SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

GROUNDWATER MANAGEMENT PLAN 2022

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(Revised and Re-adopted: April 14, 2022)

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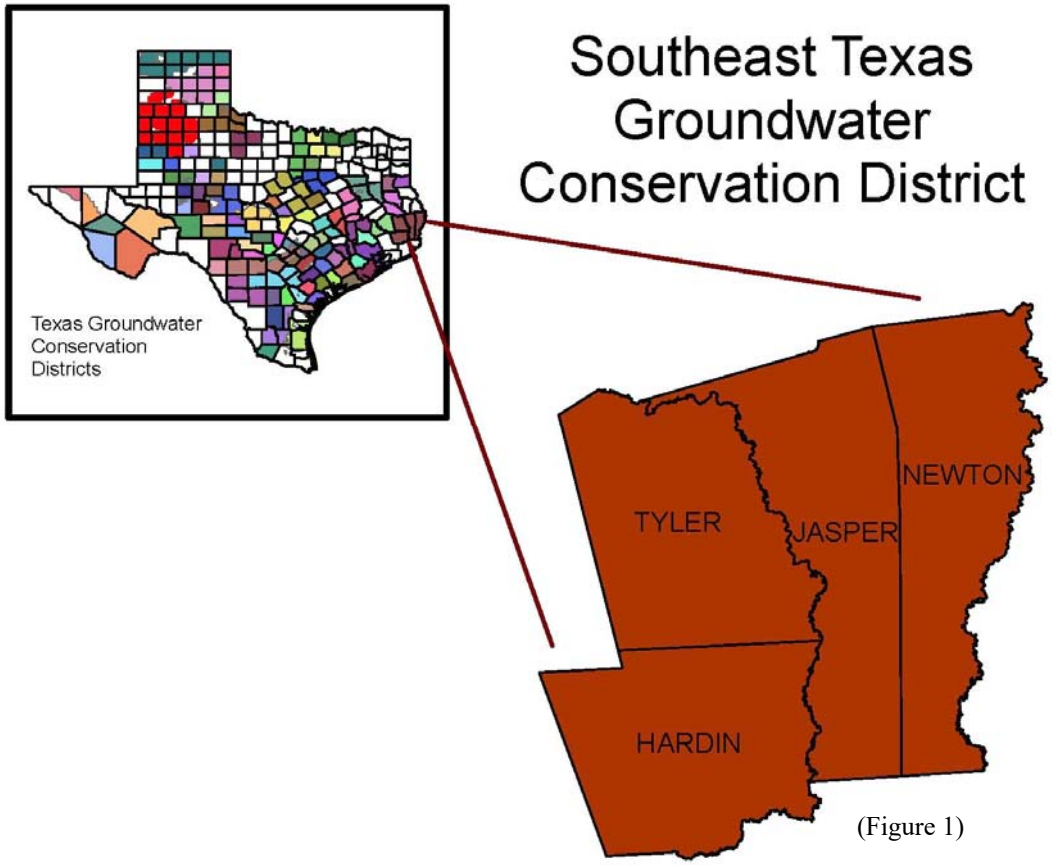
APPENDICES:

1. INTRODUCTION/PURPOSE

The Southeast Texas Groundwater Conservation District (the "District") was created to conserve, preserve, protect, recharge, and prevent the waste of groundwater and to control subsidence caused by the withdrawal of groundwater within its boundaries which are coextensive with the boundaries of Jasper, Newton, Hardin and Tyler Counties, Texas as shown in *Figure 1*. As part of the process of accomplishing its purposes, the District is required to adopt a management plan which, after adoption, must be reviewed and approved by the Texas Water Development Board. The District is located in Groundwater Management Area 14 which covers the Upper Gulf Coast Aquifer. The District is also included in the Region I, Regional Water Planning Group.



(Figure 1)

2. DESCRIPTION OF THE DISTRICT

2.1 Creation and Organization. The 78th Texas Legislature, in its regular session of 2003, enacted Senate Bill 1888 which created the District in Jasper and Newton Counties, subject to approval of a confirmation election. On November 2, 2004 the voters of Jasper and Newton Counties confirmed the creation of the District. Subsequently, the Commissioners' Courts of Hardin and Tyler Counties, Texas, adopted resolutions requesting that Hardin and Tyler County be added to the District. The voters of Hardin and Tyler County confirmed the inclusion of the Counties into the District at an election held on November 8, 2005.

The District is governed by a thirteen (13) member board of directors (the "Board"). The Jasper County Commissioners' Court appoints two directors, one of whom represents rural water utilities and small water supply interests and one director who represents the large industrial groundwater supply interests and large municipal utilities. The Newton County Commissioners' Court appoints two directors, one of whom represents rural water utilities and small municipal water supply interests and one director who represents forestry or agricultural groundwater supply interests in the Counties. Both the Jasper City Council and the Newton City Council each appoint one director. The Hardin County Commissioners' Court appoints three directors, one representing rural water utilities and small municipal groundwater supply interests, one director representing the forestry, industrial, agricultural or landowner groundwater supply interests, and one director representing large municipal groundwater supply interests. The Tyler County Commissioners' Court appoints three directors, one representing rural water utilities and small municipal groundwater supply interests, one director representing the forestry, industrial, agricultural or landowner groundwater supply interests, and one director representing large municipal groundwater supply interests.

The Commissioners' Courts of Jasper, Newton, Hardin, and Tyler Counties shall jointly appoint one director to represent the forestry, agricultural, or landowner groundwater supply interest. The jointly appointed director shall serve as the presiding officer of the Board.

2.2 Legal Authority. The Act creating the District, Senate Bill 1888, confers upon the District all of the powers of a groundwater conservation district under Texas Water Code Chapter 36, except as limited by the Act. The District was created under Texas Constitution Article 16, Section 59 and is a governmental agency and political subdivision of the State. Senate Bill 1888 prohibits the District from imposing a tax, limits pumpage fees charged by the District to not exceed $0.01 (one cent) per thousand gallons of groundwater withdrawn for any purpose. The Act further denies the District the power of eminent domain, the power to issue bonds or other obligations that pledge revenue derived from taxation, and the power to purchase groundwater lot rights unless the rights purchased are for conservation purposes and are permanently held in trust not to be produced.

2.3 Purpose of Management Plan. The 75th Texas Legislature in 1997 enacted Senate Bill 1 ("SB 1") to establish a comprehensive statewide water planning process. In particular, SB 1 contains provisions that required groundwater conservation districts to prepare management plans to identify the water supply resources and water demands that will shape the decisions of each district. SB 1 designed the management plans to include management goals for each district to manage and conserve the groundwater resources within their boundaries.

In 2001, the Texas Legislature enacted Senate Bill 2 ("SB 2") to build on the planning requirements of SB 1 and to further clarify the actions necessary for districts to manage and conserve the groundwater resources of the state of Texas.

The Texas Legislature enacted significant changes to the management of groundwater resources in Texas with the passage of House Bill 1763 ("HB 1763") in 2005. HB 1763 created a long-term planning process in which groundwater conservation district ("GCDs") in each Groundwater Management Area ("GMA") are required to meet and determine the desired future conditions ("DFCs") for groundwater resources within their boundaries by September 1, 2010. HB 1763 also requires that GCDs share their management plans with other GCDs within their respective GMA. The Southeast Texas Groundwater Conservation District is located within GMA 14 along with the following GCDs *(see figures 2a and 2b)*:

Bluebonnet Groundwater Conservation District;
Brazoria County Groundwater Conservation District;
Lone Star Groundwater Conservation District; and
Lower Trinity Groundwater Conservation District

TEXAS GROUNDWATER MANAGEMENT AREAS

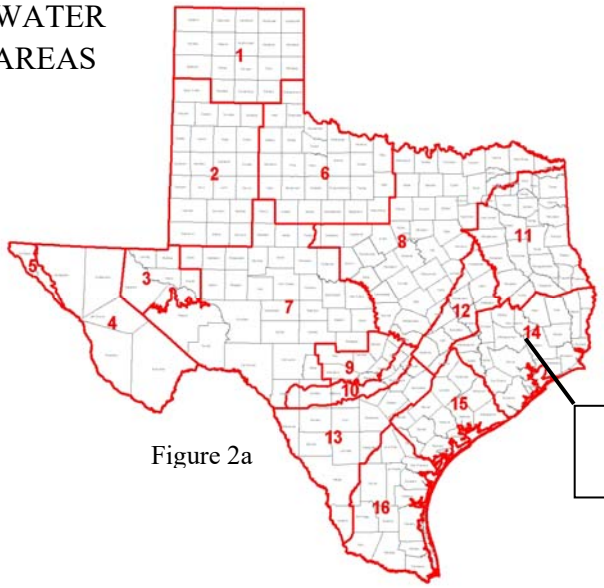


Figure 2a

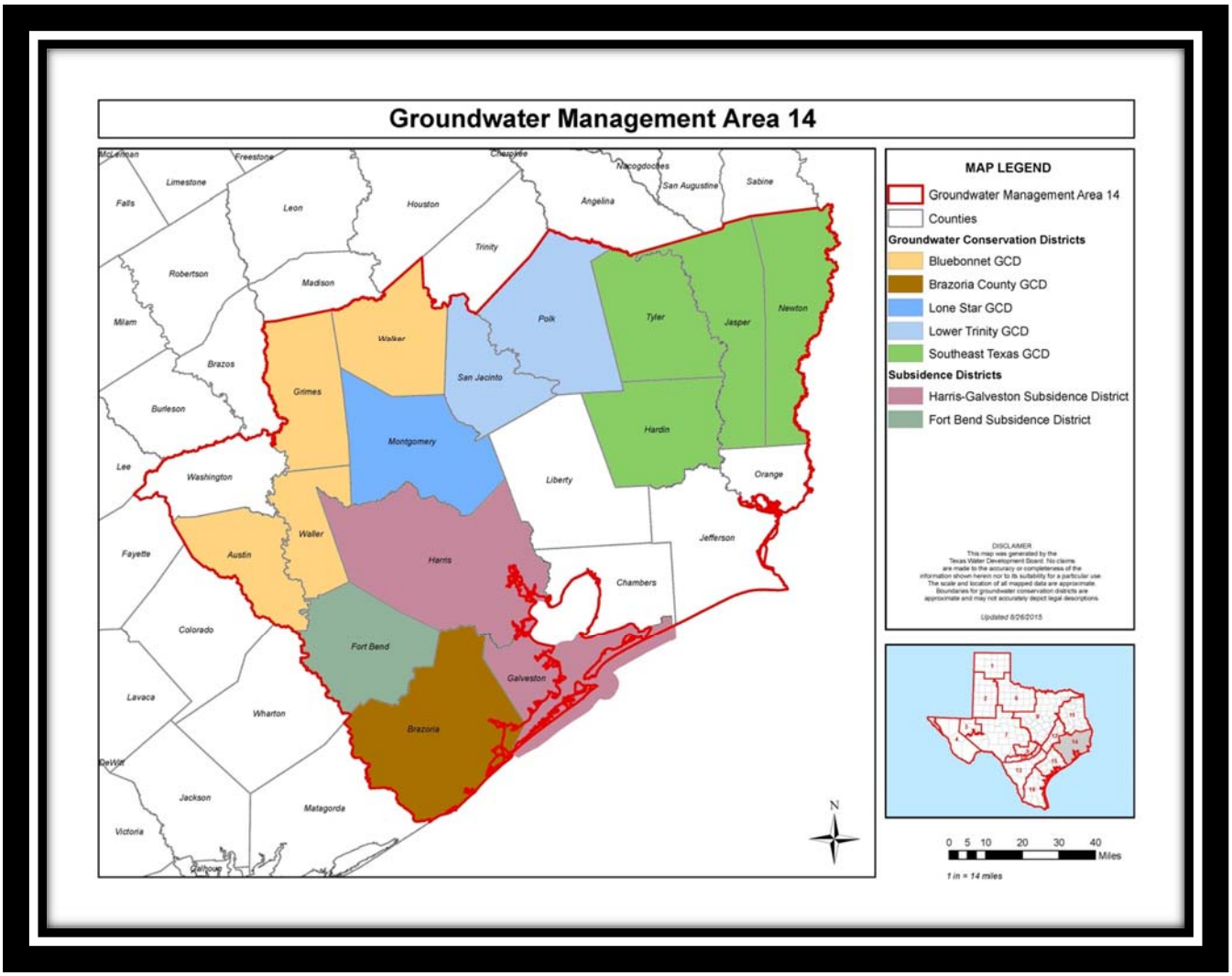


Figure 2b

The Southeast Texas Groundwater Conservation District's management plan satisfies the requirements of SB 1, SB 2, HB 1763, the statutory requirements of Chapter 36 of the Texas Water Code, and the administrative requirements of the Texas Water Development Board's rules.

2.4 Rules and Regulations. After public notice and a public hearing, the District adopted its substantive rules which became effective July 1, 2005 (amended October 2009, July 2010, April 2012, October 2014, and November 2020). The District also adopted Rules for Hearing which became effective July 1, 2005 (amended November 2020). A copy of the District

Rules, incorporated herein as Appendix D, and Rules for Hearing can be found at the District's website at: http://www.setgcd.org.

2.5 How the District Will Manage Groundwater Supplies: The District's management plan is promulgated under the District's statutory authority to protect private property rights, balance the conservation and development of groundwater to meet the needs of the state, use the best available science in the conservation and development of groundwater and to achieve the following objectives; to provide for conserving, preserving, protecting, and recharging of the groundwater or of a groundwater reservoir of its subdivisions in order to control subsidence, prevent degradation of water quality, or prevent waste of groundwater. The District's orders, rules, regulation, requirements, resolutions, policies, guidelines, or similar measures have been implemented to fulfill these objectives to minimize as far as practicable the drawdown of the water table or the reduction of artesian pressure, to prevent or control subsidence, to prevent interference between wells, to prevent degradation of water quality, and to prevent waste.

Non-Exempt Permits are reviewed individually and independently. The District reviews and analyzes any potential impacts to the groundwater resources. The District requires the submittal of a hydrogeologic report for non-exempt wells with a daily maximum capacity of 250,000 gallons or more as part of the permit application process. In general, the hydrogeologic report is intended to evaluate the impacts of pumping, such as drawdown, impacts to neighboring wells, potential for measurable subsidence and other relevant impacts. The hydrogeologic report must include the results of a simulation of the groundwater availability model of the area for the aquifer in which the well is to be completed. The District's Rules, attached as Appendix D, provide Guidelines for Hydrogeologic Reports setting standards and expectations for the reports.

The data and analyses the hydrogeologic report are used to address production limits, monitoring requirements, and permit conditions.

Controlling and preventing measurable subsidence will be addressed during review and processing of new, renewed, and amended permit applications. Prior to approval of a new Non-Exempt Permit, if the hydrogeological report indicates conditions including compaction of subsurface clay content, aquifer testing or other reliable data demonstrating the potential for measurable subsidence, the District will implement actions to address subsidence that may include (a) permit denial, revocation, suspension, cancellation, modification, or amendment, (b) production limits, (c) spacing requirements, (d) permit conditions requiring extensometer installation, subsidence monitoring and reporting, (e) the establishment of threshold limits that trigger reduces production based on monitoring results and (f) any other action reasonably necessary to control and prevent measurable subsidence. If the District has reason to believe that a Non-Exempt well has the potential to cause measurable subsidence, the District may take all actions it deems necessary to address the potential subsidence.

3. GROUNDWATER RESOURCES OF THE DISTRICT AND TECHNICAL INFORMATION AS REQUIRED BY TEXAS ADMINISTRATIVE CODE

The Texas Gulf Coast area includes the Gulf Coast Aquifer System, Yegua-Jackson Aquifer, and the Brazos River Alluvium aquifers. Only the Chicot, Evangeline, Burkeville Confined, Jasper, and the Yegua-Jackson Aquifers are present within the District. The boundaries of these aquifers have been defined by the Texas Water Development Board ("TWDB"). See the TWDB GAM Run ~~16-024~~ 21-019 MAG attached as Appendix C.

3.1 Modeled Available Groundwater ("MAG"). The Texas Water Code defines modeled available groundwater 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 Texas Water Code §36.108.

On January 5, 2022, ~~as~~ the Members of Groundwater Management Area 14 approved Resolution 2021-10-5 adopting new desired future conditions with the groundwater management area. The desired future conditions that were approved are:

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

~~However, since the Southeast Texas Groundwater Conservation District's management plan must be adopted 90 days prior to expiration (May 10, 2022) and the Texas Water Development Board is not expected to have the modeled available groundwater Report for the new desired future conditions available until late 2022 the District will continue to utilize the current desired future conditions and associated modeled available groundwater Report 16-024 MAG (attached as appendix C) until such time as the new modeled available groundwater report is made available. The District will then amend its management plan to address the new desired future conditions and modeled available groundwater.~~

The joint planning process set forth in Texas Water Code §36.108 must be collectively conducted by all groundwater conservation districts within the same GMA. The District is a member of GMA 14. GMA 14 adopted DFCs for the Gulf Coast Aquifer System on ~~April 29, 2016~~ January 5, 2022:

As provided for by Texas Administrative Code, Rule §356.31(b), GMA 14 declared the following aquifers as non-relevant for the purposes of joint planning: Carrizo-Wilcox ~~Sand~~ Aquifer; Queen City Aquifer; Sparta Aquifer; ~~and,~~ Yegua-Jackson Aquifer,Brazos River Alluvium Aquifer,

Navasota River Alluvium Aquifer, San Bernard River Alluvium Aquifer, San Jacinto River Alluvium Aquifer, and Trinity River Alluvium Aquifer occurring within the bounds of GMA 14.

The adopted DFCs were then forwarded to the TWDB for development of the modeled available groundwater ("MAG") calculations. On ~~December 15, 2016~~ September 8, 2022 the TWDB issued draft GAM Run ~~16-024~~ 21-019 MAG for review which received final approval on October 6, 2022, attached as Appendix C. A summary of the desired future conditions and modeled available groundwater, relative to the Southeast Texas Groundwater Conservation District, are summarized in *Tables 1~~–4~~*.

DESIRED FUTURE CONDITION AND MODELED AVAILABLE GROUNDWATER FOR THE SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

The Disired Future Conditions for all of GMA 14 (with the exception of the Harrris-Galveston, and Fort Bend Subsidence Districts), including the four counties of the Southeast Texas Groundwater Conservation District, are: ***In each county in Groundwater Management Area 14, no less than 70 percent median available drawdown remaining in 2080 or no more than an average of 1.0 additional foot of subsidence between 2009 and 2080.***

The pumping volumes associated with the adopted DFCs for the period 2020 – 2080, as outlined in GR21-019 MAG, split by model/aquifer layer are as follows:

	MODELED AVAILABLE GROUNDWATER ANNUAL AF/YR				
	CHICOT AQUIFER	EVANGELINE AQUIFER	BURKEVILLE AQUIFER	JASPER AQUIFER	TOTAL
Hardin County	1,492	36,229	0	0	37,721
Jasper County	10,858	43,842	8	18,657	73,365
Newton County	547	23,162	0	13,800	37,509
Tyler County	0	18,519	0	15,871	34,390
TOTAL	12,897	121,752	8	48,328	**182,985**

~~AQUIFER~~	~~HARDIN COUNTY~~	
	~~Desired Future Conditions~~ ~~Average Drawdown in 2070 – feet~~	~~Modeled Available Groundwater (AF/yr) 2070~~
~~Chicot~~	~~21~~	~~1,262~~
~~Evangeline~~	~~27~~	~~33,665~~
~~Burkeville~~	~~29~~	~~0~~
~~Jasper~~	~~89~~	~~0~~
~~Yegua Jackson~~	~~*~~	~~N?A~~
~~TOTAL~~		~~34,927~~

Table 1

~~AQUIFER~~	~~JASPER COUNTY~~	
	~~Desired Future Conditions~~ ~~Average Drawdown in 2070 – feet~~	~~Modeled Available Groundwater (AF/yr) 2070~~
~~Chicot~~	~~23~~	~~10,827~~
~~Evangeline~~	~~41~~	~~40,648~~
~~Burkeville~~	~~46~~	~~1~~
~~Jasper~~	~~40~~	~~16,008~~
~~Yegua Jackson~~	~~*~~	~~N/A~~
~~TOTAL~~		~~67,484~~

Table 2

~~AQUIFER~~	~~NEWTON COUNTY~~	
	~~Desired Future Conditions~~ ~~Average Drawdown in 2070 – feet~~	~~Modeled Available Groundwater (AF/yr) 2070~~
~~Chicot~~	~~35~~	~~500~~
~~Evangeline~~	~~45~~	~~21,343~~
~~Burkeville~~	~~44~~	~~0~~
~~Jasper~~	~~37~~	~~12,376~~
~~Yegua Jackson~~	~~*~~	~~N/A~~
~~TOTAL~~		~~34,219~~

~~AQUIFER~~	~~TYLER COUNTY~~	
	~~Desired Future Conditions~~ ~~Average Drawdown in 2070 – feet~~	~~Modeled Available Groundwater (AF/yr) 2070~~
~~Chicot~~	~~42~~	~~0~~
~~Evangeline~~	~~35~~	~~20,576~~
~~Burkeville~~	~~30~~	~~1~~
~~Jasper~~	~~62~~	~~17,634~~
~~Yegua Jackson~~	~~*~~	~~N/A~~
~~TOTAL~~		~~38,211~~

Table 3 *Table 4*

*The Yegua-Jackson Aquifer is declared non-relevant within the Southeast Texas Groundwater Conservation District.

3.2 **Amount of Groundwater Being Used within the District on an Annual Basis**. Please refer to Appendix A.

3.3 **Annual Amount of Recharge from Precipitation to the Groundwater Resources within the District**. Please refer to Appendix B.

3.4 **Annual Volume of Water that Discharges from the Aquifer to Springs and Surface Water Bodies**. Please refer to Appendix B.

3.5 **Estimate of the Annual Volume of Flow into the District, out of the District, and Between Aquifers in the District**. Please refer to Appendix B.

3.6 **Projected Surface Water Supply within the District**. Please refer to Appendix A.

3.7 **Projected Total Demand for Water within the District**. Please refer to Appendix A.

3.8 **Water Supply Needs**. The District reviewed, considered, and included the Water Supply Needs from the 2022 State Water Plan, adopted on July 7, 2021, and as provided by the Texas Water Development Board in the Estimated Historical Water User 2022 State Water Plan Datasets Report incorporated herein as Appendix A. The water supply needs as shown in the 2022 State Water Plan for the four counties of the Southeast Texas Groundwater Conservation District are overall nominal. Hardin and Tyler Counties show no water supply needs and Newton County indicates only a very minimal need. The 2022 State Water Plan shows a rather substantive need in Jasper County due to the water needs of the John D. Parker East Texas State Fish Hatchery.

3.9 Water Management Strategies. The District reviewed, considered, and included the Water Management Strategies from the 2022 State Water Plan, adopted on July 7, 2021, and as provided by the Texas Water Development Board in the Estimated Historical Water User 2022 State Water Plan Datasets Report incorporated herein as Appendix A.

Because there is no projected need in Hardin and Tyler Counties, the 2022 State Water Plan Projected Water Management Strategies do no include any strategy for additional water supplies, surface or groundwater, for these counties. The two counties with projected needs, Newton and Jasper, have Projected Water Management Strategies that do not rely on groundwater. The water need for Newton County is met by the Projected Water Management Strategy of obtaining addition surface water from Toledo Bend Reservoir. The strategy to meet the need in Jasper County is to obtain additional surface water from Sam Rayburn Reservoir.

4. MANAGEMENT GOALS, PERFORMANCE STANDARDS, MANAGEMENT OBJECTIVES, AND METHODOLOGY

Each year, an annual report will be created by the general manager and staff of the District and will be provided to the members of the Board. The annual report will cover the activities of the District including information on the District's performance in regards to achieving the District's management plan goals and objectives. The annual report will be delivered to the Board within one hundred and eighty (180) days following the completion of the District's fiscal year. A copy of the Annual Report will be kept on file and be made available for public inspection at the District's office upon adoption of the report by the Board.

4.1 Providing the Most Efficient Use of Groundwater:

4.1.1 Objective - Each year, the District will require all new exempt or non-exempt wells that are constructed within the boundaries of the District to be registered or permitted with the District in accordance with the District's Rules.

4.1.2 Performance Standard - The number of exempt and non-exempt wells registered or permitted by the District for the year will be incorporated into the District's Annual Report.

4.2 Controlling and Preventing the Waste of Groundwater in the District

4.2.1 Objectives - Each year, the District will make an evaluation of the District Rules to determine whether any amendments are recommended to decrease the amount of waste of groundwater within the District.

4.2.2 Performance Standard - The District will include a copy of the meeting notice/agenda as well as the minutes of the meeting at which the District Rules were discussed and the determination of whether any amendments to the rules are recommended to prevent the waste of groundwater in the District's Annual Report.

4.2.3 Objective - Each year, the District will provide information to the public on eliminating and reducing wasteful practices in the use of groundwater by posting an article or newsletter on groundwater waste reduction on the District's website.

4.2.4 Performance Standard - Each year, a copy of the information provided in the groundwater waste reduction article or newsletter posted on the District's website will be included in the District's Annual Report.

4.3 Controlling and Preventing Subsidence.

4.3.1 Objective – The District has reviewed the pertinent portions (Section 4.1.1 and 4.2.4) of the Texas Water Development Board's subsidence risk report: ***Identification of the Vulnerability of the Major and Minor Aquifers of Texas to Subsidence with Regard to Groundwater Pumping,*** – as well as other sources for

applicability to the Southeast Texas Groundwater Conservation District in an effort to better proactively manage subsidence.

At this time, there are no known occurrences of subsidence within the District. The District proactively strives to prevent subsidence from occurring by applying its Rules, meeting the goals of its management plan, and participating in joint planning efforts in both GMA 14 and the Region I Water Planning Group. Subsidence is one of the main considerations in groundwater management area planning and must be taken into consideration in the desired future conditions process prior to adopting new desired future conditions. The District will participate in this process by attending at least one Groundwater Management Area 14 meeting each year.

4.3.1 Performance Standard – A copy of the Groundwater Management Area 14's meeting notice/agenda and sign-in sheets (or any other available evidence of attendance) will be included in the District's annual report.

4.3.2 Objective - Each year, the District will review the data from subsidence monitoring locations within the District boundaries and may pursue installation of additional PAM or CORs subsidence monitoring locations.

4.3.2. Performance Standard - Each year, a summary of the data related to subsidence monitoring stations within the District and installation of additional sites will be included in the Annual Report submitted to the Board of Directors of the District.

4.4 Addressing Conjunctive Surface Water Management Issues.

4.4.1 Objective - The District will coordinate conjunctive surface water issues with the Angelina and Neches River Authority (ANRA), Lower Neches Valley Authority (LNVA), the Sabine River Authority (SRA), and the East Texas Regional

Water Planning Group (also known as Region I), by either inviting the officials from the Planning Group and river authorities to attend a District meeting at least once a year or by attending at least one of the East Texas Regional Water Planning Group meetings each year.

4.4.2 Performance Standard. - A copy of the invitation letters to the Planning Group and the surface water providers, as well as evidence that the letters have been sent, via either U.S. Postal Service (registered/return receipt) or e-mail will be included in the District's annual report, or a copy of the East Texas Regional Water Planning Group meeting notice(s) and sign in sheet(s) indicating a representative of the District was present will be included in the District's Annual Report.

4.5 Natural Resource Issues Affecting the Use and Availability of Groundwater or Affected by the Use of Groundwater.

4.4.1 Objective - The District requires that all water wells used in conjunction with the exploration of hydrocarbons be registered with the District.

4.4.2 Performance Standard – Each month the Board will be provided information pertaining to any new water well registered and drilled for the purpose of hydrocarbon exploration and a summary of all these wells will be included in the District's Annual Report.

4.6 Addressing Drought Conditions.

4.6.1 Objectives - The District will post an article and/or drought index maps regarding drought conditions in the District at least annually on the District's website.

4.6.2 Performance Standard - A copy of the article and/or drought index maps posted on the District's website regarding drought conditions will be included in the District's annual report.

4.7 Addressing Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, or Brush Control.

Conservation is the only practice which is practicable in the District. The District does not consider recharge enhancement, precipitation enhancement, or brush control to be either necessary or practical at this time. Rainwater harvesting is not necessary due to the very high rainfall rate in the District. Therefore, these four goals are not applicable.

4.7.1 Objective - The District will annually submit an article regarding water conservation for publication to at least one newspaper of general circulation in Jasper, Newton, Hardin and Tyler Counties.

4.7.2 Performance Standard - A copy of the article submitted by the District for publication to a newspaper of general circulation in Jasper, Newton, Hardin and Tyler Counties regarding water conservation will be included in the District's annual report.

4.7.3 Objective - The District will publish and mail or email, at least once annually, an informative flier or newsletter on water conservation and related issues to groundwater use permit holders. A copy of the flier or newsletter shall also be made available on the District's website.

4.7.4 Performance Standard – A copy of the flier or newsletter on water conservation and related issues, along with the mailing/emailing list of the permit holders to whom it was provided shall be included in the District's annual report.

4.8 Addressing in a Quantitative Manner the Desired Future Conditions

4.8.1 Objective - The District will monitor groundwater conditions within the District by measuring the static water levels in at least fifteen (15) monitor wells annually.

4.8.2 Performance Standard – The recorded static water levels of the fifteen (15) monitor wells will be included in the District's annual report.

5. ACTIONS, PROCEDURES, PERFORMANCE, AVOIDANCE FOR IMPLEMENTATION OF MANAGEMENT PLAN, AND DETAILS ON MANAGING GROUNDWATER SUPPLIES IN THE DISTRICT.

The District will implement the goals and provisions of this management plan as a guideline in its decision making. The District will ensure that its planning efforts, operations, and activities will be consistent with the provisions of this plan.

The District has adopted rules in accordance with Chapter 36 of the Texas Water Code, and all rules will be followed and enforced. The District Rules are available at https://setgcd.org/rules/The District may amend the District Rules as necessary to comply with changes to Chapter 36 of the Texas Water Code or a revised management plan to ensure the best management of groundwater within the District according to present aquifer conditions. The development and enforcement of the district rules will be based on best scientific and technical evidence available to the District.

The District will encourage cooperation and coordination in the implementation of this plan. All operations and activities of the District will be performed in a manner that encourages cooperation with the appropriate state, regional or local water entity.