

**Bluebonnet Groundwater
Conservation District**

Groundwater Management Plan

~~September 19, 2018~~ January 20, 2021

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Bluebonnet Groundwater Conservation District Groundwater Management Plan – 2018

The Bluebonnet Groundwater Conservation District (the “District”) was created by the 77th Texas Legislature under the authority of Section 59, Article XVI, of the Texas Constitution, and in accordance with Chapter 36 of the Texas Water Code (“Water Code”), by the Act of May 21, 2001, 77th Leg., R.S., ch. 1361, 2001 Tex. Gen. and Spec. Laws, codified May 29, 2009, 81st Leg., R.S., ch. 1139, sec. 8825 (“the District Act”).

The District is a governmental agency and a body politic and corporate. The District was created to serve a public use and benefit, and is essential to accomplish the objectives set forth in Section 59, Article XVI, of the Texas Constitution. The District’s boundaries are coextensive with the boundaries of Austin, Grimes, Walker, and Waller Counties, Texas, and lands and other property within these boundaries will benefit from the works and projects that will be accomplished by the District.

District Mission and 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 contained 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 districts (GCDs) in each Groundwater Management Area (GMA) are required to meet and determine the Desired Future Conditions (DFCs) for the groundwater resources within their boundaries by September 1, 2010. In addition, HB 1763 required GCDs, to share management plans with the other GCDs in the GMA for review by the other GCDs.

The Bluebonnet 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 (TWDB) rules.

Technical District Information Required by Texas Administrative Code

Estimate of Modeled Available Groundwater in District Based on Desired Future Conditions

Texas Water Code § 36.001 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 Section 36.108”.

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 on April 29, 2016. The adopted DFCs were approved as administratively complete by the TWDB. The submittal package and explanatory report for the DFCs can be found here:

http://www.twdb.texas.gov/groundwater/dfc/docs/summary/GMA14_DFC_2016.pdf
http://www.twdb.texas.gov/groundwater/dfc/docs/GMA14_DFCExpRep.pdf

Desired future conditions and modeled available groundwater values applicable for the District are summarized below (MAG values for the Gulf Coast Aquifer (Chicot, Evangeline, Burkeville, and Jasper) were documented in TWDB GAM Run 16-024 (Wade, December 15, 2016). Please refer to Appendix G.):

Aquifer	County	Base Year	Desired Future Condition: Drawdown (2009 to 2070) (ft)	Modeled Available Groundwater (MAG) AF/yr						
				2010	2020	2030	2040	2050	2060	2070
Gulf Coast - Chicot	Austin	2009	39	1,300	1,300	1,300	1,300	1,300	1,300	1,300
Gulf Coast - Chicot	Grimes	2009	5	0	0	0	0	0	0	0
Gulf Coast - Chicot	Walker	2009	n/a	0	0	0	0	0	0	0
Gulf Coast - Chicot	Waller	2009	39	300	300	300	300	300	300	300
Gulf Coast - Evangeline	Austin	2009	23	19,998	19,998	19,998	19,998	19,998	19,998	19,998
Gulf Coast - Evangeline	Grimes	2009	5	2,999	2,999	2,999	2,999	2,999	2,999	2,999
Gulf Coast - Evangeline	Walker	2009	9	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Gulf Coast - Evangeline	Waller	2009	39	40,994	40,994	40,994	40,994	40,994	40,994	40,994
Gulf Coast - Burkeville	Austin	2009	23	0	0	0	0	0	0	0
Gulf Coast - Burkeville	Grimes	2009	6	0	0	0	0	0	0	0
Gulf Coast - Burkeville	Walker	2009	4	0	0	0	0	0	0	0
Gulf Coast - Burkeville	Waller	2009	40	0	0	0	0	0	0	0
Gulf Coast - Jasper	Austin	2009	76	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Gulf Coast - Jasper	Grimes	2009	52	10,998	10,998	10,998	10,998	10,998	10,998	10,998
Gulf Coast - Jasper	Walker	2009	42	15,972	15,972	15,972	15,972	15,972	15,972	15,972
Gulf Coast - Jasper	Waller	2009	101	300	300	300	300	300	300	300

Aquifer	County	Base Year	Desired Future Condition: Maximum Subsidence by 2070 from Estimated 1890 Conditions	Modeled Available Groundwater (MAG) AF/yr						
				2010	2020	2030	2040	2050	2060	2070
Gulf Coast	Austin	1890	2.83	22,298	22,298	22,298	22,298	22,298	22,298	22,298
	Grimes	1890	0.12	13,997	13,997	13,997	13,997	13,997	13,997	13,997
	Walker	1890	0.04	17,972	17,972	17,972	17,972	17,972	17,972	17,972
	Waller	1890	4.73	41,594	41,594	41,594	41,594	41,594	41,594	41,594

MAG values for the Gulf Coast Aquifer (Chicot, Evangeline, Burkeville, and Jasper) were documented in TWDB GAM Run 16-024 (Wade, December 15, 2016). Please refer to Appendix G.

Estimate of the Annual Amount of Groundwater Being Used within the District on an Annual Basis

Please refer to Appendix A.

Estimate of the Annual Amount of Recharge from Precipitation to the Groundwater Resources within the District

Please refer to Appendix B.

Estimate of the Annual Volume of Water that Discharges from the Aquifer to Springs and Any Surface Water Bodies

Please refer to Appendix B.

Estimate of the Annual Volume of Flow into the District and out of the District Within Each Aquifer, and Between Aquifers in the District

Please refer to Appendix B.

Estimate of the Projected Surface Water Supply within the District

Please refer to Appendix A.

Estimate of the Projected Total Demand for Water within the District

Please refer to Appendix A.

Water Supply Needs

The TWDB 2017 State Water Plan identifies water supply needs for water user groups County-other, Manufacturing, Mining, and San Felipe in Austin County; Mining and Steam Electric Power in Grimes County; Riverside, The Consolidated WSC, and Trinity Rural WSC in Walker County; County-other, Hempstead, Manufacturing, and Pine Island in Waller County. The District will continue to work with both Region G and H Regional Water Planning Groups in the identification of projected water supply needs. Please refer to Appendix A.

Water Management Strategies

The District continues to encourage conservation, water loss reduction, and reuse to meet the projected strategies of the TWDB 2017 State Water Plan. Please refer to Appendix A.

Water management strategies identified for water user groups within Austin, Grimes, Walker, and Waller Counties fall into one of the following categories (number of individual strategies):

- Municipal conservation (18)
- Expanded use of groundwater (13)

- Irrigation conservation (4)
- Industrial conservation (6)
- Water loss reduction (8)
- Carrizo aquifer development (4)
- Municipal water conservation (1)
- Gibbons Creek Reservoir expansion (2)
- Gulf Coast aquifer development (2)
- Industrial water conservation (6)
- Reuse – Bryan (2)
- Reuse – College Station (2)
- HCWC Permit amendment (1)

These specific water management strategies were considered and included in the overall preparation of this management plan as most of the water user groups are solely dependent on groundwater. The surface water dependent strategies were considered in relation to their expanded use or development of groundwater. These strategies are considered feasible by TWDB and the Regional Water Planning Groups to be included in the TWDB 2017 State Water Plan. The actual feasibility and usefulness of these, and other, strategies will not be realized until, or if, they are implemented by the individual water user group.

42 of 69 (61%) account for less than or equal to 100 acre-feet of water attributable to individual strategies, with an additional 14 strategies falling between 100 acre-feet and 1,000 acre-feet. Water management strategies are considered as part of the desired future condition development criteria in TWC 36.108(d)(2) the District participates in with GMA 14. These considerations contribute to the MAG values exceeding current production to accommodate existing and future groundwater users. The District continues to encourage conservation, water loss reduction, and reuse to meet the projected needs of the TWDB 2017 State Water Plan.

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 this 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.

Permits are reviewed individually and independently. The District reviews and analyzes any potential impacts to existing or future users of groundwater. The District requires the submittal of Phase I and Phase II hydrogeologic reports for non-exempt wells with an inside casing diameter of eight (8) inches or greater as part of the permit application process. In general, the Phase I report is intended to evaluate the impacts of pumping, such as drawdown, well interference, potential for measurable subsidence and other relevant impacts, using existing data

and the existing regional groundwater flow model of the area for the aquifer in which the well is to be completed. The Phase II report is intended to be a final report that relies on site specific data, information, test results and analyses. The District-provided guideline document sets standards and expectations for the investigations and reports. The District may exercise discretion in the application of the guidelines on an individual and site-specific basis in order to allow a practicable application of the guidelines while insuring a result yielding the information needed by the District to process the permit application. The data and analyses are used to address production limits, monitoring requirements, and permit conditions.

Production of groundwater in any manner, including volumes, rate, frequency, duration, or within a concentrated area, that causes the potential for measurable subsidence is prohibited. Controlling and preventing measurable subsidence will be addressed during review and processing of new, renewed, and amended permit applications. If numerical modeling, local hydrogeological conditions including subsurface clay content, aquifer testing or other reliable data demonstrate 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.

Management zones provide a best management practice to address potential impacts to the District. These management zones may be defined from groundwater availability model results, monitoring data, or other metrics measuring and evaluating potential impacts to the District. Ensuring that impacted entities coordinate their efforts to facilitate a balance between the highest practicable level of groundwater production and the conservation, preservation, protection, recharging, and prevention of waste of groundwater and control of subsidence in the management area is critical to the efficiency and benefit of the management zone. Organizing all entities to base and review the same information will further assist data collection, analysis, and permitting procedures to review potential impacts from proposed projects and assess cumulative impacts in the management zone. Using the best hydrogeologic and other relevant scientific data readily available, the Board by rule may create certain management zones within the District based on geographically or hydrogeologically defined areas, aquifers, or aquifer subdivisions, in whole or in part. Within the management zones the District may assess water availability, authorize total production, make proportional adjustment to permitted withdrawals, identify impact areas to standardize/centralize hydrogeologic report and application assessment and data gathering from proposed well(s) projects, or otherwise undertake efforts to manage the groundwater resources in a manner that is consistent with the District Act, Chapter 36. In creating management zones, the Board shall attempt to delineate zone boundaries that will promote fairness and efficiency by the District in its management of groundwater, while considering hydrogeologic conditions. Where practicable, the Board may consider the ability of the public to readily identify the boundaries of designated zones based on features on the land surface.

Chapter 36 provides explicit exemption from permitting and restrictions of wells drilled or operated solely for domestic use or for providing water for livestock or poultry. A District shall

provide an exemption if the well is located or to be located on a tract of land larger than ten (10) acres and drilled, completed, or equipped so that it is incapable of producing more than 25,000 gallons of groundwater a day. Individual wells, regardless of use, can readily create potential impacts expanding beyond the property owned or leased by the well owner or operator. Subdivisions create a unique issue where the cumulative impact should be considered and evaluation prior to plat approval. When the cumulative impact is not considered, the probability of localized impacts to an area increase substantially. Cumulative impacts such as drawdown, well interference, and subsidence diminish well production and damage the aquifer. Once these impacts are realized, the only solution available is tying into an existing water supplier or constructing a new water supply for the subdivision and area. Afforded this information and acknowledging the issue allows a proacting, preventative action pre-development compared to costly, reactionary response.

A GCD has no oversight or authority in the subdivision platting process. Instead, the District offers resources and expertise to the municipal and county authorities in their review process as requested. Cumulative impacts of individual wells or concentrated pumping in subdivision planning should be weighed against opportunities to connect with existing water suppliers or establishing centralized water supply distribution through various avenues such as a Municipal Utility District, Water Control and Improvement District, Special Utility District, Water Supply Corporation, Investor Owned Water Company, or other unique water service. Evaluating water supply alternatives during platting may identify the existence of short-term and long-term cumulative impacts and possible remedies to minimize such impacts. There are several reasonable alternatives for water supply available to planned subdivisions. Existing systems and water supply entities maintain water portfolios to provide statutorily-mandated service to their respective service area. Joining an established entity can alleviate start-up costs compared to creating a new entity. Creating a water supply entity for the subdivision may be more sensible for the area, providing greater flexibility, response, and accountability to solve needs and demands. Regardless of the method employed and ultimately approved, conducting an all-inclusive review of options enrich long-term success and viability of the subdivision and mitigation of impacts to the groundwater resources.

Under Texas Local Government Code Section 212.0101 and 232.0032, a municipal or county authority may require a person who submits a plat application for a subdivision for which the source of the water supply intended for the subdivision is groundwater (under the subdivision tract) to have attached to the application a statement from a Texas Professional Engineer or Professional Geoscientist certifying adequate groundwater is available for that subdivision. This platting requirement is discretionary with the municipality or county, but if the municipality or county exercise this authority, it must use the certification form and follow the content of TCEQ rule 30 TAC Section 230.0 – 230.11. The subdivision plat applicant also must submit the certification information to the Texas Water Development Board (TWDB) and any groundwater conservation district (GCD) whose boundaries include all or part of the subdivision. According to the Local Government Code, the information supplied to the TWDB and GCD would be useful in performing GCD activities, conducting regional water planning, maintaining the state's groundwater database, or conducting studies for the state related to groundwater. The TWDB and GCDs have no oversight in the subdivision process under the Local Government Code or TCEQ rule. Providing this layer of forethought in the design and development phase stands to greatly benefit and protect private property rights, balance the conservation and development of groundwater to meet the needs of this state, use the best available science in the conservation

and development of groundwater and provide for conserving, preserving, protecting, and recharging of the groundwater or of a groundwater reservoir or its subdivisions in or der to control subsidence, prevent degradation of water quality, or prevent waste of groundwater.

TCEQ rule 30 TAC Sections 230.1 – 230.11 consists of two pre-printed forms (a transmittal form and the groundwater availability certification form) and the instruction for completing the forms and certification. The substantive requirements of the certification under the rule include requirements for projected water demand estimates, general groundwater information, and for subdivision relying on individual wells on individual lots, site specific groundwater data including the results of aquifer tests and water quality analysis. A detailed availability analysis is required for a thirty-year period including a description of aquifer parameters, and drawdown and well interference analyses. A Professional Engineer or Professional Geoscientist must certify, based upon the information developed, that adequate groundwater is available from the underlying aquifer(s) to supply the estimated demand of the proposed subdivision. In cooperation and coordination with municipal and county government’s implementation of the groundwater availability certification requirement, the District encourages assessment of potential impacts, individually and cumulatively, of wells in a proposed plat. Review of general susceptibility to various impacts including, but not limited to, drawdown, subsidence, spring flow, and cumulative impacts are pertinent to the governing body’s policy development, decision-making, and the groundwater availability certification content requirements. Specific references include;

1. Section 230.7(b)(1-4) – Geologic and groundwater information gathered and considered in planning and designing the aquifer test should address potential impacts such as drawdown (individually and cumulatively), subsidence, spring flow where applicable. A recommended source of this information and impact analysis can be found in the District *Guidelines for Preparation of Hydrogeologic Reports for Submission in Support of Applications for the Permitted Use of Groundwater Phase I Report*. The Phase I report is intended to evaluate the impacts of pumping using existing data and the existing regional groundwater flow model of the area for the aquifer in which the well(s) is to be completed.
2. Section 230.8(c) – “The aquifer test must provide sufficient information to allow evaluation of each aquifer that is being considered as a source of residential and non-residential water supply for the proposed subdivision.” Emphasis and focus on the evaluation of potential impacts such as drawdown (individually and cumulatively), subsidence and spring flow are encouraged. The collection and review of this information in the planning state should provide clarity on the best practice (individual well or centralized distribution system) to implement and minimize costly alternative supply installation after the fact.
3. Section 230.8(c)(8) – To adequately demonstrate groundwater availability, review and analysis of potential impacts of the proposed subdivision is critical. A recommended source of this information and impact analysis can be found in the District *Guidelines for Preparation of Hydrogeologic Reports for Submission in Support of Applications for the Permitted Use of Groundwater Phase I Report*. This guideline document is intended to set standards and expectations for the investigations and reports to further inform review and analysis.
4. Section 230.8(d) – With consideration of additional information related to potential impacts related to proposed subdivisions as part of the plat application, the District will provide expertise to the review and assessment of potential impacts as requested by the

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municipal or county authority.

5. Section 230.10(b) – A critical consideration in groundwater availability determinations is the cumulative impact of wells over time and after full build out. Referencing and considering the cumulative impact will minimize likelihood of well interference, localized, drawdown, subsidence and the necessity of a centralized water supply distribution system to resolve these impacts in the future. Addressing pumping concentration prior to construction will significantly alleviate stress and pressure overall and to the property owner in the long run.
6. Section 230.10(c) & (d) – Defining aquifer parameters are vital to understanding the susceptibility to impacts in the project area. These parameters will assist the municipal or county authority to fully understand availability. A recommended source and approach to this information is the District *Guidelines for Preparation of Hydrogeologic Reports for Submission in Support of Applications for the Permitted Use of Groundwater Phase I Report*. Such an analysis will provide the extent drawdown will affect wells. It can also provide direct feedback to compare impact options between individual wells and a centralized distribution system.
7. Section 230.11(b) – Groundwater availability determination conditions cannot be understated. Reviewing criteria to understand the potential impacts at the plat design phase can significantly reduce time, effort and costs for construction and application. Prudent project development and best management practices ensure these considerations are at the forefront of discussion and evaluation. Further standardizing the review, data collected, and analyzed referencing or utilized the District *Guidelines for Preparation of Hydrogeologic Reports for Submission in Support of Application for the Permitted Use of Groundwater Phase I Report* criteria may be of great benefit for both the authority and developer alike.

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The District, as a resource in service to and full support of municipal and county authorities, is willing to offer any assistance to municipal or county authorities in their development, review, and assessment of subdivision plats and groundwater availability certification as requested.

Methodology for Tracking Progress

An annual report (“Annual Report”) will be created by the general manager and staff of the District and provided to the members of the Board of the District. The Annual Report will cover the activities of the District including information on the District’s performance in regard to achieving the District’s management goals and objectives. The Annual Report will be delivered to the Board each year coordinating collection of permitted pumping data, downloaded available drought information, and water level monitoring. A copy of the Annual Report will be kept on file and available for public inspection at the District’s offices upon adoption.

Actions, Procedures, Performance, and Avoidance for District Implementation of Management Plan

The District will implement the provisions of this management plan and will utilize the objectives of the plan as a guide for District actions, operations and decision-making. The District will ensure that planning efforts, activities and operations are consistent with the provisions of this plan.

The District has adopted rules in accordance with Chapter 36 of the Texas Water Code. The development of rules is based on the scientific information and technical evidence available to the District. Current rules are available under Appendix C and at:

<http://www.bluebonnetgroundwater.org/wp-content/uploads/2012/06/APPROVED-Bluebonnet-GCD-Rules-21-096.pdf>

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

Management Goals

1. Providing for the Most Efficient Use of Groundwater in the District

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 with the District in accordance with the District rules.

1.1 Performance Standard – The number of exempt and non-exempt wells registered by the District will be incorporated into the Managers Report submitted to the Board of Directors of the District at each regular meeting.

2. Controlling and Preventing the Waste of Groundwater in the District

2.1 Objective – 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.

2.1 Performance Standard – The District will include a discussion of the annual evaluation of the District Rules and whether any amendments to the rules are recommended to prevent the waste of groundwater in a report to the District provided to the Board of Directors at a regular meeting.

2.2 Objective – The District will provide information to the public on eliminating and reducing wasteful practices in the use of groundwater.

2.2 Performance Standard – The District will post and maintain an article or a link to an article relevant to the public on eliminating and reducing wasteful practices in the use of groundwater.

3. Controlling and Preventing Subsidence

3.1 Objective – Controlling and preventing subsidence will be addressed during the review and processing of new, renewed, and amended permit applications.

3.1 Performance Standard – If review results demonstrate potential subsidence, the District will implement actions ranging from reducing requested permitted pumping to including permit conditions imposing subsidence monitoring requirements and establishment of threshold limits that could result in reduced production based on monitoring results.

4. Addressing Conjunctive Surface Water Management Issues

4.1 Objective– The District will attend, either in-person or through recording, 75% of the Region G and Region H Regional Water Planning Group meetings.

4.1 Performance Standard– The minutes for all attended, either in-person or through recording, Region G and Region H Regional Water Planning Group meetings will be maintained at the District for a period of three (3) years from their accepted date. A report of all attended meetings will be given to the Board at the regular meeting.

5. Addressing Natural Resource Issues Affecting the Use and Availability of Groundwater or affected by the Use of Groundwater

Joint Planning in GMA 14

5.1 Objective– By attending GMA 14 meetings, there is the opportunity to participate in discussions, planning, and education concerning the interrelationship of groundwater with other natural resource issues. A District appointed representative will attend 75% of the GMA 14 meetings annually.

5.1 Performance Standard– The minutes for all attended meetings of GMA 14 will be maintained at the District for a period of (3) years from their accepted date. A report of all attended meetings will be given to the Board at the regular meeting.

6. Addressing Drought Conditions

6.1 Objective– Each month, the District will download available drought information, for the counties in the District, from available websites on the internet, such as <https://waterdatafortexas.org/drought>, etc..

6.1 Performance Standard– Quarterly, the District will make an assessment of the status of drought in the District and prepare a quarterly briefing for the Board of Directors. The downloaded maps, reports and information will be included with copies of the quarterly briefings and combined with results of groundwater monitoring data and permitted pumping data in the regular meeting of the Board.

7. Addressing Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, and Brush Control

Conservation

7A.1 Objective– The District will provide information relevant to public education

and awareness regarding groundwater conservation.

7A.1 Performance Standard – The District will post and maintain an article or a link to an article listed under water conservation on the District website.

Recharge Enhancement

This management goal is not applicable to the District as there is not a recharge enhancement program unique to the District.

Rainwater Harvesting

7C.1 Objective – The District will provide information relevant to public education and awareness regarding rainwater harvesting.

7C.1 Performance Standard – The District will post and maintain an article or a link to an article listed under rainwater harvesting on the District website.

Precipitation Enhancement

This management goal is not applicable to the District as there is not a precipitation enhancement program unique to the District.

Brush Control

This management goal is not applicable to the District as there is not a brush control program unique to the District. Brush control initiatives are focused by the Texas State Soil and Water Conservation Board and through the TWDB State Water Plan where applicable.

8. *Addressing the desired future conditions (DFC) of the groundwater resources in the District*

8.1 Objective – The desired future conditions established for the District were based on GMA 14 Northern Gulf Coast GAM Run 2. The model results include cell by cell estimates of groundwater elevations and drawdown for each year of the predictive period (2009 to 2070). To assess the desired future condition in the District, these model results will be compared annually to groundwater monitoring data that are available from the TWDB groundwater database.

8.1 Performance Standard – Each year, the District will download groundwater data from Austin, Grimes, Walker and Waller counties from the Texas Water Development Board groundwater database. The comparison of model results will be on a well-by-well basis for data that are available. 21 wells met the following comparison criteria for the Gulf Coast Aquifer: 1) the well was located within the District, 2) the TWDB database included data on the well's depth, and completion interval, 3) the well completion placed the well entirely within one model layer, and 4) the most recent groundwater elevation data from late 2010/early 2011 (the established starting point for drawdown

calculations). These 21 wells and pertinent data are summarized below. The data downloaded from the database will be compared to model results each year and presented at a regular meeting in the form of tables and graphs as appropriate. These comparisons will be supplemented by data and information related to drought conditions and permitted pumping data.

State Well Number	County	TWDB Aquifer Code	Well Depth (ft)	Depth to Top of Well Screen (ft)	Depth to Bottom of Well Screen (ft)	Year with Earliest Data	Year with Most Recent Data	Model Row	Model Column	Model Layer
5940707	Grimes	122CTHL	272	210	260	1948	2017	14	90	4
5948106	Grimes	122CTHL	358	316	343	1970	2017	15	90	4
5948111	Grimes	122CTHL	365	295	355	2009	2017	15	90	4
5948207	Grimes	122CTHL	430	382	420	2009	2017	16	91	4
5948405	Grimes	111ABZR	83	63	83	1997	2018	17	86	3
5948707	Grimes	111ABZR	78	59	78	1997	2018	20	86	2
5956301	Grimes	121EVGL	292	282	292	1970	2017	23	88	2
5964201	Waller	121EVGL	728	694	724	1956	2016	30	79	2
6025804	Grimes	122CTHL	153	138	153	1970	2018	11	105	4
6029707	Walker	122JSR	600	540	584	1985	2017	26	126	4
6057103	Waller	121EVGL	576	475	570	1930	2016	33	84	2
6057402	Waller	121EVGL	645	610	630	1977	2017	34	83	2
6057509	Waller	121EVGL	609	330	350	1985	2018	37	85	2
6604601	Austin	122JSR	119	105	119	1965	2018	22	51	2
6606614	Austin	121EVGL	850	764	830	1986	2018	32	65	3
6614204	Austin	121EVGL	118	110	118	1982	2018	35	57	1
6615905	Austin	121EVGL	462	320	452	1971	2018	45	63	2
6616407	Austin	112CHCT	165	147	165	1966	2018	45	67	2
6623401	Austin	121EVGL	824	60	190	1956	2018	47	57	1
6624801	Austin	121EVGL	610	586	606	1957	2012	57	62	2
6624805	Austin	121EVGL	725	530	702	1973	2012	56	62	2

Appendices

*Appendix A – Estimated Historical Water Use And 2017 State Water Plan Datasets:
Bluebonnet Groundwater Conservation District*

Appendix B – GAM Run 17-020: Bluebonnet Groundwater Conservation District Groundwater Management Plan

Appendix C – Rules of the Bluebonnet Groundwater Conservation District

Appendix D – Resolution Adopting the Management Plan

Appendix E – Evidence the Management Plan was adopted after notice and hearing

Appendix F – Evidence District coordinated development of the Management Plan with Surface Water Entities

*Appendix G – GAM Run 16-024 MAG: Modeled Available Groundwater for the Gulf Coast
Aquifer System in Groundwater Management Area 14*