

NORTH FORT BEND WATER AUTHORITY
INTEGRATED WATER MANAGEMENT PLAN
FOR GROUNDWATER REDUCTION PLAN (GRP) PARTICIPANTS

BACKGROUND

The North Fort Bend Water Authority (the “Authority”) was created by the 79th Legislature in May 2005 to facilitate compliance with the Fort Bend Subsidence District’s (the “Subsidence District”) groundwater reduction mandates by creating a viable single entity to acquire, develop, and deliver a long term supply of potable alternative water to water users within the Authority’s boundaries. The mandates are outlined in the Subsidence District’s 2003 Regulatory Plan and are intended to reduce the region’s dependence on groundwater in a phased reduction plan, to minimize the risk of future subsidence, and to enable the aquifers that serve the region to recharge.

The Subsidence District’s 2003 Regulatory Plan required the Authority (located in Fort Bend County Regulatory Area “A”) to convert 30% of the water usage within its boundaries to an alternative water supply such as surface water by 2014 (which was successfully completed) and to convert 60% by 2025. If the 60% conversion requirement by 2025 is not met, a penalty fee will be imposed on all Authority Groundwater Reduction Plan Participants (the “GRP Participants”). This disincentive fee is currently \$6.50/1,000 gallons and increases periodically. In order to secure the necessary alternative water supply, the Authority entered into a long-term surface-water contract with the City of Houston (the “City”).

While this contract secured the source of the alternative water supply, this did not solve the challenge of getting that water to the Authority’s approximately 141 square miles. To bring additional surface water to the neighborhoods within the Authority, the Authority and other regional water entities have partnered together to construct several new infrastructure projects, including the Northeast Water Purification Plant (“NEWPP”), the Surface Water Supply Project (“SWSP”), and the Luce Bayou Inter-basin Transfer Project (“LBITP”). The Authority is also expanding the delivery water lines within the boundaries of the Authority with the 2025 Water Line Project.

Infrastructure costs alone already comprise over 75% of the Authority’s budget and these costs are paid for through the NFBWA water fee for the GRP Participants. Water reuse and water conservation will reduce groundwater usage, reduce the effects of land subsidence, and help NFBWA GRP Participants avoid paying the Subsidence District’s disincentive fee.

This Integrated Water Management Plan (“Water Plan”) outline has been designed to assist Authority GRP Participants evaluate the feasibility of alternative water resources and water conservation strategies. The Water Plan is currently required of all GRP Participants requesting inclusion in the NFBWA through contract. In addition, the NFBWA will be requiring all entities with new well permits or annexation requests to complete a Water Plan as part of the request.

The information collected as part of this Water Plan will assist the Authority in determining if there are opportunities for reclaimed water usage within our boundaries and identifying potential opportunities for collaboration. In addition, this information will be used to better understand upcoming developments to refine overall water demand projections for our GRP Participants and associated alternative water requirements.

The Water Plan is comprised of the following sections and attachments:

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Attachment 3.B: Current Land Plan

Section 5 Attachments

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Attachment 5.B: Wastewater Flows

Attachment 5.C: Reuse Feasibility Analysis

Section 6 Attachments

Attachment 6.A: Landscape Architecture Plan

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SECTION 1 GENERAL INFORMATION

Participant Legal Name: _____

Date of Creation: _____

Is this an annexation into a District? _____

City or City ETJ: _____

Participant Type: Retail Utility
 Private Well Owner / Industrial User
 Other: _____

SECTION 2 CONTACT INFORMATION

Date Form Completed: _____

Main Contact Name: _____

Company: _____

Role Within Development: _____

Phone Number: _____

Email: _____

Developer: Name: _____
Company: _____
Email: _____

District Engineer: Name: _____
Company: _____
Email: _____

District Operator: Name: _____
 Company: _____
 Email: _____

District Attorney: Name: _____
 Company: _____
 Email: _____

SECTION 3 DEVELOPMENT

Year Development Began / Planned to Begin: _____
 Total Acreage of Development*: _____
 Percentage of Land Developed to Date*: _____

** For annexation tracts only consider area to be annexed.*

Land Use	Approximate Acreage of Land Area at Build Out
Single Family Residential	
Multi-Family Residential	
Commercial	
Industrial	
Community Areas (Parks, Golf Course, etc.)	
Non-taxable Areas (Churches, Schools, etc.)	
Detention	
Other (_____)	

Submit with this form:

Attachment 3.A: Provide a development schedule by year from current connection count as equivalent single-family connections (ESFC) to anticipated ESFCs at ultimate build out.

Attachment 3.B: Current land plan.

SECTION 4 WATER USAGE

Projected Average Annual Water Usage at Build Out: _____ MGD

Provide a description of how projected water usage was determined:

Current Water Sources:
(select all that apply)

Number of Water Plants: _____

- Well for Potable Water (No. of Wells: _____)
- Irrigation / Amenity Lake Fill Well (No. of Wells: _____)
- Surface Water Connection
- Water Reuse
- Purchase (From: _____)
- Other: _____

Projected Water Sources at Build Out:
(select all that apply)

Number of Water Plants: _____

- Well for Potable Water (No. of Wells: _____)
- Irrigation / Amenity Lake Fill Well (No. of Wells: _____)
- Surface Water Connection
- Water Reuse
- Purchase (From: _____)
- Other: _____

Comments:

Interconnects:

<u>Current</u>	<u>Future</u>	<u>Regular</u>	<u>Emergency</u>	<u>Connected To</u>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

SECTION 5 WATER REUSE FEASIBILITY

5.1 Calculating the Potential Quantity of Reclaimed Water

Provide information below on existing and planned wastewater treatment plants that serve or will serve your development.

Wastewater Treatment Plant Facility Name	Current Capacity (MGD)	Ultimate Capacity (MGD)	Joint Facility?*	Existing / Future?
1.				
2.				
3.				

* If a wastewater treatment plant is a joint facility, what other entities participate or will participate:

Comments:

Submit with this form:

Attachment 5.A: Annotated map of the development showing: i) locations of the wastewater treatment plants that serve the development; and ii) locations of detention ponds and amenity lakes.

Attachment 5.B: Tables for historical wastewater flows (if applicable) and projected wastewater flows at build out. Provide calculations for anticipated flows available for reuse.

5.2 Identification of Reclaimed Water Uses and Users

The following list is intended as a guide for opportunities that may be available within your development for reuse. The below opportunities are not required to be analyzed for feasibility. Identify any potential opportunity that exists below, even if you believe it's not feasible for the development.

Included in Water Service Area:

Type	Included in Water Service Area?	Approximate Land Area at Build Out (Acres)	Comments
<i>Amenity Lakes</i>			
<i>Amenity Fountains</i>			
<i>Irrigation of Public ROWs, Parks or Trails</i>			
<i>Golf Course (public or private)</i>			
<i>Crop Production</i>			
<i>Public Schools, including athletic fields</i>			
<i>Industrial Facilities</i>			

5.4 Reuse Feasibility

The NFBWA encourages water reuse and provides financial incentives for GRP Participants that develop water reclamation systems. The NFBWA provides a credit for water reuse by GRP Participants from systems owned by the Participant. The NFBWA also provides a reduced water rate for water reuse for Participants that have partnered with the NFBWA to construct water reclamation facilities.

Up to 100% of the costs associated with water reclamation facilities and distribution piping may be reimbursable by the TCEQ for developers who meet the criteria for and comply with applicable provisions of Title 30 Texas Administrative Code (TAC) Chapter 293 Subchapter E – Issuance of Bonds. There are many grant and funding opportunities available for water reclamation systems. Examples of funding opportunities include, but are not limited to, the Clean Water State Revolving Fund (CWSRF) and WaterSMART Water and Energy Efficiency Grants.

Although initial construction of a development is the easiest and most practical time to install distribution piping, initially there will not be enough wastewater production to fill pipes sized for the ultimate build out of a development. In order to allow installation of purple pipe at the most cost-effective time, a water phasing plan is advised. A water phasing plan may include using an interconnect with a neighboring municipal utility district that has reclaimed water or using potable water until reclaimed water is available.

Submit with this form:

Attachment 5.C: Analysis of the feasibility of reuse for your development including the methodologies, calculations, and sources used for the analysis. The analysis should include, but should not necessarily be limited to, the following:

- Selection of uses and users of reclaimed water.
- Estimated area required for infrastructure.
- Identification of potential routes for reclaimed water distribution.
- Cost estimate.
- Economic feasibility for installing the reuse infrastructure. In addition to the retail utility rate for water, you should consider the following NFBWA rates and credits in your calculations:

Rate Type	Current Rates/ 1000 Gallons
District-Owned Reuse	\$0.75 credit *
Groundwater	\$4.60 **
Surface Water	\$4.95 **

Notes:

* The NFBWA does not charge for water reuse from systems owned by GRP Participants and offers a \$0.75 / 1000 gallon credit to the District until the earned credit covers the cost of the reuse infrastructure.

** These are the current projected rates that will be effective beginning in 2023.

SECTION 6 ALTERNATIVE WATER SAVING METHODS

Methods other than reuse water should be assessed when planning a community to achieve water savings. The plant palette, stormwater management, high quality landscape irrigation equipment, and community-based efforts that assist in conserving water can be implemented upfront to help with long term water savings.

6.1 LANDSCAPE ARCHITECTURE

Appropriate plant and irrigation equipment selection can both reduce water usage and long-term maintenance and operational costs. Native and adaptive plants that are suitable to Fort Bend County will reduce long term water costs and maintenance costs (due to their adaptability). Examples include:

- a. Use native and adaptive plants in all common areas (community centers, playgrounds, or other public spaces) and in residential landscaping.
- b. Use improved turfgrass varieties (such as bermudagrass, etc.) that require less water than common St. Augustine.
- c. Install central control irrigation controllers with master valves and flow sensors for common space irrigation to allow maintenance and management to detect leaks right away, and schedule irrigation occurrences with current and projected water needs based on environmental parameters.
- d. Ensure residential irrigation systems are installed in compliance with Texas Commission on Environmental Quality Chapter 344 Landscape Irrigation Regulations.
- e. Modify Deed Restrictions and Homeowner Association By-Laws to promote native and adaptive plants, less turfgrass requirements, and promotion of rainwater harvesting cisterns.
- f. Provide Educational Signs along Walking Paths in the Community that illustrate the names of native and adaptive plants.
- g. Rebate or incentivize programs for native and adaptive plant installation at homes.

Submit with this form:

Attachment 6.A: Discussion of sustainable landscape architecture methods/features to be incorporated into the development. Opportunities are not limited to the above list.

6.2 COMMUNITY-BASED WATER CONSERVATION INITIATIVES

The Authority created the Larry's Toolbox Water Conservation Program (the "Program") in 2016 to assist in meeting water reduction goals. As part of the Program, the Authority has created several different conservation initiatives for Program Participants. Participants choose to enroll in the initiative(s) they want to implement within their boundaries. For each initiative a Participant enrolls in and successfully implements, the Participant receives a designated number of points toward the incentive goal. The Program is voluntary; there is no obligation to implement any of the initiatives in the Program.

If a Participant receives the number of points required to meet the Incentive Goal, as outlined in the Larry's Toolbox Program Guide, they will receive a rebate for their groundwater pumpage and surface water delivery the following year in the amount of \$0.10 per 1,000 gallons of water. The rebate is based on that Participant's reported usage for the applicable usage period.

Initiatives in the Program currently include:

- W.I.S.E. Guys Resident Irrigation Evaluations;
- Customer Water Conservation Rebates;
- High Water User Notifications;
- Conservation Information;

- Native and Adaptive Plant Outreach;
- Homeowner Association/Golf Course Irrigation System Evaluation and Water Budget;
- Effective Tiered Water Rates;
- Efficient Appliance Giveaway;
- Smart Technology;
- Irrigation Permits; and
- Other Water Conservation Programs.

Is your development / District interested in learning more about the Larry's Toolbox Water Conversation Program?

Yes

No

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