Fort Bend Subsidence District

2025 District Plan

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Fort Bend Subsidence District
2025 District Plan

PURPOSE AND INTENT

It is the purpose and intent of the District Plan to establish policy in the areas of groundwater regulation, permits and enforcement and to establish District Regulatory Areas and regulatory requirements for each area.

The District Plan was developed with an overall goal to reduce groundwater withdrawals to no more than 40% of total water demand. The District Plan will be reviewed and may be amended as needed. Groundwater withdrawal causes subsurface compaction, which contributes to flooding and fault movement and damages wells and pipelines. The objective in the District is to reduce groundwater withdrawals that contribute to subsidence. In establishing these objectives, the District has taken into account the time and cost of introducing alternative water supplies. The District recognizes that the burden of controlling subsidence should be borne by all groundwater permittees. Although a single permittee's groundwater withdrawal may not be capable of causing severe subsidence problems, the total actions by all permittees can cause significant subsidence. Therefore, every permittee is responsible for managing their withdrawals to help contribute toward reducing subsidence. To achieve the objectives for each Regulatory Area, the District must have discretion in permitting groundwater withdrawals and setting disincentive fee rates as a means of achieving the plan's goals.

This District Plan prescribes ratios of groundwater withdrawal to total water demand. Nothing in this District Plan, however, should be interpreted to mean that a permittee is entitled to use groundwater in any amount merely because the Plan prescribes a ratio for that specific Regulatory Area. Each permittee will be granted a permit based on a review of that permittee's need for water, availability of alternative water supplies, and prior beneficial use without waste.

BACKGROUND

The Fort Bend Subsidence District (District) was created in 1989 by the State Legislature (Act of May 26, 1989, 71st Leg., R.S., ch. 1045 Tex. Gen. Laws 4251, codified as Chapter 8834, Special District Local Laws Code) as a conservation and reclamation district. The District was created "… to provide for the regulation of groundwater withdrawal in the district to prevent subsidence, which contributes to or precipitates flooding or overflow in the District, including rising water resulting from a storm or hurricane."

The District adopted its first District Plan in September 1990. The initial plan focused on the need for better data and called for additional groundwater monitoring and subsidence measurements within Fort Bend County.

Since the 1990 District Plan, the District has performed the following items:

- Collected water-level measurements in both the Chicot and Evangeline Aquifers in Fort Bend County
- Collected and analyzed water quality samples from wells in the two aquifers

- Collected land-surface elevations throughout the county, consisting of re-levelings in 1995 and 2000 and the development of five GPS elevation sites operated on a monthly schedule
- Established updated population and water demand projections through the year 2030
- Developed and recalibrated the Mod-flow groundwater model
- Developed and recalibrated four subsidence models (PRESS Sites)
- Developed baseline and various regulatory scenarios to determine the effects of groundwater regulation on the aquifers
- Assisted or participated in numerous other studies related to water issues in and around Fort Bend County, including the Region H Water Planning Group and Groundwater Management Area 14.

The District will continue to collect data and evaluate groundwater conditions in Fort Bend County and take necessary actions to meet the purpose for which it was created. The District reviewed the 2003 District Plan as part of a joint planning project from 2010 through 2012, and determined no changes in the plan are needed. The joint planning project updated population and water demand projections, groundwater models, subsidence models, and subsidence projections. This District Plan divides the District into two regulatory areas. The requirements contained within this District Plan are based on the most current data and studies on water demand, aquifer levels, and projected subsidence. The Plan provides permittees organizational flexibility in meeting these regulations.

GROUNDWATER REGULATION

This portion of the District Plan establishes policy for the District regarding groundwater regulation. These policies are designed to support the regulation of groundwater withdrawals to control subsidence on a regional basis. Because subsidence is a region-wide problem requiring solutions achieved through concerted efforts, the District will work with other political subdivisions in the region to implement this District Plan.

Permitting

The District may deny permits or limit groundwater withdrawals following the guidelines stated in the Act, the Rules of the District, and this District Plan. In determining whether to issue a permit or limit groundwater withdrawal, the District will weigh the public benefit against individual hardship, after considering all appropriate documentation and relevant factors including:

1. the purposes of the District Enabling Act,

2. this District Plan,

3. the quality, quantity, and availability of surface water or alternative water supplies at prices that are competitive with prices charged by suppliers of surface water in the District,

4. the economic effect on the applicant of a decision to issue or deny the permit, or of the permit term, in relation to the effect on subsidence that would result;

5. the applicant's compliance with this chapter or any district rule, permit, or order; and

6. all other relevant factors.

Permit Fees

The District's permit fees are intended to operate as an economic disincentive in order to regulate groundwater withdrawal. This District Plan establishes a permit fee structure that includes a base fee and a disincentive fee.

The District's permit fees are established for the purpose of achieving certain regulatory objectives and the reduction of groundwater withdrawals. All funds collected from permit fees will be used for regulatory purposes.

Base Fees: This fee is applied to all of a permittee's permitted groundwater withdrawals.

Funds obtained from collection of base fees are used to cover the costs of issuing permits and performing other regulatory functions of the District.

Disincentive Fees: In addition to the base fee, a disincentive fee will be applied to permitted groundwater withdrawals that exceed the limits established by this District Plan, including any limit established by a Groundwater Reduction Plan ("GRP").

The purpose of the disincentive fee is to create a financial incentive to encourage permittees to take steps to ultimately reduce groundwater use according to the schedule set forth in this District Plan. The disincentive fee can be avoided by reducing groundwater withdrawals through actions in compliance with milestones contained in a approved GRP. The disincentive fee is applied in each permit year that groundwater reduction requirements are not met.

Funds obtained from the collection of disincentive permit fees will be placed in a special account for the purpose of expediting reductions in groundwater withdrawal, the development of water conservation measures, and other alternative water supply strategies. The District's enabling legislation authorizes the use of these funds to provide grants or loans for purposes such as financing the design and construction of alternative source water treatment and transmission facilities. The District will also consider various alternative means, including coordination with other agencies, for the distribution of any such funds.

Regulatory Area Descriptions

The District is divided into two regulatory areas (Area A and Area B), described in detail below and pictured on the following map.

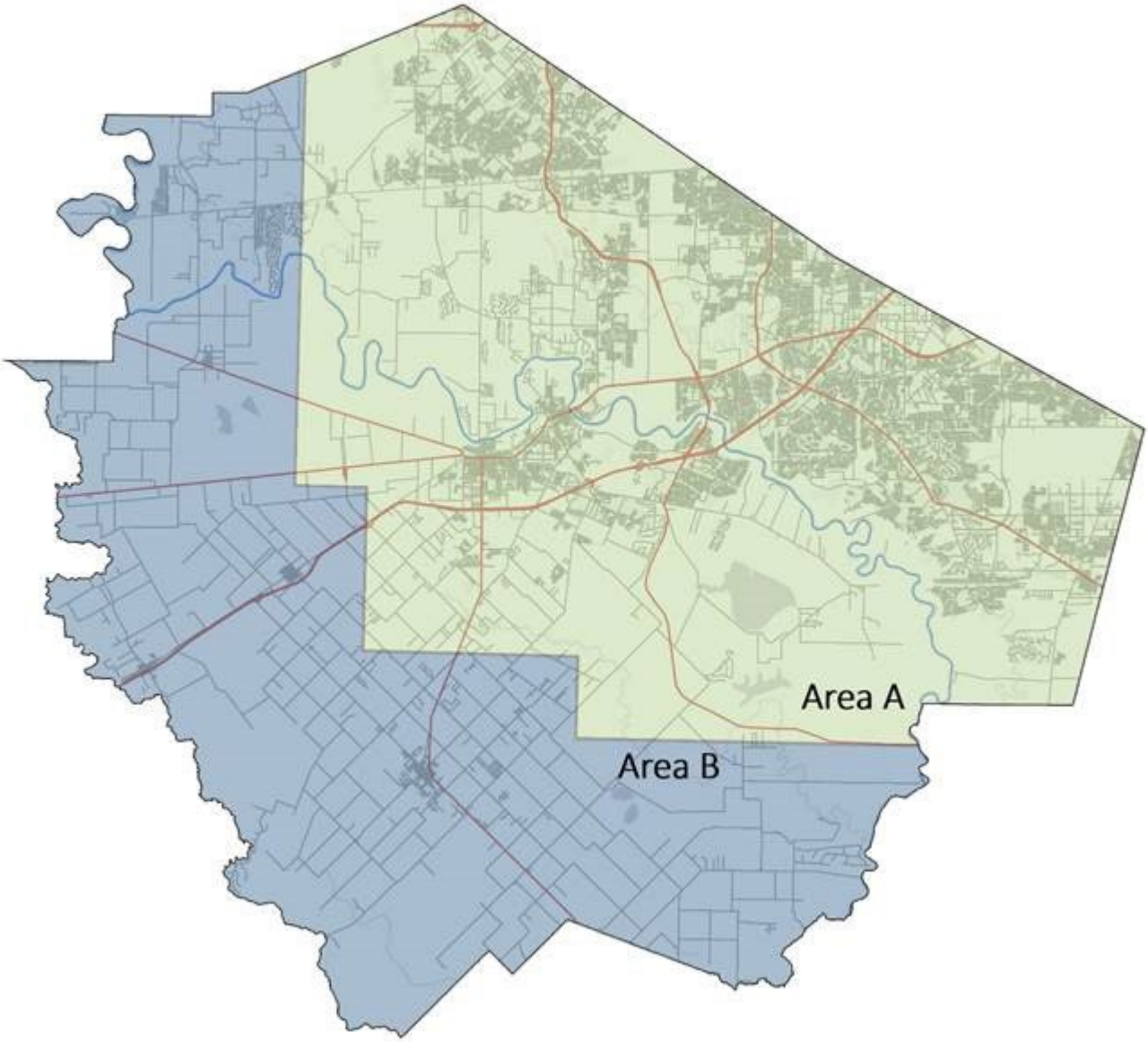
Regulatory Area A

- Beginning at the intersection of longitude 95 º 55’ 00” west and the Fort Bend/Waller County line follow this line of longitude south to the point at 29 º 32’ 30” north latitude.
- Thence, east along this line of latitude to the point at 95 º 52’ 30” west longitude.
- Thence, south along this line of longitude to the point at 29 º 27’ 30” north latitude.
- Thence, east along this line of latitude to the point at 95 º 45’ 00” west longitude.
- Thence, south along this line of longitude to the point at 29 º 25’ 00” north latitude.
- Thence, east along this line of latitude to the intersection of longitude 95 º 07’ 30” west and the Fort Bend/Brazoria County line.
- Thence, generally north and east, following the Fort Bend/Brazoria County line to the intersection of the Fort Bend, Brazoria, and Harris County boundaries.
- Thence, generally northwest, following the Fort Bend/Harris County line to the intersection of the Fort Bend, Harris, and Waller County boundaries.
- Thence, generally southwest, following the Fort Bend/Waller County line back to the intersection with longitude 95 º 55’ 00” west.

Regulatory Area B

- The remaining portion of Fort Bend County that lies outside of Regulatory Area A.

Regulatory Area Map



Regulatory Area Requirements

Regulatory Area A

1. Unconverted permittees shall begin a planning process to define acceptable methods necessary to meet the groundwater compliance requirements established within this District Plan. Several Groundwater Reduction Plans have been approved by the Board of Directors, and the District will continue to monitor implementation of those plans.

2. Two or more permittees may enter into contractual agreements to share costs or cooperate to achieve orderly reductions in total groundwater use and conversions to alternative water supplies. Permittees may join with or form new regional entities for the purpose of reducing groundwater withdrawal. Individual permittees will be exempted from groundwater reduction requirements as long as they remain participants of a group that achieves collective compliance with the regulatory area requirements.

3. A group of permittees operating under an approved GRP shall reduce and maintain their groundwater withdrawals to comprise no more than 70% of the group's total water demand. For permits beginning January 1, 2030, and thereafter, a group of permittees operating under an approved GRP shall reduce and maintain their groundwater withdrawals to comprise no more than 40% of the group's total water demand.

4. A permittee that is not operating under an approved GRP shall reduce and maintain its groundwater withdrawals to comprise no more than 40% of the permittee's total water demand.

5. A disincentive fee is applied to any groundwater withdrawals that constitute greater than 40% of a permittee's (or a group of permittee's operating under an approved GRP) total water demand if a permittee has not developed and received certification of a GRP or if a permittee is not in compliance with the reduction schedule found in Items 3 and 4 of this section or with the elements identified in their approved GRP.

6. When a permittee becomes a participant of an active GRP, the GRP Manager shall submit a plan for the new participant to convert to an alternative water supply. The new GRP Participant shall provide a plan detailing water conservation and efficiency measures to be implemented until alternative water supplies are made available.

Regulatory Area B

1. Unconverted permittees must begin developing groundwater reduction plans to define acceptable methods necessary to meet the groundwater compliance requirements established within this District Plan.

2. Two or more permittees may enter into contractual agreements to share costs or cooperate to achieve orderly reductions in total groundwater use and conversions to alternative water

supplies. Permittees may join with or form new regional entities for the purpose of reducing groundwater withdrawals. Individual permittees will be exempt from groundwater reduction requirements when they form a group that achieves collective compliance with the regulatory area requirements.

3. For permits beginning January 1, 2050 or later, a group of permittees operating under an approved GRP shall reduce and maintain their groundwater withdrawals to comprise no more than 70% of the group's total water demand.

4. For permits beginning January 1, 2035, or later, a permittee not operating under an approved GRP shall reduce and maintain its groundwater withdrawals to comprise no more than 40% of the permittee's total water demand.

5. A disincentive fee is applied to any groundwater withdrawals that constitute greater than 40% of a permittee's (or a group of permittee's operating under an approved GRP) total water demand if a permittee has not developed and received certification of a GRP or if a permittee is not in compliance with the reduction schedule found in Items 3 and 4 of this section or with the elements identified in their approved GRP.

Exemptions:

1. This plan's disincentive fee provisions and groundwater reduction requirements do not apply to exempt uses. Permits for irrigating agricultural crops are exempted from groundwater reduction requirements and disincentive fees set forth in the District Plan. However, all groundwater users are encouraged to conserve water and use best management practices to reduce groundwater withdrawals.

2. Permittees with a total water demand of 10.0 million gallons per year (MGY) or less are exempted from groundwater reduction requirements and disincentive fees until such time that an alternative water supply is available. When an alternative water supply is available to a site at any time following the groundwater reduction deadline applicable to that site's Regulatory Area, permittees under the 10.0 MGY exemption will be required to reduce their groundwater withdrawal to no more than 40% of their total water demand, unless they participate in and comply with an approved Groundwater Reduction Plan.

3. Groundwater withdrawn for the purpose of watering livestock may be exempted from groundwater reduction requirements and disincentive fees. Permittees may apply for this exemption as part of the regular permit process, and must demonstrate that the groundwater withdrawn will be used for watering livestock and that Fort Bend County has granted an agricultural property tax exemption to the land where the well is located and the place of use for the groundwater. All exemptions based on livestock usage will be considered during the regular, annual permitting process. Livestock exemptions are granted at the discretion of the Board of Directors and are not considered permanent exemptions.

4. A permittee that does not have an available alternative water supply, is not located in the service area of any regional water supplier, and presents an acceptable groundwater

conservation plan to the District may be exempted from that Regulatory Area's groundwater reduction requirements and disincentive fees. The groundwater conservation plan must be presented to the Board of Directors for approval as part of that permittee's permit renewal no less than once every five years. The plan must provide for an annual report to the District, and the Board of Directors may add requirements or adjust deadlines as needed to ensure maximum conservation is achieved. The District may, as part of that permittee's permit renewal consideration, determine that an alternative groundwater supply is available and therefore rescind the exemption and reduce the permit accordingly.

DISTRICT PLAN ADMINISTRATION

This section provides guidance for fulfilling milestone requirements in this District Plan. The District has developed a regulatory approach that provides a hierarchy of options to consider when evaluating how to reduce reliance on groundwater. Implementation of these options could significantly reduce a permittee's groundwater need while not requiring this reduction to come entirely from surface water.

The evaluation of strategies for meeting water demands involves an analytical process, which requires an integrated examination of the following options:

1. Efficient Management Practices -- the applicant should pursue all feasible measures to assure efficient management of the applicant's water supplies in order to minimize groundwater usage;

2. Water Conservation -- the applicant should consider the implementation of aggressive water conservation measures;

3. Surface Water Conversion -- the applicant should initiate implementation of surface water conversion.

4. Other Alternative Water Supply Strategies – the applicant is encouraged to investigate other alternative water supply strategies, including but not limited to reuse projects, to meet reduction requirements.

Water Conservation and Efficient Management Practices

Measurable reductions in groundwater withdrawals can be achieved through the use of water conservation measures and efficient management practices. Conservation measures and efficient management practices result in the overall reduction of total water demand, which reduces both the need for groundwater and alternative water supplies. The District encourages the use of any conservation measures and efficient management practices that reduce total water demand. The District may require permittees to submit water conservation and drought management plans with implementation measures, to preserve and protect groundwater resources within the District's boundaries. Measures that can be implemented include, but are not limited to:

1. Audits of facilities to determine what measures can be used to reduce water consumption such as irrigation schedules and installation of low-flow toilets or other water conservation devices.

2. Leak detection, water audits, and other efficient management practices that improve overall system accountability.

3. Installation of water-efficient appliances such as washers, dishwashers, etc.

4. For municipal users, rebate programs for installation of low-flow toilets, low water use appliances, or retrofit kits that include items such as low-flow shower heads, faucet aerators, shut-off valves, flow restrictors, and toilet leak detection dye tablets.

5. Adopting educational programs promoting water conservation and efficient water use.

6. Education of the public through water conservation pamphlets.

7. Pricing policies that discourage excessive and wasteful water use practices.

Surface Water Conversion and Other Alternative Water Supply Strategies

Reductions in groundwater withdrawals will be achieved through surface water conversion or other alternative water supply strategies, including but not limited to reuse, use of treated effluent, and desalinated water. Conversion to alternative water supplies meets the District's requirements for reducing groundwater withdrawals to a certain percent of total water demand. All alternative water supplies must be metered in order to satisfy the District's groundwater reduction requirements.

Groundwater Reduction Plans

Permittees with a total water demand greater than 10 million gallons per year may avoid disincentive fees by submitting and receiving certification of a GRP, provided they comply with the groundwater reduction goals and other milestones in that plan. Permittees eligible to submit Groundwater Reduction Plans must submit GRPs for groundwater reductions in compliance with the deadlines in this District Plan. All GRPs must, at a minimum, include details of the strategies and steps necessary to achieve the groundwater reduction requirements, as previously stated.

Permittees not otherwise exempt may avoid disincentive fees through certification of a GRP.

Minimum requirements for an acceptable GRP include:

1. Identification of current and projected total water demand

   - The data must be from a source agreed upon by the District and the permittee
   - Projections must be for a time period consistent with the Plan's requirements, and extending at least 10 years beyond the conversion deadline.
   - Reasons detailing significant projected increases or decreases in groundwater total water demand

2. Plans for groundwater reduction:

   Option 1 – Conversion to alternative water supplies

   - Definition of infrastructure requirements to meet the permittee's projected total water demand
   - Timetable showing what infrastructure will be constructed by specific dates to meet projected requirements
   - Explanation of how infrastructure costs will be financed
   - Identification of source and amount of alternative water supply and water provider
   - Evidence (executed contractual agreement or financial commitment) that the water supplier has sufficient water supplies or rights and is committed to meet the permittee's present and projected demands
   - Preliminary engineering report of the proposed facilities to be constructed through the year 2014, including a description of the proposed project and area maps.
   - Conceptual schematic plans of the proposed facilities to be constructed for the year 2025 requirements (for Regulatory Area A) and for the year 2050 (for Regulatory Area B).

   Option 2 – Conservation

   - Evidence of the maximum total water demand for a 12-month period between January 1, 2005, and December 31, 2008. For any permittee that chooses this option, the maximum total water demand selected shall be used as the total water demand for all District Plan calculations.
   - Timetable showing what conservation measures will be implemented by specific dates to meet projected requirements.
   - A schedule of the amount of groundwater to be withdrawn each year of the plan including the planned groundwater withdrawal reductions.
   - Identification of source and amount of alternative water supply and water provider, if any, as needed to meet the groundwater withdrawal limits.
   - Conceptual schematic plans of the proposed facilities to be constructed for the year 2025 requirements (for Regulatory Area A) and for the year 2050 (for Regulatory Area B).

3. Specific details of any conservation measures or efficient management practices to be implemented.

4. Description of how over-conversion credits or water conservation credits would be used by the permittee (or group of permittees).

5. Other information reasonably necessary for an adequate understanding of the project.

Permittees must select either Option 1 or Option 2 at the time they submit their Groundwater Reduction Plan. Plans submitted under Option 1 may include an increase in groundwater withdrawals as total water demand increases as long as the groundwater withdrawals do not exceed the designated ratio to alternative water supplies. A permittee selecting Option 1 may include water conservation measures for all or a portion of the wells included in that GRP. Plans submitted under Option 2 are not required to include alternative water supplies as long as the total annual amount of groundwater withdrawn meets the designated reduction percentages.

- A permittee operating under an approved GRP shall, no later than the conversion deadline established for that Regulatory Area or, for a permittee establishing a new GRP, no later than 15 years after the District originally certifies the GRP, be required to reduce and maintain their groundwater withdrawals to comprise no more than 40% of the permittee's total water demand. Beginning with the first permit renewal one year after a GRP is approved and continuing each year thereafter, the GRP manager must, as part of the renewal application, provide a report on the GRP's status. The report must provide details on the achievement of the GRP goals, including:identification of any substantive changes to the infrastructure requirements to meet water demand;
- status of timing of projects and planned conversion;
- identification of any changes to funding sources or contract status; and
- status of alternative source water availability as planned.

The District may request additional information from the GRP manager as a condition of permit renewal.

Over-Conversion Credits

Over-conversion credits may be used to facilitate the accomplishment of conversion. The Board of Directors adopted, by resolution, an Over-Conversion Credit Policy, which establishes a uniform policy and procedure governing the issuance and redemption of over-conversion credits. District staff and consultants evaluated and modeled a proposed over-conversion scenario by using the District's groundwater model and subsidence PRESS models and have determined that the modeled over-conversion scenario, which included a gallon-for-gallon over-conversion credit, resulted in a net benefit in terms of a reduction in subsidence.

The over-conversion credit policy allows entities to reduce groundwater withdrawals and convert to alternative water supplies (including metered reuse) in excess of the conversion requirements in exchange for credits that could be used to offset future under-conversions.

Water Conservation Program Credits

In October of 1999, the District began sponsoring fifth-grade students in a water conservation program entitled “Learning to be WaterWise.” The award-winning program is a combination education and plumbing retrofit program implemented in local school districts utilizing a specialized water conservation resource action program that includes teacher curriculum and resource materials, and a student kit containing plumbing retrofit devices.

As a means of encouraging water conservation and generating support for the WaterWise program, District staff has evaluated the concept of establishing a water conservation credit program in which entities that sponsor students in the WaterWise program would receive a water conservation credit certificate worth a certain amount of groundwater based on the number of students sponsored (84,000 gallons per student sponsored).

APPENDIX A: DEFINITIONS

"Act" means District's enabling legislation (Chapter 8834, Special District Local Laws Code).

"Alternative Water Supply" means metered water from any source that meets the regulatory requirements of the District Plan, including but not limited to: surface water, reuse water, treated effluent, desalinated water, or water from a public water supply. Water obtained from any supplier that is in compliance with an approved groundwater reduction plan shall be considered an alternative water supply. Groundwater may only be utilized as an alternative water supply when it is provided as part of an approved groundwater reduction plan. Groundwater withdrawn from any county outside the District does not qualify as an alternative water supply unless the permittee can demonstrate that the groundwater withdrawals will not cause groundwater level declines or subsidence within the District.

"Regulatory Area" means a geographical area designated by the Board in which regulatory policy will be applied.

"Board" means the Board of Directors of the Fort Bend Subsidence District.

"Conservation" means water saved through efficient practices and technology.

"Contractual Agreement" means the entire agreement made between the parties where one party agrees to provide a specified amount of alternative source water to another for a specified period of time.

"District" means the Fort Bend Subsidence District.

"GRP" means Groundwater Reduction Plan.

"GRP Manager" means the entity responsible for the aggregate permit that allows groundwater withdrawals by the GRP Participants and provides alternative water supplies to the GRP Participants.

"GRP Participant" means any entity that, through binding contracts, agrees to abide by the requirements of the GRP and this District Plan, and allows the GRP Manager to add the entity's permits to the GRP Manager's aggregate permit.

"Groundwater" means water located beneath the earth's surface, but does not include water produced with oil in the production of oil and gas.

"Livestock" means cattle, horses, mules, asses, sheep, goats, llamas, alpacas, exotic livestock, and hogs.

"Over-Conversion Credit" means a credit issued by the District to a permittee (or group of permittees) who reduces groundwater pumpage beyond District requirements, redeemable pursuant to District policies.

"Permittee" includes any person (see below) to whom the District issues a water well permit allowing the withdrawal of a specified amount of groundwater for a designated period of time. Permittee may also include a group of individual entities, within the same regulatory area that have contracted together to operate under a single permit in order to meet groundwater reduction requirements.

"Person" includes corporation, individual, organization, government or governmental subdivision or agency, business trust, estate, trust, partnership, association, or any other legal entity.

"Preliminary Engineering" means the amount of engineering necessary to define the infrastructure needs of the project, to determine the feasibility and projected construction timetable of the project, and to establish reliable cost estimates. The requirement of preliminary engineering is not intended to include preliminary construction plans for the entire submittal. However, that level of detail could be required for specific components. The District will make the final determination of whether a proposed GRP meets the definition of preliminary engineering.

"Subsidence" means the lowering in elevation of the surface of land by the withdrawal of groundwater.

"Total Water Demand" means: for permittees that select Option 1 for their Groundwater Reduction Plan, the amount of groundwater, surface water, and other alternative water supplies being utilized by a permittee to meet annual water needs and for permittees that select Option 2 for their Groundwater Reduction Plan, the maximum amount of groundwater, surface water, and other alternative water supplies actually utilized by the permittee to meet annual water needs for a 12-month period between January 1, 2005 and December 31, 2008.

"Water Conservation Program Credit" means a credit issued by the District for sponsorship of students in the District's water conservation program, redeemable pursuant to District policies.

"Well" means any excavation, facility, device or method that could be used to withdraw groundwater.

"Withdraw" means the act of extracting groundwater by any method.