&A Date

VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT

BY:

_____ _____

Mark Meek, President Date