Texana Groundwater Conservation District

Management Plan

Texana Groundwater Conservation District Board of Directors Management Plan Revision Adoption:	**February 18, 2016**
Texas Water Development Board Administrative Management Plan Revision Approval:	

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DISTRICT MISSION

The mission of the Texana Groundwater Conservation District (DISTRICT) is to develop sound water conservation and management strategies designed to conserve, preserve, protect, and prevent waste of groundwater resources for long-term sustainability within Jackson County for the benefit of Jackson County's landowners, citizens, economy, and environment.

The DISTRICT will implement these strategies through the acquisition and dissemination of hydrogeological information, the development of programs and incentives to conserve and protect groundwater resources, and the adoption and enforcement of fair and appropriate District rules governing the production and use of the groundwater resources within the District.

PURPOSE OF THE MANAGEMENT PLAN

Senate Bill 1, enacted by the 75th Texas Legislature in 1997, and Senate Bill 2, enacted by the 77th Texas Legislature in 2001, established a comprehensive statewide water resource planning process and the actions necessary for groundwater conservation districts to manage and conserve the groundwater resources of the state of Texas. These bills required all groundwater conservation districts to develop a management plan which defines the groundwater needs and groundwater supplies within each district and the goals each district has set to achieve its mission.

In addition, the 79th Texas Legislature enacted House Bill 1763 in 2005 that requires joint planning among districts that are in the same groundwater management area. These districts must jointly agree upon and establish the desired future conditions of the aquifers within their respective groundwater management areas. Through this process, the groundwater conservation districts will submit the desired future conditions to the executive administrator of the Texas Water Development Board who, in turn, will provide each district within the groundwater management area with the amount of modeled available groundwater within each district. The modeled available groundwater will be based on the desired future conditions jointly established for each aquifer within the groundwater management area.

Technical information, such as the desired future conditions within the District's jurisdiction and the amount of modeled available groundwater from such aquifers is required by statute to be included in the DISTRICT's management plan and will guide the DISTRICT's regulatory and management policies. This management plan is intended to satisfy the requirements of Senate Bill 1, Senate Bill 2, House Bill 1763, the statutory requirements of Chapter 36 of the Texas Water Code, and the rules and requirements of the Texas Water Development Board.

DISTRICT INFORMATION

Creation

The DISTRICT was created by Senate Bill 1911, 76th Legislature and codified as Chapter 8857, Special District and Local Laws Code. The citizens of Jackson County through a confirmation election held on November 6, 2001 ratified the DISTRICT. The DISTRICT was formed to protect, conserve, and prevent waste of the groundwater resources beneath the area of Jackson County. To manage the groundwater resources under its jurisdiction, the DISTRICT is charged with the rights and responsibilities specified in its enabling legislation; the provisions of Chapter 36 of the Texas Water Code; this Management Plan, and the District Rules.

Directors

The Texana Groundwater Conservation District Board of Directors consists of seven members. These directors are elected by the voters of Jackson County and serve a four-year term. The DISTRICT observes the same four precincts as the Jackson County Commissioners' with three at-large positions. Director terms are staggered on a two-year election interval in even numbered years.

Authority

The DISTRICT has the rights and responsibilities provided in Chapter 36 of the Texas Water Code and Chapter 356 of Title 31 of the Texas Administrative Code. The DISTRICT has the authority to undertake hydrogeological studies, adopt a management plan, provide for the permitting of certain water wells, and implement programs to achieve statutory requirements. The DISTRICT has rule-making authority to implement its policies and procedures to manage the groundwater resources of Jackson County.

Location and Extent

The boundaries of the DISTRICT are conterminous with those of Jackson County, Texas. This area encompasses approximately 829.25 square miles. The District is bounded by Calhoun County, Colorado County, Lavaca County, Matagorda County, Victoria County, and Wharton County.

GROUNDWATER RESOURCES OF JACKSON COUNTY

Depositions from sediment-laden rivers, currents from the Gulf of Mexico, and storm waves have influenced the geologic formations in Jackson County. The fluctuation of the coastline over geologic eons contributed to the deposition of sediments within the Jackson County as well. The geologic formations in the Jackson County according to their depositional age are summarized in Figure 1. The Gulf Coast Aquifer underlies Jackson County.

Figure 1: Geologic and Hydrogeological Units of the Gulf Coast Aquifer in Jackson County.

<table>
<tr><th colspan="2">Stratigraphic Unit</th><th>Hydrogeologic Unit</th></tr>
<tr><td colspan="2">Alluvium</td><td rowspan="5">Chicot Aquifer</td></tr>
<tr><td colspan="2">Beaumont Clay</td></tr>
<tr><td>Montgomery Formation</td><td rowspan="2">Lissie Formation</td></tr>
<tr><td>Bentley Formation</td></tr>
<tr><td colspan="2">Willis Sand</td></tr>
<tr><td colspan="2">Goliad Sand</td><td rowspan="2">Evangeline Aquifer</td></tr>
<tr><td colspan="2" rowspan="2">Fleming Formation</td></tr>
<tr><td>Burkeville Confining Unit</td></tr>
<tr><td colspan="2">Oakville Sandstone</td><td rowspan="2">Jasper Aquifer</td></tr>
<tr><td colspan="2">Catahoula Sandstone (Tuff)</td></tr>
</table>

The Gulf Coast Aquifer System is conceptualized to comprise of four distinct aquifer components: Chicot, Evangeline, Burkeville Confining Unit and the Jasper Aquifer (Baker, 1979). These aquifer components are included within the Central Gulf Coast Groundwater Availability Model developed by the Texas Water Development Board (Chowdhury and Mace, 2004). The Chicot and the Evangeline Aquifers are utilized the most within Jackson County. The Chicot Aquifer outcrops across the entire county. The thickness of the Chicot Aquifer ranges up to approximately 1,000 feet in Jackson County. The thickness of the Evangeline Aquifer ranges from 1,000 feet to 1,600 feet in Jackson County. The Chicot and Evangeline Aquifer consist of interbedded sands, silts and clays. The sand content is higher in the Evangeline Aquifer compared to the Chicot Aquifer. The water quality in the aquifer generally deteriorates along the coast.

STATEMENT OF GUIDING PRINCIPLES

The DISTRICT recognizes that the groundwater resources of Jackson County and the region are of vital importance to the many users who are dependent on these valuable resources. In addition, the DISTRICT recognizes that the landowners have an ownership right in the groundwater resources associated with their properties and are the primary stewards of the groundwater resources associated with their properties. The District will work with interested parties, especially landowners, in Jackson County to conserve, preserve, protect, and prevent waste of this most valuable resource, for the benefit of the landowners, the public, the local economy, and the environment.

The DISTRICT's management plan is intended to serve as a tool to focus the thoughts and actions of those given the responsibility for the execution of the DISTRICT's activities as well as to provide information to the staff of the DISTRICT, landowners, and others responsible for the execution of, or compliance with, the DISTRICT's policies and rules. The DISTRICT will carry out its programs and responsibilities in implementing this management plan in a prudent and cost effective manner. The DISTRICT, with public input, will adopt and enforce rules necessary to implement this management plan.

CRITERIA FOR PLAN APPROVAL

Planning Horizon

The time period for this plan is ten years from the date of approval by the Texas Water Development Board. This plan will be reviewed within five years as required by §36.1072(e) of the Texas Water Code. The DISTRICT will consider the necessity to amend the plan and re-adopt this management plan with or without amendments as required by §36.1072(e) of the Texas Water Code.

This management plan will remain in effect until replaced by a revised management plan approved by the Texas Water Development Board.

Notice and Hearing Related to Plan Adoption - TWC §36.1071(a)

Public notices documenting that this plan was considered and adopted following appropriate public hearings are included in Appendix D.

Coordination with Regional Surface Water Management Entities - TWC §36.1071(a)

Letters transmitting this plan to the surface water management entities of the Jackson County region for coordination purposes are included in Appendix E.

Texana Groundwater Conservation District Board of Director Resolution Adopting Management Plan

A copy of the DISTRICT's resolution adopting this plan is included in Appendix F.

ESTIMATES OF TECHNICAL INFORMATION REQUIRED BY §36.1071 OF THE TEXAS WATER CODE AND RULE 356.52 OF TITLE 31 OF THE TEXAS ADMINISTRATIVE CODE

Estimate of Modeled Available Groundwater in the DISTRICT based on Desired Future Conditions – TWC §36.1071(e)(3)(A) and 31 TAC 356.52(a)(5)(A)

Modeled available groundwater is defined in §36.001 of the Texas Water 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 established under Section 36.108." Desired future condition is defined in §36.001 of the Texas Water Code as "a quantitative description, adopted in accordance with §36.108 of the Texas Water Code, of the desired condition of the groundwater resources in a management area at one or more specified future times." The desired future condition of an aquifer may only be determined through joint planning with other groundwater conservation districts in the same groundwater management area as required by the 79th Legislature with the passage of House Bill 1763 into law.

The DISTRICT is located in Groundwater Management Area 15. The groundwater conservation districts of Groundwater Management Area 15 completed the first-round of joint planning process to determine the desired future condition of the aquifers within the groundwater management area.

District representatives of Groundwater Management Area 15 adopted, by resolution, the desired future condition for the Gulf Coast Aquifer within Groundwater Management Area 15 on July 14, 2010. The desired future condition is stated as follows:

"An average drawdown of the Gulf Coast Aquifer within the GMA 15 boundary of 12 feet relative to year 1999 starting conditions in accordance with Table 7 of GAM Run 10-008 Addendum."

The Texas Water Development Board reported the modeled available groundwater for Groundwater Management Area 15 based on the desired future condition in GAM Run 10-028 MAG which is incorporated into this management plan as Appendix C. The modeled available groundwater, in acre-feet per year (AFY), of the Gulf Coast Aquifer within the DISTRICT per Table 5 of the GAM Run 10-028 MAG report is as follows:

Year					
2010	2020	2030	2040	2050	2060
76,386 AFY	76,386 AFY	76,386 AFY	76,386 AFY	76,386 AFY	76,386 AFY

Estimate of amount of groundwater being used within the district on an annual basis – TWC §36.1071(e)(3)(B) and 31 TAC 356.52(a)(5)(B)

Please refer to Appendix A.

Estimate of annual amount of recharge from precipitation to the groundwater resources within the district – TWC §36.1071(e)(3)(C) and 31 TAC 356.52(a)(5)(C)

Please refer to Appendix B.

Estimate for each aquifer, annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers – TWC §36.1071(e)(3)(D) and 31 TAC 356.52(a)(5)(D)

Please refer to Appendix B.

Estimate of annual volume of flow into and out of the district within each aquifer and between aquifers in the district – TWC §36.1071(e)(3)(E) and 31 TAC 356.52(a)(5)(E)

Please refer to Appendix B.

Estimate of projected surface water supply in the district according to the most recently adopted state water plan – TWC §36.1071(e)(3)(F) and 31 TAC 356.52(a)(5)(F)

Please refer to Appendix A.

Estimate of projected total demand for water in the district according to the most recently adopted state water plan – TWC §36.1071(e)(3)(G) and 31 TAC 356.52(a)(5)(G)

Please refer to Appendix A.

CONSIDER THE WATER SUPPLY NEEDS AND WATER MANAGEMENT STRATEGIES INCLUDED IN THE ADOPTED STATE WATER PLAN – TWC §36.1071(e)(4)

Please refer to Appendix A.

DETAILS ON THE DISTRICT MANAGEMENT OF GROUNDWATER

The Texas Legislature established that groundwater conservation districts are the preferred method of groundwater management in TWC §36.0015. The DISTRICT will manage the use of groundwater within Jackson County in order to protect, preserve, conserve, and prevent waste of the resource while seeking to maintain the economic viability of all resource user groups, public and private. The DISTRICT seeks to manage the groundwater resources of Jackson County as practicably as possible as established in the plan. In consideration of the economic and cultural activities occurring within Jackson County, the DISTRICT will identify and engage in such activities and practices, that if implemented may result in the reasonable and effective protection, preservation, conservation, waste prevention of groundwater in Jackson County. The DISTRICT will manage groundwater resources through rules developed and implemented in accordance with Chapter 36 of the Texas Water Code and the provisions of the DISTRICT's enabling legislation.

For the purposes of this management plan, the following definitions are used:

- Protection of groundwater is the activity and practice of seeking to prevent harm or injury to a groundwater resource.
- Preservation of groundwater is the activity and practice of seeking to extend the useful longevity or life of a groundwater resource.
- Conservation of groundwater is 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.
- Waste prevention of groundwater is the activity and practices seeking to prevent the use of groundwater in any manner defined as waste in Section 36.001 of the Texas Water Code.

An observation well network will be established and maintained by the DISTRICT in order to monitor changing water levels and water quality of groundwater supplies within Jackson County. When a monitoring well network has been established, the DISTRICT will make a regular assessment of water supply and groundwater storage conditions, water quality conditions and will report those conditions to the Texana Groundwater Conservation District Board of Directors and to the public. The DISTRICT may undertake, as necessary, investigations of the groundwater resources within Jackson County and will make the results of investigations available to the public. The DISTRICT will co-operate with investigations of the groundwater resources of Jackson County undertaken by other local political subdivisions or agencies of the State of Texas.

In order to better manage groundwater resources the DISTRICT may establish management zones for; and adopt different rules for:

1. Each aquifer, subdivision of an aquifer, or geologic strata located in whole or in part within Jackson County; or
2. Each geographic area overlying an aquifer or subdivision of an aquifer located in

whole or in part within Jackson County.

For the purpose of managing the use of groundwater within Jackson County, the DISTRICT may define sustainable use as the use of an amount of groundwater in Jackson County as a whole or any management zone established by the DISTRICT that does not exceed any of the following conditions:

1. The long-term average historical groundwater production from aquifers in Jackson County established by the DISTRICT prior to the establishment of the desired future condition of aquifers in a groundwater management area in which the DISTRICT is located; or
2. The desired future conditions of aquifers in Jackson County established by a groundwater management area in which the DISTRICT is located; or
3. The amount of modeled available groundwater resulting from the establishment of a desired future aquifer condition by the DISTRICT or a groundwater management area in which the DISTRICT is located; or
4. The estimated long-term average historical amount of annual recharge of the aquifer or aquifer subdivision in which the use occurs as recognized by the DISTRICT; or
5. Any other criteria established by the DISTRICT as being a threshold of use beyond which further use of the aquifer or aquifer subdivision may result in a specified undesirable or injurious condition.

The DISTRICT may adopt rules that protect historic use of groundwater in Jackson County to the maximum extent practical and consistent with this plan and the goals and objectives set forth herein. The DISTRICT may impose more restrictive conditions on non-historic-use permits and non-historic-use permit amendments to increase use by historic users if the limitations:

1. Apply to all non-historic-use permits and non-historic-use permit amendments to increase use by historic users, regardless of the type or location of use;
2. Bear a reasonable relationship to the DISTRICT's management plan; and
3. Are reasonably necessary to protect historic use.

The DISTRICT may adopt rules to regulate groundwater withdrawals by means of spacing and/or production limits. The relevant factors to be considered in making a determination to grant or deny a permit or limit groundwater withdrawals shall include those set forth in the DISTRICT enabling Legislation, Chapter 36 of the Texas Water Code, and the rules of the District. The District may employ technical resources at its disposal, as needed, to evaluate the groundwater resources available within Jackson County and to determine the effectiveness of regulatory or conservation measures. In consideration of particular individual, localized or District-wide conditions, including without limitation climatic conditions, the DISTRICT may, by rule, allow an increase or impose a decrease in the total production in a management zone above or below the sustainable amount for a period of time considered necessary by the DISTRICT in order to accomplish the purposes set forth in Chapter 36 of the Texas Water Code, or the DISTRICT's enabling legislation. The exercise of said discretion by the Texana Groundwater Conservation District Board of Directors shall not be construed as limiting

the power of the Texana Groundwater Conservation District Board of Directors.

ACTIONS, PROCEDURES, PERFORMANCE AND AVOIDANCE FOR PLAN IMPLEMENTATION – TWC §36.1071(e)(2)

The DISTRICT will implement the provisions of this plan and will utilize the provisions of this plan as a guidepost for determining the direction or priority for all DISTRICT activities. All operations of the DISTRICT, all agreements entered into by the DISTRICT, and any additional planning efforts in which the DISTRICT may participate will be consistent with the provisions of this plan.

Rules adopted by the DISTRICT for the permitting of wells and the use of groundwater shall comply with Chapter 36 of the Texas Water Code, including §36.113 of the Texas Water Code, and the provisions of this management plan. All rules will be adhered to and enforced. The promulgation and enforcement of the rules will be based on the best technical evidence available to the DISTRICT.

The DISTRICT's rules are available at the following website address: www.texanagcd.org/policiesrules.html.

METHODOLOGY FOR TRACKING DISTRICT PROGRESS IN ACHIEVING MANAGEMENT GOALS – 31TAC 356.52(a)(4)

The staff of the DISTRICT will prepare and present an annual report to the Texana Groundwater Conservation Board of Directors regarding the DISTRICT's performance in achieving management goals and objectives for the fiscal year. The report will be presented within 120 days following the completion of the DISTRICT's fiscal year. The DISTRICT will maintain the report on file for public inspection at the District's offices upon adoption at a meeting of the Texana Groundwater Conservation Board of Directors.

GOALS, MANAGEMENT OBJECTIVES and PERFORMANCE STANDARDS

Providing the most efficient use of groundwater – TWC §36.1071(a)(1) and 31 TAC 356.52(a)(1)(A)

Objective: Develop and maintain a water well registration program for tracking well information for wells within Jackson County.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the changes related to water well registration including the number of non-grandfathered and grandfathered wells registered.

Objective: Develop and maintain a water well permitting program for processing and tracking all permits authorizing groundwater production.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the changes related to water well permitting including the number of new applications and the disposition of the applications.

Controlling and preventing waste of groundwater – TWC §36.1071(a)(2) and 31 TAC 356.52(a)(1)(B)

Objective: Develop and maintain a water well inspection program for non-exempt wells.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the findings of the inspection activities including information regarding the number of wells that require improvement to control or prevent waste of groundwater.

Controlling and preventing subsidence – TWC §36.1071(a)(3) and 31 TAC 356.52(a)(1)(C)

This category of management goal is not applicable to the DISTRICT at this time because no significant subsidence has occurred in Jackson County. The DISTRICT will monitor geological conditions for evidence of subsidence, particularly in high groundwater production areas near the coast and take appropriate action should subsidence develop.

Addressing conjunctive surface water management issues – TWC §36.1071(a)(4) and 31 TAC 356.52(a)(1)(D)

Objective: Participate in the regional water planning process by attending at least one Lavaca Regional Water Planning Group (Region P) meeting per year.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the representatives of the DISTRICT, dates, and the number of meetings of the Lavaca Regional Water Planning Group attended.

Addressing natural resource issues which impact the use and availability of groundwater, and which are impacted by the use of groundwater – TWC §36.1071(a)(5) and 31 TAC §356.52(a)(1)(E)

Objective: Develop and maintain a water quality monitoring program.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the monitoring activities including the number of wells monitored and the year-to-year change of water quality.

Addressing drought conditions – TWC §36.1071(a)(6) and 31 TAC 356.52(a)(1)(F)

Objective: Collect and review drought condition information related to Jackson County and the surrounding region of Texas.

Performance Standard: Each year, the District will summarize within the annual report the drought condition information collected and reviewed.

Addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective – TWC §36.1071(a)(7) and 31 TAC 356.52(a)(1)(G)

Objective: Promote conservation, rainwater harvesting or brush control within Jackson County.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the activities directly related to conservation, rainwater harvesting or brush control including participation in scientific investigations and studies, educational materials developed and delivered to local schools, cooperative educational contributions and grants, public speaking events and presentations, community event participation, and educational publications.

Recharge enhancement and precipitation enhancement are deemed to be not appropriate or cost-effective programs for the DISTRICT at this time because there are no existing recharge enhancement or precipitation enhancement programs operating in nearby counties in which the DISTRICT could participate and share costs. The costs of operating a single-county recharge enhancement or precipitation enhancement program are prohibitive and would require the DISTRICT to increase taxes. Therefore, these goals are not applicable to the DISTRICT at this time.

Addressing the desired future conditions adopted by the district under Section 36.108 – TWC §36.1071(a)(8) and 31 TAC 356.52(a)(1)(H)

Objective: Develop and maintain a water level monitoring program.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the water level monitoring activities including the number of wells monitored and the year-to-year change of water level.

Objective: Analyze water level monitoring information to evaluate water level trends and determine the degree to which the DISTRICT is complying with the desired future conditions of Gulf Coast Aquifer in Jackson County.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the water level trends and the conclusions regarding the DISTRICT's compliance with the desired future condition of the Gulf Coast Aquifer in Jackson County.

List of Appendices

Appendix A. Estimated Historical Water Use and 2012 State Water Plan Datasets provided by Texas Water Development Board

Appendix B. Groundwater Availability Model Run 14-012 provided by Texas Water Development Board

Appendix C. Groundwater Availability Model Run 10-028 MAG

Appendix D. Public Notices Regarding Hearings Related to Plan Adoption

Appendix E. Letters Coordinating with Regional Surface Water Management Entities

Appendix F. Texana Groundwater Conservation District Board of Director Resolution Adopting Management Plan

Appendix G. Minutes of Texana Groundwater Conservation District Board of Director Meeting related to the public hearings for and adoption of the Management Plan

Appendix H. Texana Groundwater Conservation District Contact Information

Appendix A. Estimated Historical Water Use and 2012 State Water Plan Datasets provided by Texas Water Development Board

Estimated Historical Water Use And 2012 State Water Plan Datasets:

Texana Groundwater Conservation District

by Stephen Allen
Texas Water Development Board
Groundwater Resources Division
Groundwater Technical Assistance Section
stephen.allen@twdb.texas.gov
(512) 463-7317
April 8, 2015

GROUNDWATER MANAGEMENT PLAN DATA:

This package of water data reports (part 1 of a 2-part package of information) is being provided to groundwater conservation districts to help them meet the requirements for approval of their five-year groundwater management plan. Each report in the package addresses a specific numbered requirement in the Texas Water Development Board's groundwater management plan checklist. The checklist can be viewed and downloaded from this web address:

http://www.twdb.texas.gov/groundwater/docs/GCD/GMPChecklist0113.pdf

The five reports included in part 1 are:

1. Estimated Historical Water Use (checklist Item 2)

   from the TWDB Historical Water Use Survey (WUS)

2. Projected Surface Water Supplies (checklist Item 6)
3. Projected Water Demands (checklist Item 7)
4. Projected Water Supply Needs (checklist Item 8)
5. Projected Water Management Strategies (checklist Item 9)

   reports 2-5 are from the 2012 Texas State Water Plan (SWP)

Part 2 of the 2-part package is the groundwater availability model (GAM) report. The District should have received, or will receive, this report from the Groundwater Availability Modeling Section. Questions about the GAM can be directed to Dr. Shirley Wade, shirley.wade@twdb.texas.gov, (512) 936-0883.

DISCLAIMER:

The data presented in this report represents the most up-to-date WUS and 2012 SWP data available as of 4/8/2015. Although it does not happen frequently, neither of these datasets are static so they are subject to change pending the availability of more accurate WUS data or an amendment to the 2012 SWP. District personnel must review these datasets and correct any discrepancies in order to ensure approval of their groundwater management plan.

The WUS dataset can be verified at this web address:

http://www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/

The 2012 SWP dataset can be verified by contacting Sabrina Anderson (sabrina.anderson@twdb.texas.gov or 512-936-0886).

For additional questions regarding this data, please contact Stephen Allen (stephen.allen@twdb.texas.gov or 512-463-7317) or Rima Petrossian (rima.petrossian@twdb.texas.gov or 512-936-2420).

Estimated Historical Water Use
TWDB Historical Water Use Survey (WUS) Data

Groundwater and surface water historical use estimates are currently unavailable for calendar year 2013. TWDB staff anticipates the calculation and posting of these estimates at a later date.

JACKSON COUNTY

All values are in acre-fee/year

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2012	GW	1,947	32	4	0	48,889	534	51,406
	SW	0	458	0	0	445	288	1,191
2011	GW	2,109	28	31	0	86,894	835	89,897
	SW	0	487	4	0	442	449	1,382
2010	GW	1,713	37	43	0	42,258	793	44,844
	SW	0	432	6	0	1,500	427	2,365
2009	GW	1,852	29	43	0	45,911	681	48,516
	SW	0	431	6	0	1,699	367	2,503
2008	GW	1,746	33	42	0	35,889	670	38,380
	SW	0	451	6	0	1,334	361	2,152
2007	GW	1,626	140	0	0	33,242	757	35,765
	SW	0	461	0	0	471	409	1,341
2006	GW	1,832	167	0	0	33,396	669	36,064
	SW	0	489	0	0	0	362	851
2005	GW	1,789	166	0	0	42,893	583	45,431
	SW	0	474	0	0	0	314	788
2004	GW	1,723	122	0	0	44,599	205	46,649
	SW	0	434	0	0	621	677	1,732
2003	GW	1,793	90	0	0	33,494	210	35,587
	SW	3	494	0	0	756	689	1,942
2002	GW	1,949	34	0	0	35,251	196	37,430
	SW	0	497	0	0	0	646	1,143
2001	GW	1,875	38	0	0	39,754	202	41,869
	SW	0	477	0	0	0	667	1,144
2000	GW	1,889	43	0	0	44,236	511	46,679
	SW	0	518	0	0	120	341	979

Projected Surface Water Supplies
TWDB 2012 State Water Plan Data

JACKSON COUNTY

All values are in acre-feet/year

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
P	MANUFACTURING	COLORADO-LAVACA	TEXANA LAKE/RESERVOIR	1,832	1,832	1,832	1,832	1,832	1,832
	Sum of Projected Surface Water Supplies (acre-feet/year)			**1,832**	**1,832**	**1,832**	**1,832**	**1,832**	**1,832**

Projected Water Demands
TWDB 2012 State Water Plan Data

Please note that the demand numbers presented here include the plumbing code savings found in the Regional and State Water Plans.

JACKSON COUNTY

All values are in acre-feet/year

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
P	COUNTY-OTHER	COLORADO-LAVACA	266	275	277	274	273	273
P	MANUFACTURING	COLORADO-LAVACA	641	668	688	706	722	768
P	MINING	COLORADO-LAVACA	25	27	28	29	30	30
P	IRRIGATION	COLORADO-LAVACA	22,066	22,066	22,066	22,066	22,066	22,066
P	LIVESTOCK	COLORADO-LAVACA	298	298	298	298	298	298
P	MANUFACTURING	LAVACA	2	2	2	3	3	3
P	MINING	LAVACA	38	40	41	43	44	45
P	IRRIGATION	LAVACA	28,645	28,645	28,645	28,645	28,645	28,645
P	LIVESTOCK	LAVACA	418	418	418	418	418	418
P	EDNA	LAVACA	816	850	861	856	855	855
P	GANADO	LAVACA	259	272	277	276	276	276
P	COUNTY-OTHER	LAVACA	478	495	498	493	491	492
P	IRRIGATION	LAVACA-GUADALUPE	9,090	9,090	9,090	9,090	9,090	9,090
P	LIVESTOCK	LAVACA-GUADALUPE	136	136	136	136	136	136
P	COUNTY-OTHER	LAVACA-GUADALUPE	59	61	61	61	60	60
P	MINING	LAVACA-GUADALUPE	63	66	69	71	74	76
	Sum of Projected Water Demands (acre-feet/year)		**63,300**	**63,409**	**63,455**	**63,465**	**63,481**	**63,531**

Projected Water Supply Needs
TWDB 2012 State Water Plan Data

Negative values (in red) reflect a projected water supply need, positive values a surplus.

JACKSON COUNTY

All values are in acre-feet/year

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
P	COUNTY-OTHER	COLORADO-LAVACA	11	2	0	3	4	4
P	COUNTY-OTHER	LAVACA	20	3	0	5	7	6
P	COUNTY-OTHER	LAVACA-GUADALUPE	2	0	0	0	1	1
P	EDNA	LAVACA	45	11	0	5	6	6
P	GANADO	LAVACA	18	5	0	1	1	1
P	IRRIGATION	COLORADO-LAVACA	-5,053	-5,053	-5,053	-5,053	-5,053	-5,053
P	IRRIGATION	LAVACA	0	0	0	0	0	0
P	IRRIGATION	LAVACA-GUADALUPE	0	0	0	0	0	0
P	LIVESTOCK	COLORADO-LAVACA	0	0	0	0	0	0
P	LIVESTOCK	LAVACA	0	0	0	0	0	0
P	LIVESTOCK	LAVACA-GUADALUPE	0	0	0	0	0	0
P	MANUFACTURING	COLORADO-LAVACA	1,191	1,164	1,144	1,126	1,110	1,064
P	MANUFACTURING	LAVACA	1	1	1	0	0	0
P	MINING	COLORADO-LAVACA	5	3	2	1	0	0
P	MINING	LAVACA	7	5	4	2	1	0
P	MINING	LAVACA-GUADALUPE	13	10	7	5	2	0
	Sum of Projected Water Supply Needs (acre-feet/year)		**-5,053**	**-5,053**	**-5,053**	**-5,053**	**-5,053**	**-5,053**

Projected Water Management Strategies
TWDB 2012 State Water Plan Data

JACKSON COUNTY

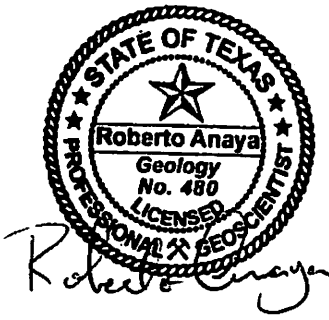
WUG, Basin (RWPG) All values are in acre-feet/year

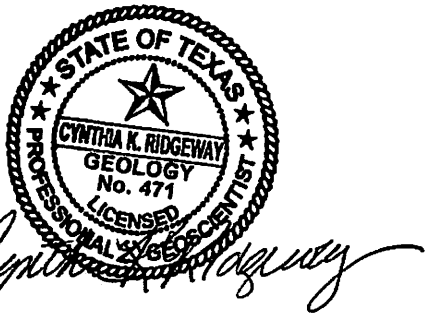
Water Management Strategy	Source Name [Origin]	2010	2020	2030	2040	2050	2060
IRRIGATION, COLORADO-LAVACA (P)							
CONJUNCTIVE USE OF GROUNDWATER (TEMPORARY OVERDRAFT) - JACKSON COUNTY	GULF COAST AQUIFER [JACKSON]	5,053	5,053	5,053	5,054	5,053	5,053
Sum of Projected Water Management Strategies (acre-feet/year)		**5,053**	**5,053**	**5,053**	**5,054**	**5,053**	**5,053**

Appendix B. Groundwater Availability Model Run 14-012 provided by Texas Water Development Board

GAM RUN 14-012: TEXANA GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN

by Bernard Bahaya, E.I.T, and Roberto Anaya, P.G.
Texas Water Development Board
Groundwater Resources Division
Groundwater Availability Modeling Section
(512) 463-6115
July 12, 2015





Cynthia K. Ridgeway is the Manager of the Groundwater Availability Modeling Section and is responsible for oversight of work performed by Bernard Bahaya under her direct supervision. The seal appearing on this document was authorized by Cynthia K. Ridgeway, P.G. 471 on July 12, 2015.

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GAM RUN 14-012: TEXANA GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN

by Bernard Bahaya, E.I.T, and Roberto Anaya, P.G.
Texas Water Development Board
Groundwater Resources Division
Groundwater Availability Modeling Section
(512) 463-6115
July 12, 2015

EXECUTIVE SUMMARY:

Texas State Water Code, Section 36.1071, Subsection (h) (Texas Water Code, 2011), states that, in developing its groundwater management plan, a groundwater conservation district shall use groundwater availability modeling information provided by the executive administrator of the Texas Water Development Board (TWDB) in conjunction with any available site-specific information provided by the district for review and comment to the executive administrator. Information derived from groundwater availability models that shall be included in the groundwater management plan includes:

- the annual amount of recharge from precipitation to the groundwater resources within the district, if any;
- for each aquifer within the district, the annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers; and
- the annual volume of flow into and out of the district within each aquifer and between aquifers in the district.

This report—Part 2 of a two-part package of information from the TWDB to the Texana Groundwater Conservation District—fulfills the requirements noted above. Part 1 of the two-part package is the Estimated Historical Water Use/State Water Plan data report. The District will receive this data report from the TWDB Groundwater Technical Assistance Section. Questions about the data report can be directed to Mr. Stephen Allen, stephen.allen@twdb.texas.gov, (512) 463-7317.

The groundwater management plan for the Texana Groundwater Conservation District should be adopted by the district on or before November 27, 2015 and submitted to the executive administrator of the TWDB on or before December 27, 2015. The current management plan for the Texana Groundwater Conservation District expires on February 25, 2016.

This report discusses the methods, assumptions, and results from a model run using the groundwater availability model for the central portion of the Gulf Coast Aquifer System (Chowdhury and others, 2004 and Waterstone and Parsons, 2003). This model run replaces the results of GAM Run 08-82 (Oliver, 2009). GAM Run 14-012 meets current standards set after the release of GAM Run 08-82. Table 1 summarizes the groundwater availability model data required by statute, and figure 1 shows the area of the model from which the values in the table were extracted. If after review of the figure, the Texana Groundwater Conservation District determines that the district boundaries used in the assessment do not reflect current conditions, please notify the TWDB at your earliest convenience.

METHODS:

In accordance with the provisions of the Texas State Water Code, Section 36.1071, Subsection (h), the groundwater availability model for the Gulf Coast (Central) Aquifer System (Chowdhury and others, 2004 and Waterstone and Parsons, 2003), was run for this analysis. Texana Groundwater Conservation District water budgets were extracted for the historical model period (1981 through 1999 using ZONEBUDGET Version 3.01 (Harbaugh, 2009). The average annual water budget values for recharge, surface water outflow, inflow to the district, outflow from the district, net inter-aquifer flow (upper), and net inter-aquifer flow (lower) for the portion of the aquifer located within the district is summarized in this report.

PARAMETERS AND ASSUMPTIONS:

- Version 1.01 of the groundwater availability model for the central portion of the Gulf Coast Aquifer System was used for this analysis. See Chowdhury and others (2004) and Waterstone and Parsons (2003) for assumptions and limitations of the groundwater availability model.
- This groundwater availability model includes four layers, which generally represent the Chicot Aquifer (Layer 1), the Evangeline Aquifer (Layer 2), the Burkeville Confining Unit (Layer 3), and the Jasper Aquifer (Layer 4). The down-dip boundary of the model is based on contours of 10,000 parts per million of total dissolved solids (Waterstone and Parsons, 2003). Consequently, the model includes zones of brackish groundwater.
- The model for the central portion of the Gulf Coast Aquifer System assumes that wells screened in the Evangeline Aquifer do not penetrate the full thickness of the aquifer near the Gulf of Mexico. This means the areas where wells are drilled into the Evangeline Aquifer are represented using data from the shallow portions of the aquifer, such as the outcrop or just below the Chicot Aquifer closer to the Gulf of Mexico. Lower portions of the aquifer near the Gulf of Mexico are not accessible with existing wells so deeper wells will be needed to understand the aquifer properties over the entire thickness of the aquifer.
- The model was run with MODFLOW-96 (Harbaugh and McDonald, 1996).

RESULTS:

A groundwater budget summarizes the amount of water entering and leaving the aquifer according to the groundwater availability model. Selected groundwater budget components listed below were extracted from the model results for the aquifer located within the district and averaged over the duration of the calibration and verification portion of the model run in the district, as shown in table 1.

- Precipitation recharge—The areally distributed recharge sourced from precipitation falling on the outcrop areas of the aquifers (where the aquifer is exposed at land surface) within the district.
- Surface water outflow—The total water discharging from the aquifer (outflow) to surface water features such as streams, reservoirs, springs.

- Flow into and out of district—The lateral flow within the aquifer between the district and adjacent counties.

- Flow between aquifers—The net vertical flow between the aquifer and adjacent aquifers or confining units. This flow is controlled by the relative water levels in each aquifer or confining unit and aquifer properties of each aquifer or confining unit that define the amount of leakage that occurs. "Inflow" to an aquifer from an overlying or underlying aquifer will always equal the "Outflow" from the other aquifer.

It is important to note that water budgets are not exact. This is due to the size of the model cells and the approach used to extract data from the model. To avoid double accounting, a model cell that straddles a political boundary, such as a district or county boundary, is assigned to one side of the boundary based on the location of the centroid of the model cell. For example, if a cell contains two counties, the cell is assigned to the county where the centroid of the cell is located.

TABLE 1 SUMMARIZED INFORMATION FOR THE GULF COAST AQUIFER SYSTEM THAT IS NEEDED FOR THE TEXANA GROUNDWATER CONSERVATION DISTRICT'S GROUNDWATER MANAGEMENT PLAN. ALL VALUES ARE REPORTED IN ACRE-FEET PER YEAR AND ROUNDED TO THE NEAREST 1 ACRE-FOOT.

Management Plan requirement	*Aquifer or confining unit*	*Results*
Estimated annual amount of recharge from precipitation to the district	Gulf Coast Aquifer System	10,942
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, rivers, wetlands, bays, and estuaries	Gulf Coast Aquifer System	16,605
Estimated annual volume of flow into the district within each aquifer in the district	Gulf Coast Aquifer System	38,915
Estimated annual volume of flow out of the district within each aquifer in the district	Gulf Coast Aquifer System	19,812
Estimated net annual volume of flow between each aquifer in the district	From Gulf Coast Aquifer System to Underlying Units	Not Applicable*

*Not applicable because flow leaving the Gulf Coast Aquifer System to the underlying brackish portion of the Yegua-Jackson Aquifer is not known. The model also assumes a no flow barrier at the base of the Gulf Coast Aquifer System.

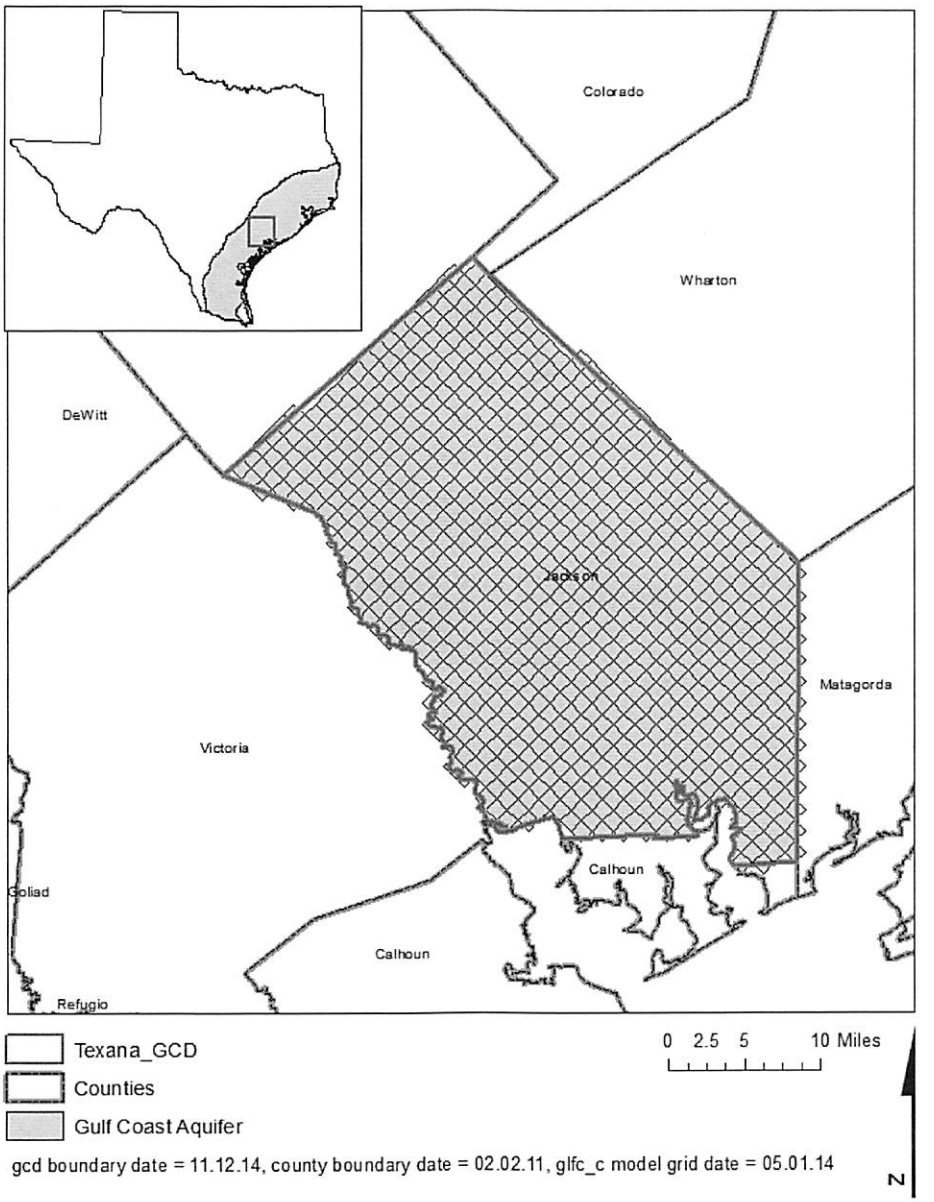

FIGURE 1 AREA OF THE GROUNDWATER AVAILABILITY MODEL FOR THE CENTRAL PORTION OF THE GULF COAST AQUIFER SYSTEM FROM WHICH THE INFORMATION IN TABLE 1 WAS EXTRACTED (THE GULF COAST AQUIFER SYSTEM EXTENT WITHIN THE DISTRICT BOUNDARY).

LIMITATIONS:

The groundwater model(s) used in completing this analysis is the best available scientific tool that can be used to meet the stated objective(s). To the extent that this analysis will be used for planning purposes and/or regulatory purposes related to pumping in the past and into the future, it is important to recognize the assumptions and limitations associated with the use of the results. 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."*

A key aspect of using the groundwater model to evaluate historic groundwater flow conditions includes the assumptions about the location in the aquifer where historic pumping was placed. Understanding the amount and location of historic pumping is as important as evaluating the volume of groundwater flow into and out of the district, between aquifers within the district (as applicable), interactions with surface water (as applicable), recharge to the aquifer system (as applicable), and other metrics that describe the impacts of that pumping. In addition, assumptions regarding precipitation, recharge, and interaction with streams are specific to particular historic time periods.

Because the application of the groundwater models was designed to address regional scale questions, the results are most effective on a regional scale. The TWDB makes no warranties or representations related to the actual conditions of any aquifer at a particular location or at a particular time.

It is important for groundwater conservation districts to monitor groundwater pumping and overall conditions of the aquifer. Because of the limitations of the groundwater model and the assumptions in this analysis, it is important that the groundwater conservation districts work with the TWDB to refine this analysis in the future given the reality of how the aquifer responds to the actual amount and location of pumping now and in the future. Historic precipitation patterns also need to be placed in context as future climatic conditions, such as dry and wet year precipitation patterns, may differ and affect groundwater flow conditions.

REFERENCES:

Chowdhury, A.H., Wade, S., Mace, R.E., and Ridgeway, C., 2004, Groundwater Availability Model of the Central Gulf Coast Aquifer System: Numerical Simulations through 1999- Model Report, 114 p
http://www.twdb.texas.gov/groundwater/models/gam/glfc_c/TWDB_Recalibration_Report.pdf

Harbaugh, A. W., 2009, Zonebudget Version 3.01, A computer program for computing subregional water budgets for MODFLOW ground-water flow models, U.S. Geological Survey Groundwater Software.
http://water.usgs.gov/nrp/gwsoftware/zonebud3/zonebudget3.html

Harbaugh, A. W., and McDonald, M. G., 1996, User's documentation for MODFLOW-96, an update to the U.S. Geological Survey modular finite-difference groundwater-water flow model: U.S. Geological Survey Open-File Report 96-485, 56 p.
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http://www.nap.edu/catalog.php?record_id=11972.

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Texas Water Code, 2011,
http://www.statutes.legis.state.tx.us/docs/WA/pdf/WA.36.pdf

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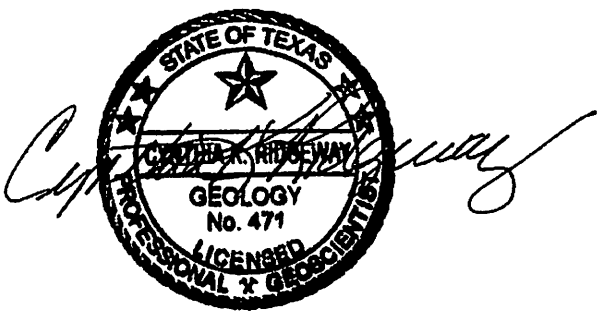
Appendix C. Groundwater Availability Model Run 10-028 MAG

GAM Run 10-028 MAG

by Melissa E. Hill, Ph.D., P.G. and Wade Oliver

Edited and finalized by Shirley Wade to reflect statutory changes effective September 1, 2011

Texas Water Development Board
Groundwater Availability Modeling Section
(512) 936-0883
November 18, 2011



Cynthia K. Ridgeway, the Manager of the Groundwater Availability Modeling Section and Interim Director of the Groundwater Resources Division, is responsible for oversight of work performed by employees under her direct supervision. The seal appearing on this document was authorized by Cynthia K. Ridgeway, P.G. 471 on November 18, 2011.

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EXECUTIVE SUMMARY:

The modeled available groundwater for the Gulf Coast Aquifer as a result of the desired future conditions adopted by the members of Groundwater Management Area 15 is approximately 488,000 acre-feet per year. This is shown divided by county, regional water planning area, and river basin in Table 1 for use in the regional water planning process. Modeled available groundwater is summarized by county, regional water planning area, river basin, and groundwater conservation district in tables 2 through 5. The estimates were extracted from the simulation documented in Table 7 of Groundwater Availability Model Run 10-008 Addendum, which meets the desired future conditions adopted by Groundwater Management Area 15.

REQUESTOR:

Mr. Neil Hudgins of the Coastal Bend Groundwater Conservation District on behalf of Groundwater Management Area 15

DESCRIPTION OF REQUEST:

In a letter dated July 15th, 2010 and received July 30th, 2010, Mr. Neil Hudgins provided the Texas Water Development Board (TWDB) with the desired future condition (DFC) of the Gulf Coast Aquifer for Groundwater Management Area 15. The desired future condition for the Gulf Coast Aquifer, as described in Resolution 2010-01 and adopted July 14, 2010 by the groundwater conservation districts (GCDs) within Groundwater Management Area 15, are described below:

> *An average drawdown of the Gulf Coast Aquifer within the* [Groundwater Management Area] *15 boundary of 12 feet relative to year 1999 starting conditions in accordance with Table 7* of [Groundwater Availability Model] *Run 10-008 Addendum.*

In response to receiving the adopted future condition, the Texas Water Development Board estimated the modeled available groundwater for each groundwater conservation district within Groundwater Management Area 15.

METHODS:

Groundwater Management Area 15 lies within the domain of the groundwater availability model for the central portion of the Gulf Coast Aquifer in Texas. The location of Groundwater Management Area 15, the Gulf Coast Aquifer, and the groundwater availability model cells that represent the aquifer are shown in Figure 1. The Gulf Coast Aquifer System is comprised of the Chicot, Evangeline, and Jasper aquifers. The Burkeville Confining Unit lies between the Evangeline and Jasper aquifers (Waterstone Engineering Inc. and others, 2003).
The previously completed Groundwater Availability Model (GAM) Run 10-008 (Hutchison, 2010), its addendum GAM Run 10-008 Addendum (Wade, 2010), GAM Run 09-010 (Anaya, 2010), GAM Run 08-56 (Anaya, 2009), GAM Run 07-43 (Donnelly, 2008b), and GAM Run 07-42 (Donnelly, 2008a) document the model results reviewed by members of Groundwater Management Area 15 when developing the desired future condition. The results presented in this

report are based on the model simulation shown as the "12 foot scenario" shown in Table 7 of GAM Run 10-008 Addendum (Wade, 2010).

PARAMETERS AND ASSUMPTIONS:

The parameters and assumptions for the model run using the groundwater availability model for the central portion of the Gulf Coast Aquifer are described below:

- Version 1.01 of the groundwater availability model for the central portion of the Gulf Coast Aquifer was used for this analysis. See Chowdhury and others (2004) and Waterstone Engineering Inc. and others (2003) for assumptions and limitations of the groundwater availability model.
- The model includes four layers representing: the Chicot Aquifer and shallow surface alluvial deposits (layer 1), the Evangeline Aquifer (layer 2), the Burkeville Confining Unit (layer 3), and the Jasper Aquifer including portions of the Catahoula Formation (layer 4) as described in Waterstone Engineering Inc. and others (2003).
- The mean absolute error (a measure of the difference between simulated and measured water levels during model calibration) in the entire model for 1999 is 26 feet, which is 4.8 percent of the hydraulic head drop across the model area (Chowdhury and others, 2004).
- The recharge, evapotranspiration, and streamflows for the model run represent average conditions between 1981 and 1999 in the historical-calibration period of the model (Chowdhury and others, 2004).
- See Wade (2010) for a full description of the methods, assumptions, and results of the groundwater availability model run.

Modeled Available Groundwater and Permitting

As defined in Chapter 36 of the Texas Water Code, "modeled available groundwater" is the estimated average amount of water that may be produced annually to achieve a desired future condition. This is distinct from "managed available groundwater," shown in the draft version of this report dated November 10, 2010, which was a permitting value and accounted for the estimated use of the aquifer exempt from permitting. This change was made to reflect changes in statute by the 82nd Texas Legislature, effective September 1, 2011.

Groundwater conservation districts are required to consider modeled available groundwater, along with several other factors, when issuing permits in order to manage groundwater production to achieve the desired future condition(s). The other factors districts must consider include annual precipitation and production patterns, the estimated amount of pumping exempt from permitting, existing permits, and a reasonable estimate of actual groundwater production under existing permits. The estimated amount of pumping exempt from permitting, which the

Texas Water Development Board is now required to develop after soliciting input from applicable groundwater conservation districts, will be provided in a separate report

RESULTS:

The modeled available groundwater for the Gulf Coast Aquifer in Groundwater Management Area 15 consistent with the desired future conditions is approximately 488,000 acre-feet per year. This has been divided by county, regional water planning area, and river basin for each decade between 2010 and 2060 for use in the regional water planning process (Table 1).

The modeled available groundwater is also summarized by county (Table 2), regional water planning area (Table 3), river basin (Table 4), and groundwater conservation district (Table 5). Note that some small differences exist between the results shown in Table 2 of this report and Table 7 of Wade (2010) due to a re-assignment of grid cells to be more consistent with previous and known interpretations of political boundaries. The most significant of these adjustments is in Fayette County, where 339 acre-feet per year of pumping from the Gulf Coast Aquifer was previously reported as existing in Groundwater Management Area 12 (Wade, 2010). Since the groundwater management area boundary was originally delineated along the Gulf Coast Aquifer boundary in this area, this pumping is now associated with Groundwater Management Area 15.

In Table 5, the modeled available groundwater among all districts has been calculated both excluding and including areas outside the jurisdiction of a groundwater conservation district. Though a small portion of Corpus Christi Aquifer Storage and Recovery Conservation District falls within Groundwater Management Area 15, results are not shown for this area below because no model cells representing the Gulf Coast Aquifer fall within the district.

LIMITATIONS:

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."

A key aspect of using the groundwater model to develop estimates of modeled available groundwater is the need to make assumptions about the location in the aquifer where future pumping will occur. As actual pumping changes in the future, it will be necessary to evaluate the amount of that pumping as well as its location in the context of the assumptions associated with

this analysis. Evaluating the amount and location of future pumping is as important as evaluating the changes in groundwater levels, spring flows, and other metrics that describe the condition of the groundwater resources in the area that relate to the adopted desired future condition(s).

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.

It is important for groundwater conservation districts to monitor future groundwater pumping as well as whether or not they are achieving their desired future conditions. Because of the limitations of the model and the assumptions in this analysis, it is important that the groundwater conservation districts work with the TWDB to refine the modeled available groundwater numbers given the reality of how the aquifer responds to the actual amount and location of pumping now and in the future.

REFERENCES:

Anaya, R., 2009, GAM Run 08-56: Texas Water Development Board GAM Run 08-56 Report, 63 p.

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Hutchison, W.R., 2010, GAM Run 10-008: Texas Water Development Board GAM Run 10-008 Report, 9 p.

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Waterstone Engineering, Inc., and Parsons, Inc., 2003, Groundwater availability of the central Gulf Coast Aquifer: numerical simulations to 2050 Central Gulf Coast, Texas-Final Report: contract report to the Texas Water Development Board, variously p.

Table 1. Modeled available groundwater for the Gulf Coast Aquifer in Groundwater Management Area 15. Results are in acre-feet per year and are summarized by county, regional water planning area, and river basin.

County	Regional Water Planning Area	Basin	Year					
			2010	2020	2030	2040	2050	2060
Aransas	N	San Antonio-Nueces	1,862	1,862	1,862	1,862	1,862	1,862
Bee	N	Nueces	30	30	30	30	30	30
		San Antonio-Nueces	9,484	9,484	9,460	9,460	9,408	9,408
Calhoun	L	Colorado-Lavaca	361	361	361	361	361	361
		Guadalupe	17	17	17	17	17	17
		Lavaca	2	2	2	2	2	2
		Lavaca-Guadalupe	2,574	2,574	2,574	2,574	2,574	2,574
		San Antonio-Nueces	41	41	41	41	41	41
Colorado	K	Brazos-Colorado	10,464	10,464	10,464	10,464	10,464	10,464
		Colorado	16,058	16,058	16,058	16,058	16,058	16,058
		Lavaca	22,431	22,431	22,431	22,431	22,431	22,431
Dewitt	L	Guadalupe	10,613	10,548	10,548	10,548	10,548	10,548
		Lavaca	2,932	2,932	2,926	2,915	2,912	2,912
		Lavaca-Guadalupe	417	417	417	417	417	417
		San Antonio	739	739	739	739	739	739
Fayette	K	Brazos	17	17	17	17	17	17
		Colorado	6,254	6,123	5,961	5,956	5,952	5,924
		Lavaca	2,933	2,933	2,927	2,922	2,917	2,915
Goliad	L	Guadalupe	4,417	4,417	4,417	4,417	4,417	4,417
		San Antonio	6,121	6,121	6,121	6,121	6,121	6,121
		San Antonio-Nueces	1,161	1,161	1,161	1,161	1,161	1,161
Jackson	P	Colorado-Lavaca	23,615	23,615	23,615	23,615	23,615	23,615
		Lavaca	41,927	41,927	41,927	41,927	41,927	41,927
		Lavaca-Guadalupe	10,844	10,844	10,844	10,844	10,844	10,844
Karnes	L	Guadalupe	12	12	12	12	12	12
		Nueces	78	78	78	78	78	78
		San Antonio	3,069	3,061	3,056	3,052	3,048	2,944
		San Antonio-Nueces	84	84	84	84	84	82
Lavaca	P	Guadalupe	41	41	41	41	41	41
		Lavaca	19,944	19,944	19,944	19,944	19,937	19,932
		Lavaca-Guadalupe	400	400	400	400	400	400
Matagorda	K	Brazos-Colorado	23,055	23,055	23,055	23,055	23,055	23,055
		Colorado	4,179	4,179	4,179	4,179	4,179	4,179
		Colorado-Lavaca	18,662	18,662	18,662	18,662	18,662	18,662
Refugio	L	San Antonio	1,522	1,522	1,522	1,522	1,522	1,522
		San Antonio-Nueces	27,806	27,806	27,806	27,806	27,806	27,806

Table 1. Continued.

County	Regional Water Planning Area	Basin	Year					
			2010	2020	2030	2040	2050	2060
Victoria	L	Guadalupe	14,617	14,617	14,617	14,617	14,617	14,617
		Lavaca	217	217	217	217	217	217
		Lavaca-Guadalupe	19,924	19,924	19,924	19,924	19,924	19,924
		San Antonio	936	936	936	936	936	936
Wharton	K	Brazos-Colorado	34,020	34,020	34,020	34,020	34,020	34,020
		Colorado	31,406	31,406	31,406	31,406	31,406	31,406
		Colorado-Lavaca	11,624	11,624	11,624	11,624	11,624	11,624
		Lavaca	1,690	1,690	1,690	1,690	1,690	1,690
	P	Colorado	441	441	441	441	441	441
		Colorado-Lavaca	11,549	11,549	11,549	11,549	11,549	11,549
		Lavaca	87,763	87,763	87,763	87,763	87,763	87,763
Total			**488,353**	**488,149**	**487,946**	**487,921**	**487,846**	**487,705**

Table 2. Modeled available groundwater for the Gulf Coast Aquifer summarized by county in Groundwater Management Area 15. Results are in acre-feet per year.

County	Year					
	2010	2020	2030	2040	2050	2060
Aransas	1,862	1,862	1,862	1,862	1,862	1,862
Bee	9,514	9,514	9,490	9,490	9,438	9,438
Calhoun	2,995	2,995	2,995	2,995	2,995	2,995
Colorado	48,953	48,953	48,953	48,953	48,953	48,953
Dewitt	14,701	14,636	14,630	14,619	14,616	14,616
Fayette	9,204	9,073	8,905	8,895	8,886	8,856
Goliad	11,699	11,699	11,699	11,699	11,699	11,699
Jackson	76,386	76,386	76,386	76,386	76,386	76,386
Karnes	3,243	3,235	3,230	3,226	3,222	3,116
Lavaca	20,385	20,385	20,385	20,385	20,378	20,373
Matagorda	45,896	45,896	45,896	45,896	45,896	45,896
Refugio	29,328	29,328	29,328	29,328	29,328	29,328
Victoria	35,694	35,694	35,694	35,694	35,694	35,694
Wharton	178,493	178,493	178,493	178,493	178,493	178,493
Total	**488,353**	**488,149**	**487,946**	**487,921**	**487,846**	**487,705**

Table 3. Modeled available groundwater for the Gulf Coast Aquifer summarized by regional water planning area in Groundwater Management Area 15. Results are in acre-feet per year.

Regional Water Planning Area	Year					
	2010	2020	2030	2040	2050	2060
K	182,793	182,662	182,494	182,484	182,475	182,445
L	97,660	97,587	97,576	97,561	97,554	97,448
N	11,376	11,376	11,352	11,352	11,300	11,300
P	196,524	196,524	196,524	196,524	196,517	196,512
Total	**488,353**	**488,149**	**487,946**	**487,921**	**487,846**	**487,705**

Table 4. Modeled available groundwater for the Gulf Coast Aquifer summarized by river basin in Groundwater Management Area 15. Results are in acre-feet per year.

Basin	Year					
	2010	2020	2030	2040	2050	2060
Brazos	17	17	17	17	17	17
Brazos-Colorado	67,539	67,539	67,539	67,539	67,539	67,539
Colorado	58,338	58,207	58,045	58,040	58,036	58,008
Colorado-Lavaca	65,811	65,811	65,811	65,811	65,811	65,811
Guadalupe	29,717	29,652	29,652	29,652	29,652	29,652
Lavaca	179,839	179,839	179,827	179,811	179,796	179,789
Lavaca-Guadalupe	34,159	34,159	34,159	34,159	34,159	34,159
Nueces	108	108	108	108	108	108
San Antonio	12,387	12,379	12,374	12,370	12,366	12,262
San Antonio-Nueces	40,438	40,438	40,414	40,414	40,362	40,360
Total	**488,353**	**488,149**	**487,946**	**487,921**	**487,846**	**487,705**

Table 5. Modeled available groundwater for the Gulf Coast Aquifer summarized by groundwater conservation district (GCD) in Groundwater Management Area 15. Results are in acre-feet per year. UWCD refers to Underground Water Conservation District.

Goundwater Conservation District	Year					
	2010	2020	2030	2040	2050	2060
Bee GCD	9,504	9,504	9,480	9,480	9,428	9,428
Calhoun County GCD*	2,995	2,995	2,995	2,995	2,995	2,995
Coastal Bend GCD	178,493	178,493	178,493	178,493	178,493	178,493
Coastal Plains GCD	45,896	45,896	45,896	45,896	45,896	45,896
Colorado County GCD	48,953	48,953	48,953	48,953	48,953	48,953
Evergreen UWCD	3,243	3,235	3,230	3,226	3,222	3,116
Fayette County GCD	9,204	9,073	8,905	8,895	8,886	8,856
Goliad County GCD	11,699	11,699	11,699	11,699	11,699	11,699
Lavaca County GCD*	20,385	20,385	20,385	20,385	20,378	20,373
Pecan Valley GCD	14,701	14,636	14,630	14,619	14,616	14,616
Refugio GCD	29,328	29,328	29,328	29,328	29,328	29,328
Texana GCD	76,386	76,386	76,386	76,386	76,386	76,386
Victoria County GCD	35,694	35,694	35,694	35,694	35,694	35,694
Total (excluding non-district areas)	**483,486**	**483,282**	**483,079**	**483,054**	**482,979**	**482,838**
No District	1,872	1,872	1,872	1,872	1,872	1,872
Total (including non-district areas)	**488,353**	**488,149**	**487,946**	**487,921**	**487,846**	**487,705**

*Lavaca County and Calhoun County GCDs are pending confirmation as of the date of this report

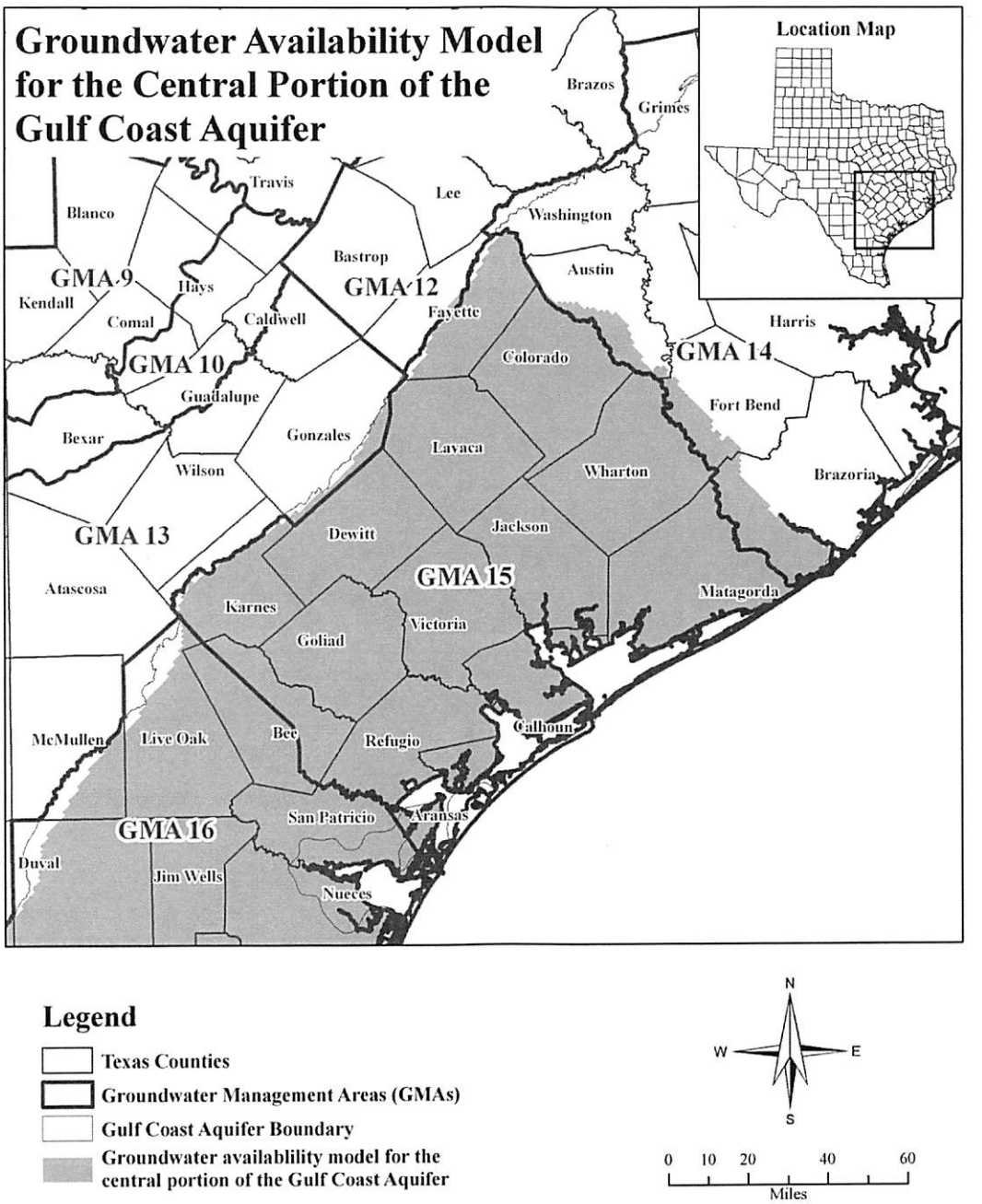

Figure 1. Map showing the areas covered by the groundwater availability model for the central portion of the Gulf Coast Aquifer in Groundwater Management Area 15.

Appendix D. Public Notices Regarding Hearings Related to Plan Adoption

PUBLISHER'S AFFIDAVIT

STATE OF TEXAS
COUNTY OF JACKSON

Personally appeared before the undersigned, a notary public within and for said County and State, Chris Lundstrom, Publisher of THE JACKSON COUNTY HERALD-TRIBUNE a newspaper having general circulation in Jackson County, Texas, who, being duly sworn, states on oath that the foregoing attached notice was published in said newspaper on the following date(s), to wit:

Wednesday Feburary 3, 2016

Chris Lundstrom

Chris Lundstrom, Publisher

Subscribed and sworn to me before this 7 day of March, 2016, to certify which witness my hand and seal of office.

JACLYN ANNETTE FOLMAR
Notary Public
STATE OF TEXAS
My Comm. Exp. 02-11-2019

Jaclyn Folmar

Jaclyn Folmar

Public Hearing Notice

Pursuant to Chapter 36, Texas Water Code, the Texana Groundwater Conservation District will conduct a public hearing on the 2015 Texana Groundwater Conservation District Management Plan - Proposed at 8:30 A.M. on Thursday, February 18, 2016 at the County Services Building, 411 N. Wells St, Edna, Texas 77957. The hearing is conducted to receive comments and suggestions from the public concerning the proposed management plan.

The proposed management plan was developed using the district's best available data and addressed the following management goals, as applicable: (1) providing the most efficient use of groundwater; (2) controlling and preventing waste of groundwater; (3) controlling and preventing subsidence; (4) addressing conjunctive surface water management issues; (5) addressing natural resource issues; (6) addressing drought conditions; (7) addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective; and (8) addressing the desired future conditions adopted by the district under Section 36.108.

The proposed management plan (1) identifies the performance standards and management objectives under which the district will operate to achieve the management goals; (2) specifies the actions, procedures, performance, and avoidance that are or may be necessary to effect the plan; (3) includes estimates of (A) modeled available groundwater in the district based on the desired future condition established under Section 36.108; (B) the amount of groundwater being used within the district on an annual basis; (C) the annual amount of recharge from precipitation, if any, to the groundwater resources within the district; (D) for each aquifer, the annual volume of water that discharges from the aquifer to springs and any surface water bodies including lakes, streams, and rivers; (E) the annual volume of flow into and out of the district within each aquifer and between aquifers in the district, if a groundwater availability model is available; (F) the projected surface water supply in the district according to the most recently adopted state water plan; and (G) the projected total demand for water in the district according to the most recently adopted state water plan; and (4) considers the water supply needs and water management strategies included in the adopted state water plan.

A copy of the proposed management plan may be reviewed or copied at the District's office at 411 N. Wells St, Edna, Texas 77957. Questions or comments should be directed to Tim Andruss, General Manager at Texana Groundwater Conservation District, 411 N. Wells St, Edna, Texas 77957or 361-781-0624.

Public Hearing Notice

Pursuant to Chapter 36, Texas Water Code, the Texana Groundwater Conservation District will conduct a public hearing on the 2015 Texana Groundwater Conservation District Management Plan - Proposed at 8:30 A.M. on Thursday, February 18, 2016 at the County Services Building, 411 N. Wells St, Edna, Texas 77957. The hearing is conducted to receive comments and suggestions from the public concerning the proposed management plan.

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The proposed management plan (1) identifies the performance standards and management objectives under which the district will operate to achieve the management goals; (2) specifies the actions, procedures, performance, and avoidance that are or may be necessary to effect the plan; (3) includes estimates of (A) modeled available groundwater in the district based on the desired future condition established under Section 36.108; (B) the amount of groundwater being used within the district on an annual basis; (C) the annual amount of recharge from precipitation, if any, to the groundwater resources within the district; (D) for each aquifer, the annual volume of water that discharges from the aquifer to springs and any surface water bodies including lakes, streams, and rivers; (E) the annual volume of flow into and out of the district within each aquifer and between aquifers in the district, if a groundwater availability model is available; (F) the projected surface water supply in the district according to the most recently adopted state water plan; and (G) the projected total demand for water in the district according to the most recently adopted state water plan; and (4) considers the water supply needs and water management strategies included In the adopted state water plan.

A copy of the proposed management plan may be reviewed or copied at the District's office at 411 N. Wells St, Edna, Texas 77957. Questions or comments should be directed to Tim Andruss, General Manager at Texana Groundwater Conservation District, 411 N. Wells St, Edna, Texas 77957or 361-781-0624.

Filed 01-29-2016 @ 3:21 P Not Compared
BARBARA EARL, Clerk of County Court
JACKSON COUNTY, TEXAS
BY Nancy Buttschull

Appendix E. Letters Coordinating with Regional Surface Water Management Entities

Texana Groundwater Conservation District

April 22, 2016

Jackson County Countywide Drainage District
213 County Road 325, Inez , Tx 77968-5001

RE: Texana Groundwater Conservation District Management Plan

To Whom It May Concern:

Please find enclosed a copy of the approved District Management Plan for the Texana Groundwater Conservation District. Pursuant to Chapter 36, Texas Water Code, the District has sent a copy of the approved District Management Plan to the Texas Water Development Board for review and approval.

Regards,

Tim Andruss
General Manager

411 N. Wells St. Rm 118, P.O. Box 1098, Edna, Texas 77957, Phone (361)781-0624, Fax (361)781-0453

Texana Groundwater Conservation District

April 22, 2016

Jackson County Navigation District
PO Box 1212, Ganado, Tx 77962-1212

RE: Texana Groundwater Conservation District Management Plan

To Whom It May Concern:

Please find enclosed a copy of the approved District Management Plan for the Texana Groundwater Conservation District. Pursuant to Chapter 36, Texas Water Code, the District has sent a copy of the approved District Management Plan to the Texas Water Development Board for review and approval.

Regards,

Tim Andruss
General Manager

411 N. Wells St. Rm 118, P.O. Box 1098, Edna, Texas 77957, Phone (361)781-0624, Fax (361)781-0453

Texana Groundwater Conservation District

April 22, 2016

Jackson County WCID 1
PO Box 407, Lolita, Tx 77971-0407

RE: Texana Groundwater Conservation District Management Plan

To Whom It May Concern:

Please find enclosed a copy of the approved District Management Plan for the Texana Groundwater Conservation District. Pursuant to Chapter 36, Texas Water Code, the District has sent a copy of the approved District Management Plan to the Texas Water Development Board for review and approval.

Regards,

Tim Andruss
General Manager

411 N. Wells St. Rm 118, P.O. Box 1098, Edna, Texas 77957, Phone (361)781-0624, Fax (361)781-0453

Texana Groundwater Conservation District

April 22, 2016

Jackson County WCID 2
PO Box 97, Vanderbilt, Tx 77991-0097

RE: Texana Groundwater Conservation District Management Plan

To Whom It May Concern:

Please find enclosed a copy of the approved District Management Plan for the Texana Groundwater Conservation District. Pursuant to Chapter 36, Texas Water Code, the District has sent a copy of the approved District Management Plan to the Texas Water Development Board for review and approval.

Regards,

Tim Andruss
General Manager

411 N. Wells St. Rm 118, P.O. Box 1098, Edna, Texas 77957, Phone (361)781-0624, Fax (361)781-0453

Texana Groundwater Conservation District

April 22, 2016

Lavaca-Navidad River Authority
PO Box 429, Edna, Tx 77957-4757

RE: Texana Groundwater Conservation District Management Plan

To Whom It May Concern:

Please find enclosed a copy of the approved District Management Plan for the Texana Groundwater Conservation District. Pursuant to Chapter 36, Texas Water Code, the District has sent a copy of the approved District Management Plan to the Texas Water Development Board for review and approval.

Regards,

Tim Andruss
General Manager

411 N. Wells St. Rm 118, P.O. Box 1098, Edna, Texas 77957, Phone (361)781-0624, Fax (361)781-0453

Texana Groundwater Conservation District

April 22, 2016

City Of Edna
126 W. Main St., Edna, Tx 77957

RE: Texana Groundwater Conservation District Management Plan

To Whom It May Concern:

Please find enclosed a copy of the approved District Management Plan for the Texana Groundwater Conservation District. Pursuant to Chapter 36, Texas Water Code, the District has sent a copy of the approved District Management Plan to the Texas Water Development Board for review and approval.

Regards,

Tim Andruss
General Manager

411 N. Wells St. Rm 118, P.O. Box 1098, Edna, Texas 77957, Phone (361)781-0624, Fax (361)781-0453

Texana Groundwater Conservation District

April 22, 2016

City Of Ganado
P. O. Box 264, Ganado, Tx 77962

RE: Texana Groundwater Conservation District Management Plan

To Whom It May Concern:

Please find enclosed a copy of the approved District Management Plan for the Texana Groundwater Conservation District. Pursuant to Chapter 36, Texas Water Code, the District has sent a copy of the approved District Management Plan to the Texas Water Development Board for review and approval.

Regards,

Tim Andruss
General Manager

411 N. Wells St. Rm 118, P.O. Box 1098, Edna, Texas 77957, Phone (361)781-0624, Fax (361)781-0453

Texana Groundwater Conservation District

April 22, 2016

City Of La Ward
36 Espirita Ave, La Ward, Tx 77970

RE: Texana Groundwater Conservation District Management Plan

To Whom It May Concern:

Please find enclosed a copy of the approved District Management Plan for the Texana Groundwater Conservation District. Pursuant to Chapter 36, Texas Water Code, the District has sent a copy of the approved District Management Plan to the Texas Water Development Board for review and approval.

Regards,

Tim Andruss
General Manager

411 N. Wells St. Rm 118, P.O. Box 1098, Edna, Texas 77957, Phone (361)781-0624, Fax (361)781-0453

Appendix F. Texana Groundwater Conservation District Board of Director Resolution Adopting Management Plan

RESOLUTION

Resolution Number: 2016-02-18-A

Resolution Adopting the Texana Groundwater Conservation District Management Plan

WHEREAS on February 3, 2016, a Notice of Hearing was published in the Jackson County Herald-Tribune newspaper regarding a public hearing on the adoption of the Texana Groundwater Conservation District Management Plan; and

WHEREAS on February 18, 2016, the Texana Groundwater Conservation District Board of Directors with a quorum being present, conducted a public hearing regarding the adoption of the Texana Groundwater Conservation District Management Plan; and

WHEREAS, the Texana Groundwater Conservation District Management Plan had been developed in coordination with surface water management entities and other interested parties;

NOW THEREFORE BE IT RESOLVED that the 2016 Texana Groundwater Conservation District Management Plan is ADOPTED as described in the Texana Groundwater Conservation District Management Plan attached hereto and mad part hereof for all purposes and that said management plan shall be submitted to the Executive Administrator of the Texas Water Development Board for review and approval with all necessary documentation.

Adopted by a vote of 4 ayes and 0 nays on this 18th day of February 2016.

President, Texana Groundwater Conservation District

I, the undersigned, do hereby certify that the above resolution was adopted by the Board of Directors of the Texana Groundwater Conservation District on the 18th day of February 2016.

Director, Texana Groundwater Conservation District

Appendix G. Minutes of Texana Groundwater Conservation District Board of Director Meeting related to the public hearings for and adoption of the Management Plan

TEXANA GROUNDWATER CONSERVATION DISTRICT
Meeting Minutes
Jackson County Services Building
411 N. Wells, Edna, Texas 77957

The Texana Groundwater Conservation District Board of Directors' regular meeting convened at 411 N. Wells, Edna, Texas 77957 on Thursday, February 18, 2016 at 8:30 AM.

The following representatives of Texana Groundwater Conservation District attended the meeting:

Precinct 1:	Kenneth Koop	Absent
Precinct 2:	Michael Skalicky	Present
Precinct 3:	Robert Martin	Present
Precinct 4:	Ray Brundrett	Present
At Large:	Jim Revel	Absent
At Large:	Johnny Dugger	Present
At Large:	Clarence Schomburg	Absent
General Manager:	Tim Andruss	Present
Legal Counsel:	Jim Allison of Allison, Bass & Magee, LLP	Present

Agenda Item 1: Call the meeting to order and welcome guests.

Discussion: Mr. Skalicky called the meeting to order at 8:30 AM.

Board Action: No action taken.

Agenda Item 2: Receive public comments.

Discussion: Mr. Wu of Formosa Plastics provided comments to the Board.

Board Action: No action taken.

Agenda Item 3: Consideration of and possible action on the request for a tax abatement for the Formosa Plastics Corporation, Texas Power Generation Unit, LDPE Unit and HDPE Unit, Jackson County, Texas.

Discussion: Mr. Andruss explained that Mr. Wu of Formosa Plastics Corporation submitted a request for a tax abatement to the District on January 28, 2016. Formosa requests that the District agree to waive the levy of taxes on the proposed expansion of the FPC-TX site in Jackson County for tax year 2016 through tax year 2021 (six years). In return, Formosa offers to pay $10,000 per tax year to the District ($60,000). The

agreement indicates the expansion project would cost approximately $1,000,000,000.00 ($1 Billion). The request includes a provision to authorize Formosa to reduce the expansion without additional consideration by the District provided the expansion project investment does not fall below $500,000,000.00 ($500 Million). The District's tax rate for tax year 2015 is $0.01/$100 value. The tax levy on property valued at $500,000,000.00 at the 2015 tax rate would be $50,000.00.

Mr. Wu provided additional information and responses to questions presented by the District representatives.

Board Action: Mr. Martin moved to the table the matter until a future meeting. Mr. Dugger seconded the motion. The motion passed.

Agenda Item 4: Public hearing regarding the proposed 2015 Texana Groundwater Conservation District Management Plan.

Discussion: Mr. Andruss explained that the District has submitted the public notice for the hearing regarding the proposed management plan to the Jackson County Herald Tribune, Jackson County County Clerk's Office, the District's email notification list, posted the hearing notice on the District's website, and sent letters to Jackson County Countywide Drainage District, Jackson County Navigation District, Jackson County WCID 1, Jackson County WCID 2, Lavaca-Navidad River Authority, City Of Edna, City Of Ganado, and City Of La Ward. The proposed management plan has been available for public inspection at the District's office and website. The District has not received comments or questions regarding the proposed management plan.

Mr. Skalicky opened the public hearing regarding the proposed 2015 Texana Groundwater Conservation District Management Plan at 9:48 AM.

The District received no comments regarding the proposed management plan.

Board Action: Mr. Martin moved to close the public hearing regarding the proposed 2015 Texana Groundwater Conservation District Management Plan at 9:49 AM. Mr. Dugger seconded the motion. The motion passed.

Agenda Item 5: Consideration of and possible action on matters related to the adoption of the proposed 2015 Texana Groundwater Conservation District Management Plan.

Discussion: None.

Board Action: **Mr. Martin moved to** adopt the proposed 2015 Texana Groundwater Conservation District Management Plan, designate the plan the 2016 Texana Groundwater Conservation District Management Plan, and approve the Resolution Adopting the Texana Groundwater Conservation District Management as drafted. Mr. Dugger seconded the motion. The motion passed.

Agenda Item 6: Consideration of and possible action on matters related to revising the groundwater management policies, management plan, and rules of the District.

Discussion: None.

Board Action: No action taken.

Agenda Item 7: Consideration of and possible action on matters related to disposal and injection wells.

Discussion: Mr. Andruss explained that the District has received an executed Protest Withdrawal Agreement from Gemarmi Inc. The District's withdrawal of its protest to the Gemarmi application 43805 will submitted to the TxRRC upon execution by the Mr. Skalicky.

Board Action: No action taken.

Discussion: Mr. Andruss explained that the agreement with Laura Raun Public Relations has been executed. Coordination has begun and Ms. Raun awaits a policy position statement to be developed based on the District's research regarding the development of a groundwater monitoring plan at the West Ranch Oil Field.

Board Action: No action taken.

Agenda Item 8: Consideration of and possible action on matters related to permitting efforts and activities of the District.

Discussion: None.

Board Action: No action taken.

Agenda Item 9: Consideration of and possible action on matters related to GMA 15 Desired Future Conditions and possible proposals for new or amended DFC statements.

Discussion: None.

Board Action: No action taken.

Agenda Item 10: Consideration of and possible action on matters related to aquifer monitoring and groundwater resource assessment in the District.

Discussion: Mr. Andruss explained that the majority of the Jackson County is identified as being in abnormally dry conditions based on the drought intensity map published on February 9, 2016.

Board Action: No action taken.

Agenda Item 11: Consideration of and possible action on matters related to the management goals, objectives and performance standards of the District's management plan.

Discussion: None.

Board Action: No action taken.

Agenda Item 12: Consideration of and possible action on matters related to complaints, investigations, violations, and enforcement actions.

Discussion: None.

Board Action: No action taken.

Agenda Item 13: Consideration of and possible action on matters related to office administration, personnel and staffing, organization, and administrative policies.

Discussion: Mr. Andruss explained that a draft policy regarding capitalization of assets has been developed. The purpose of the policy is to establish the minimum cost that shall be used to determine the capital assets that are to be recorded in Texana Groundwater Conservation District annual financial statements.

Board Action: Mr. Skalicky moved to accept and approve the Texana Groundwater Conservation District Capitalization Policy as drafted. Mr. Brundrett seconded the motion. The motion passed.

Discussion: Mr. Andruss explained that a draft policy regarding leave accrual has been developed. The purpose of the policy is to establish the process through which vacation leave and sick leave is earned and accrued by employees of Texana Groundwater Conservation District. The policy does not limit the amount of sick leave that can be accumulated.

Board Action: Mr. Skalicky moved to accept and approve the Texana Groundwater Conservation District Leave Accrual Policy as revised to limit accrual of sick leave to 320 hours. Mr. Dugger seconded the motion. The motion passed.

Discussion: Mr. Andruss explained that the Board terminated the employment of Ms. Gasch on January 21, 2016. Ms. Gasch last work day was December 18, 2015. Ms. Gasch was absent without leave from December 21, 2015 until her termination. Ms. Gasch had accrued 20.01 hours of vacation time and 3.33 hour of sick time. Ms. Gasch has requested that the District compensate her for the following: 8 hours of Holiday Pay for January 1, 2016, 1.41 hours of work time for time spent reviewing email remotely on January 19, 2016, 20.01 hours of vacation time, 3.33 hours of sick time, and $500.00 benefit stipend.

Board Action: Mr. Dugger moved to compensate Ms. Gasch for 8 hours of Holiday Pay for January 1, 2016, any unused hours of vacation time, any unused hours of sick time. Mr. Skalicky seconded the motion. The motion passed.

Discussion: Mr. Andruss explained that VCGCD is investigating hosting Public Funds Investment Act Training in March or April. The training is mandatory for investment officers of GCDs. The training class cost for VCGCD will be $2,000.00 with enrollment limited to 20 individuals. The following districts have expressed interest in enrolling in the training: VCGCD, RGCD, CCGCD, GCGCD, and PVGCD.

Board Action: Mr. Skalicky move to authorize the General Manager to enroll up to 2 representatives from the District in the PFIA Training Class and contribute up to a $350.00 participation fee. Mr. Dugger seconded the motion. The motion passed.

Agenda Item 14: Consideration of and possible action on the annual budget of the District.

Discussion: None.

Board Action: No action taken.

Agenda Item 15: Consideration of and possible action on matters related to the minutes of previous meetings.

Discussion: None.

Board Action: No action taken.

Agenda Item 16: Consideration of and possible action on matters related to the financial reports of the District.

Discussion: Mr. Andruss presented a copy of the District's bank statement for January 2016.

Board Action: No action taken.

Agenda Item 17: Consideration of and possible action on matters related to the bills and invoices of the District.

Discussion: Mr. Andruss presented copies of the District's invoices for January 2016.

Board Action: Mr. Brundrett moved to authorize the general manager to pay the following bills and invoices: CSB Credit Card Statement T Andruss - 20160205 - $154.53, VCGCD Invoice ILA-201601 - $1,079.78, TGCD - GMS2016M01 - $4,591.00, and C Ozment CPA Invoice - 20160126 - $75.00. Mr. Dugger seconded the motion. The motion passed.

Agenda Item 18: Consideration of General Manager's Report.

Discussion: None.

Board Action: No action taken.

Agenda Item 19: Consideration of and possible action on matters related to legal counsel report.

Discussion: None.

Board Action: No action taken.

Agenda Item 20: Adjourn.

Discussion: None.

Board Action: Mr. Brundrett moved to adjourn at 11:00 AM. Mr. Martin seconded the motion. The motion passed.

Prepared by:
Tim Andruss
General Manager
Texana Groundwater Conservation District

The above and foregoing minutes were read and approved on this the 14th day of April, 2016.

ATTEST:

District Director

District Director

Appendix H. Texana Groundwater Conservation District Contact Information

When completed, mail to:

District Registration Form

UTILITIES AND DISTRICT SECTION, MC-152
TCEQ
PO BOX 13087
Austin, Texas 78711-3087 **or** fax to: 512-239-6190

Texana Groundwater Conservation District
Legal Name of District or Authority

P.O. Box 1098 | Edna | Tx | 77957
District's Mailing Address | City | State | Zip

361-781-0624 | admin@texanagcd.org | www.texanagcd.org
District's Telephone Number (AC) | E-mail | Web Address

A. BOARD MEMBERS (as applicable):

TITLE	FULL NAME OF DIRECTOR (First, Middle, Last)	FULL MAILING ADDRESS According to U.S. Post Office Standards	TELEPHONE NUMBERS (Include Area Code)			TERM OF OFFICE		
			Business	Fax	Home	Elected(E) Appointed (A) Elected by Precinct (P)	Term Begins (mm/dd/yyyy)	Term Ends (mm/dd/yyyy)
President or Chairman	Michael Skalicky	P.O. Box 428, Ganado, TX, 77962			361-771-5816	P		12/2018
Vice-President	Kenneth Koop	1422 CR 110, Edna, TX 77957			361-782-6052	P		12/2016
Secretary	James Revel	326 Trout St, Palacios, TX 77465			281-883-7640	E		12/2016
Treasure	Ray Brundrett	P.O. Box 417, La Ward, TX 77970			361-872-2427	P		12/2018
Director	Robert Martin	750 CR 317, Edna, TX 77957			361-550-2159	P		12/2016

B. CONSULTANTS AND REPRESENTATIVES (as applicable):

POSITION	FULL NAME OF INDIVIDUAL	NAME OF FIRM OR ORGANIZATION	FULL MAILING ADDRESS According to U.S. Post Office Standards	TELEPHONE NUMBERS (Include Area Code)	
				Business	Fax
General Manager	Tim Andruss	Texana GCD	P.O. Box 1098, Edna, TX 77957	361-781-0624	361-781-0453
Operator					
Attorney	James Allison	Allison, Bass and Magee	A.O. Watson House, 402 W. 12 St, Austin, TX 78701	512-482-0701	512-480-0902
Engineer					
Bookkeeper					
Financial Advisor					
Tax Collector	Donna Atzenhoffer	County of Jackson	Courthouse, 115 W. Main, Edna, Tx 77957	361-782-3473	361-782-3645
Agent for Notice					

*All information provided herein is subject to the Public Information Act and will be made available on our web site (www.tceq.texas.gov)

District Registration Form (continued)

A. BOARD MEMBERS: (continued)

TITLE	FULL NAME OF DIRECTOR (First, Middle, Last)	FULL MAILING ADDRESS According to U.S. Post Office Standards	TELEPHONE NUMBERS (Include Area Code)			TERM OF OFFICE		
			Business	Fax	Home	Elected(E) Appointed (A) Elected by Precinct (P)	Term Begins (mm/dd/yyyy)	Term Ends (mm/dd/yyyy)
Director	Johnny Dugger	1918 CR 303, Edna, TX 77957			361-782-6036	E		12/2018
Director	Clarence Schomburg	P.O. Box 292, Ganado, TX 77962			361-771-2669	E		12/2018

Certification: I certify that the information contained herein is correct and complete to the best of my knowledge.

Signature	Printed Name and Title	(Area Code) Daytime Telephone	Date Signed

If you have questions on how to fill out this form, please contact us at 512 / 239 - 4691. Individuals are entitled to request and review their personal information the Agency gathers on its forms. They may also have errors in their information corrected. To review such information, contact us at 512 / 239 - 3282.

C. ADDITIONAL STATUTORY REQUIREMENTS (Texas Water Code):

1. Requirement Generally Applicable to Most Districts and Authorities:
   - a) §49.055(d). File copies of directors' sworn statements, bonds, and oaths with the District's records. File copies of directors' sworn statements and oaths with the Secretary of State within 10 days after its execution.
   - b) §36.054(e) and §49.054(f). File the director's names, mailing addresses, and terms of office with the TCEQ within 30 days after any election or appointment.
   - c) Annual Audit and Financial Reports:
     1. §49.194(a). File audit with the TCEQ within 135 days of the District's fiscal year end, or
        §49.197(d). File financial dormancy affidavit with the TCEQ by January 31, or
        §49.198(c). File financial report with the TCEQ within 45 days of the District's fiscal year end.
     2. §49.194(c). File audit, financial dormancy affidavit, or financial report with the District's records.
     3. §49.194(d). Annually, submit the District's filing affidavit to the TCEQ with the District's audit, financial dormancy affidavit, or financial report.
     4. §49.158. Notify the TCEQ of the District's adoption of a fiscal year within 30 days of initial financial activity, or after a change in the District's fiscal year.
   - d) §49.199(a). Adopt a code of ethics and other specified policies and procedures.
2. Requirements Applicable to Certain Districts and Authorities, as Specified in the Statues:
   - a) §49.453. File with the TCEQ the name, address, and telephone number of the District's *Agent for Notice* (the person responsible for issuing forms to comply with the Notice to Purchaser requirements of §49.452)
   - b) §49.455. File information form and map, or any amendments, with each county clerk and the TCEQ.
   - c) §49.451. Post district name signs at two principal entrances to the District within 30 days of the District's creation.
   - d) §49.062 Publish and file with the TCEQ a resolution establishing a meeting place outside the District.
   - e) §49.307(b), §49.301(f) & §49.302. File orders excluding and annexing land with the TCEQ and in the deed records of each county (ies) in which the District is situated.

Texas Statues can be viewed at: http://www.capitol.state.tx.us/ EXIT