

Water Conservation Plan

for

**San Jacinto River Authority
Woodlands Division**

Prepared by

San Jacinto River Authority

Adopted: March 27, 2014

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Table of Contents

<u>Section</u>	<u>Page</u>
Section 1. Introduction.....	1-1
Section 2. Utility and Service Area Description.....	2-1
2.1 Utility Description.....	2-1
2.2 Service Area Description.....	2-2
Section 3. Water Conservation Plan.....	3-1
3.1 Woodlands Division 5- and 10-year Water Conservation Target Goals.....	3-1
3.2 Water Conservation Methods.....	3-1
3.2.1 Metering and Record Management.....	3-2
3.2.2 Leak Detection, Repair, and Minimization of Conveyance Losses.....	3-2
3.2.3 Recycling and Reuse.....	3-2
3.2.4 Rate Structure.....	3-3
3.2.5 Conservation Coordination(s).....	3-3
3.2.6 Conservation Stakeholder Group.....	3-3
3.2.7 Contractual Requirements for Customer Water Conservation Plans.....	3-3
3.2.8 Customer Conservation Plan Guidance;.....	3-4
3.2.9 Customer Reporting Requirements.....	3-4
3.2.10 Public Information and Education.....	3-4
3.2.11 Awards and Recognition Program.....	3-5
3.2.12 Encouraging Customer Conservation Practices.....	3-5
3.2.13 Implementation, Enforcement, Coordination with RWPG, and Updating of the Plan.....	3-6

Tables

Table 2-1. 2012 Groundwater Production.....	2-3
Table 2-2. 2012 Reuse Production.....	2-3

Figures

Figure 1-1. Watershed Area and Facility Locations.....	1-2
Figure 2-1. Woodlands MUDs.....	2-5
Figure 2-2. Woodlands Division Water Distribution System.....	2-6
Figure 2-3. Woodlands Division Wastewater Infrastructure.....	2-7

Appendices

Appendix A – Water Utility Profiles

Appendix B – Resolutions Passed by SJRA, Transmittal Letter to Region H RWPG

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Section 1. Introduction

In 1996, severe drought conditions affected every region of the State. Water systems throughout the State were forced to cope with water shortages or system capacity problems. In response to the 1996 drought, the 75th Texas Legislature enacted Senate Bill 1, which directed the State to take a regional approach to water planning. One of the provisions of the legislation required the Texas Commission on Environmental Quality (TCEQ) to adopt rules requiring wholesale and retail public water suppliers to develop water conservation and drought contingency plans.¹

Water conservation and drought contingency plans work together to help Texans manage short-term and long-term water shortages. The goal of a water conservation plan is to achieve lasting, long-term improvements in water use efficiencies using strategies to reduce the amount of water withdrawn from a particular source, and to ensure that the water withdrawn is used in an efficient manner. Drought contingency plans are short-term in nature, using temporary supply and demand management measures in response to temporary and potentially recurring water shortages and other emergencies.

The San Jacinto River Authority (SJRA), as a water right holder and wholesale water supplier, is required to submit a Water Conservation and Drought Contingency Plan to the TCEQ and Texas Water Development Board (TWDB). SJRA was created by the Texas Legislature in 1937 to:

“Provide water for domestic, municipal, commercial, industrial and mining purposes within and without the watershed of [the San Jacinto River], including water supplies for cities, towns and industries, and in connection therewith to construct or otherwise acquire water transportation, treatment and distribution facilities and supplemental sources of water.”²

The SJRA service area includes all of Montgomery County and portions of Waller, Grimes, Walker, San Jacinto, and Liberty Counties (Figure 1-1). The SJRA also serves customers in the Houston area and is authorized to operate in east Harris County through an agreement with the City of Houston.

SJRA is governed by a seven-member board. The General Manager oversees approximately 145 employees and all facilities across four divisions: Lake Conroe, Highlands, Groundwater Reduction Plan (GRP), and The Woodlands Divisions. The following is provided as the Water Conservation Plan (including utility description, service area description, and customer data) for the Woodlands Division (the Division). The Division’s Drought Contingency Plan is provided under separate cover.

¹ Senate Bill 1, 75th Legislature, Section 12.1272 of the Texas Water Code.

² House Bill No. 832, 45th Legislature, Regular Session, Austin, TX, 1937.

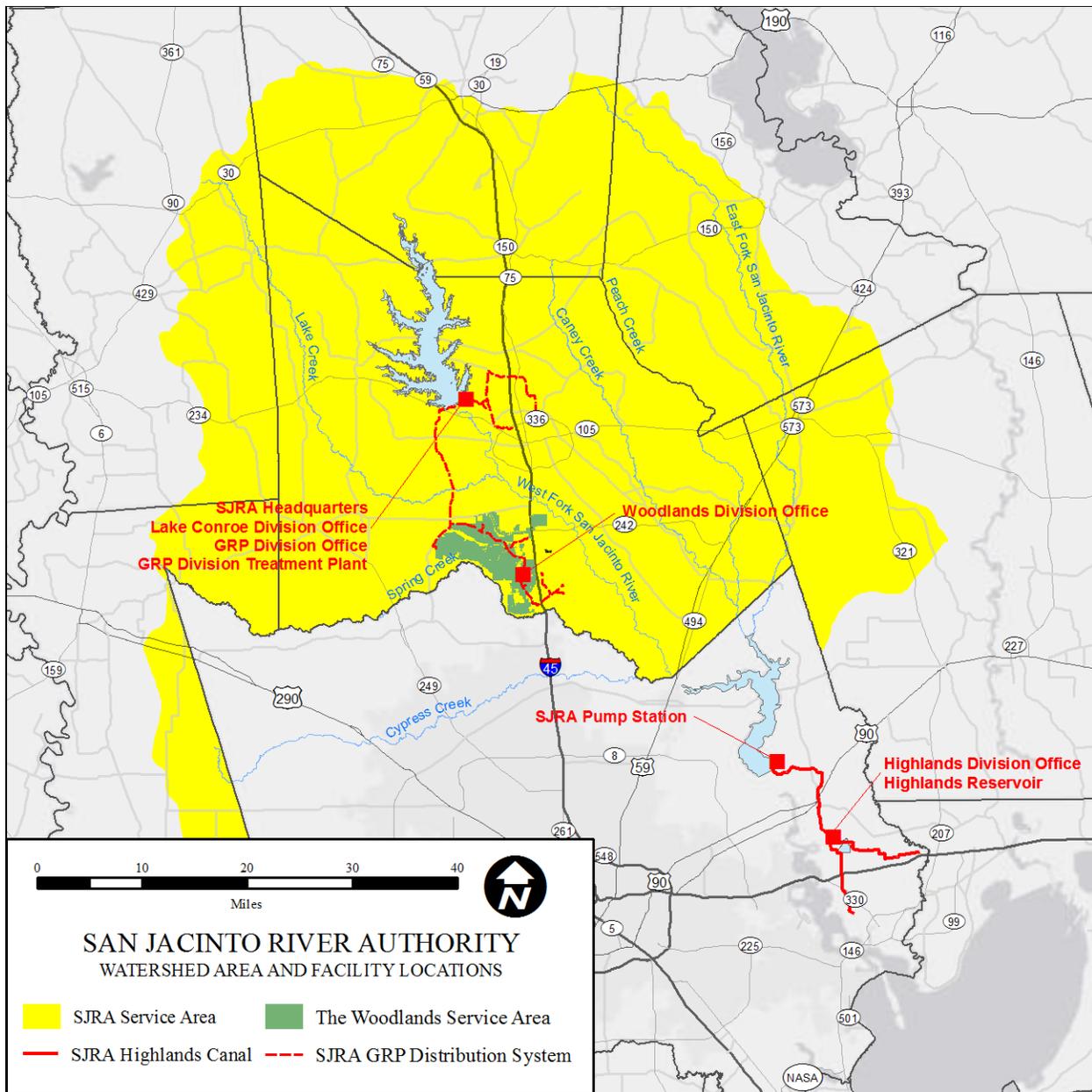


Figure 1-1. Watershed Area and Facility Locations

Section 2. Utility and Service Area Description

2.1 Utility Description

The Division currently provides its customers with water on a wholesale basis from water generated by 38 groundwater wells within the Evangeline and Jasper formations of the Gulf Coast Aquifer. SJRA is currently authorized by Lone Star Groundwater Conservation District (LSGCD) to produce up to 20,479 acre-feet per year (ac-ft/yr) from these wells. Water is disinfected at five water treatment plants and conveyed to customers through a series of potable distribution pipelines. The Division also provides wholesale wastewater service to customers through a wastewater collection system and three wastewater treatment plants.

In 2004 SJRA was granted 14,944 ac-ft/yr of water rights associated with groundwater based effluent return flows from its three wastewater treatment plants in The Woodlands, within the San Jacinto River Basin (Permit 5809). A portion of this return flow is allowed to convey through streams to Lake Houston where it is diverted by SJRA to serve its customers in southeast Harris County. Customers of the Division also utilize indirect reuse through Permit 3960 (held by The Woodlands Land Development Company and Sequoia Golf Woodlands, LLC).

SJRA operates Lake Conroe, one of two major surface water supply reservoirs located in the San Jacinto River Basin. Completed in 1973, Lake Conroe is owned by SJRA and the City of Houston. SJRA owns one-third and the City of Houston owns two-thirds of the total 100,000 ac-ft/yr permitted water rights from the lake under Certificate of Adjudication (COA) 10-4963. The SJRA's water right is permitted for multiple uses. Lake Houston, which is owned by the City of Houston, is the other surface water supply reservoir in the basin. SJRA also holds an option contract for the purchase of the Houston portion of raw water in Lake Conroe which it plans to utilize in coming years.

The Woodlands Division is a GRP Participant in the SJRA Joint Groundwater Reduction Plan, which specifies measures to meet the requirements of Phase II(B) of the LSGCD District Regulatory Plan (DRP) to reduce future groundwater use within Montgomery County. Through their research and permitting efforts, LSGCD determined that groundwater production in Montgomery County exceeded the sustainable recharge rate and in response established certain requirements to reduce groundwater use. Phase I of the LSGCD DRP, which was adopted in 2006, established a target for sustainable production. DRP Phase II(A) was adopted in 2008 and required entities or groups of entities permitted to produce 10,000,000 gallons per year of groundwater (Large Volume Groundwater Users, or LVGUs) to assess future water needs and potential alternative supplies. Phase II(B) of the DRP requires that all LVGUs either individually or in conjunction with others reduce their groundwater production to not more than 70% of their year 2009 permitted production (Total Qualifying Demand) no later than January, 2016.

The Joint GRP specifies multiple strategies to meet Participant needs, including surface water supplies, conservation, groundwater use from multiple formations, and wastewater reuse. As one of the selected GRP Participants partially converting to treated surface water, the Division will utilize treated surface water originating from Lake Conroe to supply The Woodlands. Infrastructure required to serve Division customers with treated Lake Conroe surface water is currently in development by the GRP Division, which is scheduled to begin actively providing surface water on a wholesale basis to the Division before January 1, 2016 in order to meet LSGCD requirements. Prior to this partial conversion to treated surface water, the Division will continue to provide its customers with wholesale groundwater. After conversion, the Division will receive a base amount of treated surface water and will meet remaining demand with groundwater. The Water Conservation and Drought Contingency Plans for SJRA's GRP Division have been developed separately. The objectives and methods specified in this Water Conservation Plan are consistent with the requirements of the GRP Water Conservation Plan in order to maintain compatibility with the overlying GRP and Lake Conroe Division plans.

2.2 Service Area Description

The approximately 2,314-square mile SJRA watershed area of the San Jacinto River Basin is bounded on the north and the east by the Trinity River Basin and the Trinity-San Jacinto Coastal Basin, on the west by the Brazos River Basin, and on the south by Harris County. The Division covers approximately 38 square miles and is a wholesale provider of water and wastewater service to The Woodlands.

The Woodlands is a master-planned community located in southern Montgomery County, Texas on IH-45, just north of the Harris County line. The Woodlands is made up of twelve individual Municipal Utility Districts ("The Woodlands Districts"), eleven of which are operated and managed through The Woodlands Joint Powers Agency (WJPA), along with Harris-Montgomery County MUD No. 386 which is not a part of the WJPA (see Figure 2-1). The WJPA provides retail water and wastewater service to The Woodlands community. The Woodlands Districts purchase all of their wholesale water and wastewater treatment services from the Division.

In 2013, The Woodlands used 19,555 acre-feet ($\approx 6,372,034,000$ gallons) of groundwater and utilized 1,398 acre-feet of reuse as shown in Tables 2-1 and 2-2. A map of the Division's service area, along with existing potable water treatment facilities and appurtenances, is provided below (Figure 2-2). Major wastewater infrastructure is shown in Figure 2-3.

Table 2-1. 2013 Groundwater Production

Municipal	19,555 ac-ft
Industrial	0 ac-ft
Irrigation	0 ac-ft
Total	19,555 ac-ft

Table 2-2. 2013 Reuse Production

Municipal*	1,398 ac-ft
Industrial	0 ac-ft
Irrigation	0 ac-ft
Total	1,398 ac-ft

*Includes approximately 139 ac-ft of indirect reuse for landscape irrigation and 1,259 ac-ft of direct reuse for WWTP process and washdown water.

A full description of the Division’s customer information can be found in Appendix A, the Water Utility Profile.

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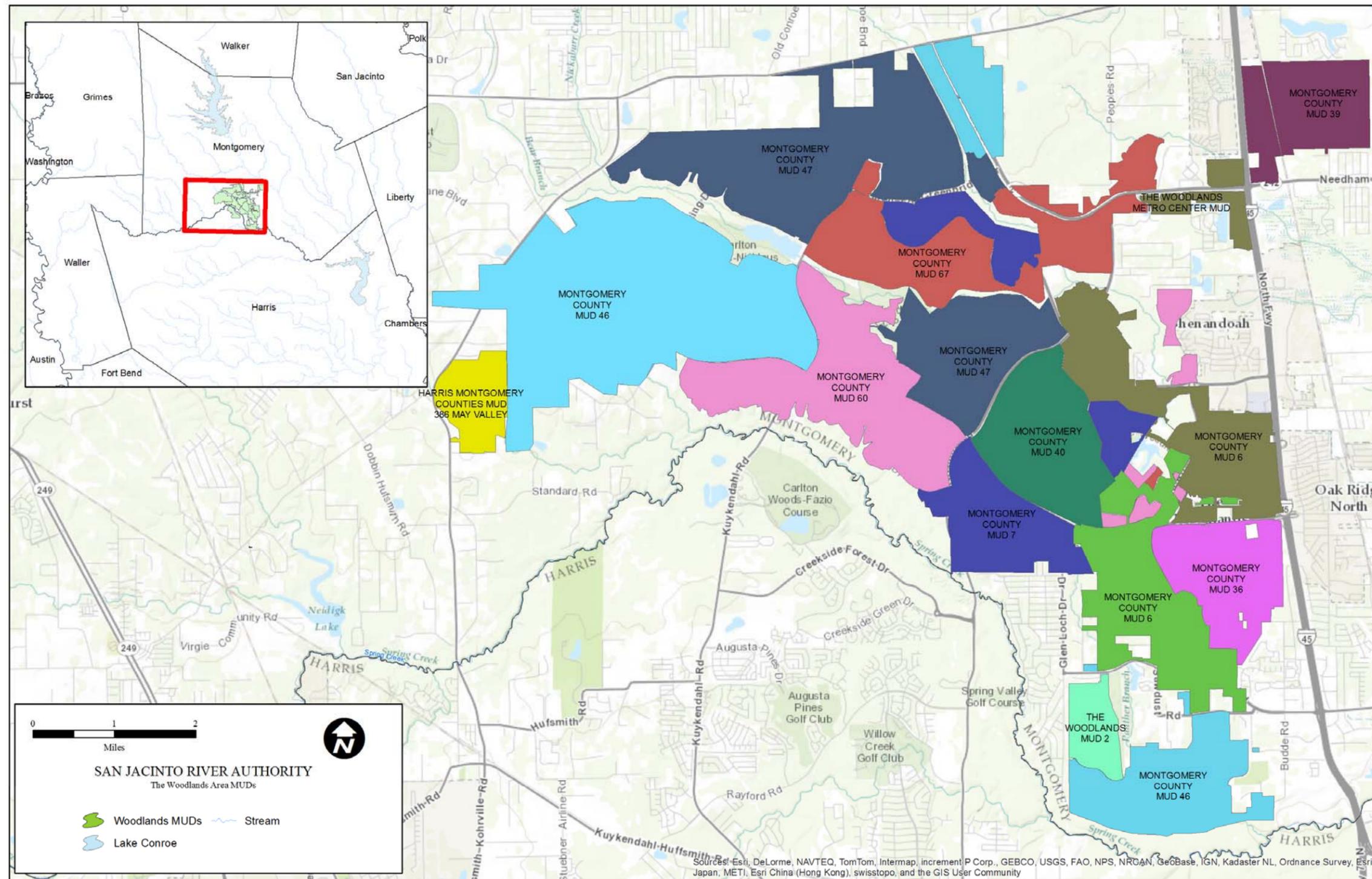


Figure 2-1. Woodlands MUDs

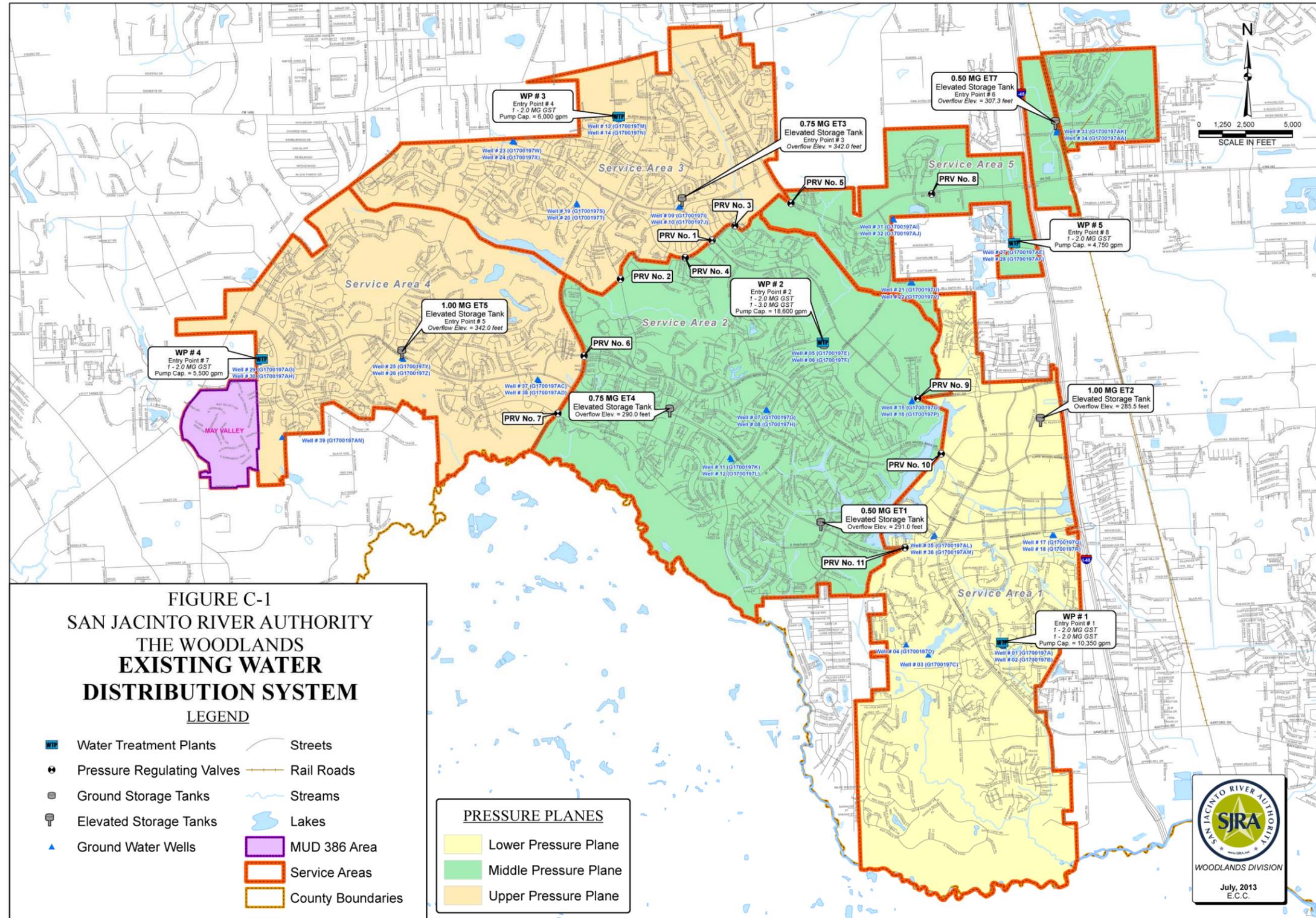


Figure 2-2. Woodlands Division Water Distribution System

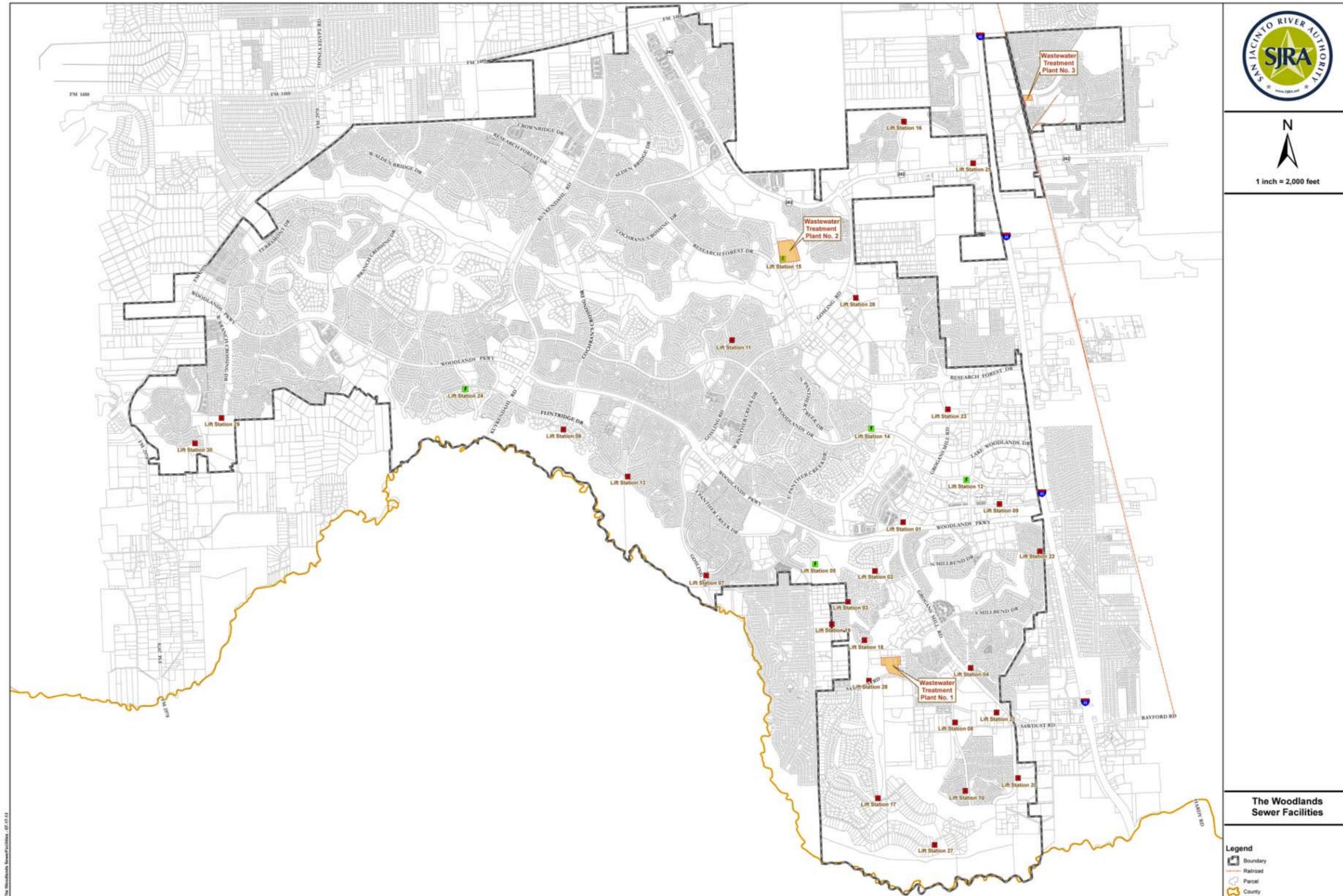


Figure 2-3. Woodlands Division Wastewater Infrastructure

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Section 3. Water Conservation Plan

In the Texas Water Code, water conservation is defined as follows:

“(A) The development of water resources; and,

“(B) Those practices, techniques, and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.”³

Based upon these concepts of water conservation, the Division’s objective is to develop a water conservation plan that increases water use efficiency, thereby reducing water demands, without adversely affecting population and the economic growth potential of its customers.

3.1 Woodlands Division 5- and 10-year Water Conservation Target Goals

As a wholesale water provider, the Division not involved in the day-to-day operations of its customers and therefore does not have direct control over the demands that it serves; however, it is working closely with the MUDs and the WJPA to encourage water-use reduction. The water conservation measures described below include those under the direct control of, and being implemented by, the Division as well as goals supported and encouraged by the Division for implementation by its customers. The SJRA goal for the Division is to achieve a reduction in water demand of 1% per year based on per-capita usage. Average per-capita municipal demand for the Division for 2009 through 2013 was 194.4 gallons per capita per day (gpcd). It is the goal of the Division to reduce municipal per-capita water demand to 185 gpcd by the end of 2018 and to 176 gpcd by the end of 2023.

3.2 Water Conservation Methods

The Division’s water conservation plan includes the following water conservation methods. Each method is described in greater detail in the following subsections.

- Metering and Record Management;
- Leak Detection, Repair, and Minimization of Conveyance Losses;
- Recycling and Reuse;
- Rate Structure;
- Conservation Coordination;

³ TWC, Section 17.001 (23) (A) and (B).

- Conservation Stakeholder Group;
- Contractual Requirements for Customer Water Conservation Plans;
- Customer Conservation Plan Guidance;
- Customer Reporting Requirements;
- Public Information and Education;
- Awards and Recognition Program;
- Encouraging Customer Conservation Practices; and
- Implementation, Enforcement, Coordination with RWPG, and Updating of the Plan.

3.2.1 Metering and Record Management

The customers of the Division are responsible for metering their water use. The data collected from the metering of the customers allows the Division and SJRA to maintain a detailed record management system of water deliveries. Note that the Division's delivery to each customer MUD is not directly metered. However, all retail municipal and commercial water connections within the WJPA as well as some irrigation connections are metered. Customers of the Division are responsible for installing and maintaining meters at the points of retail delivery, including calibration to a level of accuracy compatible with the conservation goals of the Division. Access to these meters will be given to the Division by each customer for inspection purposes. The Division is responsible for metering and maintenance of meters at its production and treatment facilities.

3.2.2 Leak Detection, Repair, and Minimization of Conveyance Losses

The Division's wholesale distribution mains are maintained by the Division. The Division is responsible for lines 12-inches in diameter and larger. Potential leaks identified through accounting, inspection, or customer reporting are repaired promptly to minimize conveyance losses. Those components of the system used to take water from the mains into each wholesale customer's system are owned and maintained by the customer. The Division encourages its customers to engage in leak detection and repair in their own systems. SJRA and the Division encourage customers to take measures to reduce unaccounted-for water to prevent waste and facilitate achievement of the Water Conservation Plan demand reduction goals as specified above.

3.2.3 Recycling and Reuse

The Division currently utilizes reuse supplies, including providing reclaimed effluent to a golf course in the Woodlands through a long-term supply contract. The Division also implements direct reuse by using WWTP effluent for maintenance and process water. As a part of conservation efforts, the

Division will continue reuse.

3.2.4 Rate Structure

SJRA utilizes a non-promotional rate structure for wholesale contracts with its customers; these rates are periodically reviewed and adjusted as necessary. SJRA also encourages the Division's customers to establish rate structures promoting conservation for sales to their own wholesale and retail customers.

3.2.5 Conservation Coordination

The Woodlands Division Manager and/or a designee will serve as conservation liaison and primary point of contact for Division customers and State agencies regarding the development, monitoring, and implementation of the Division's Water Conservation Plan. The Division Manager and/or a designee will oversee the execution and implementation of all elements of the program and will be responsible for maintaining adequate records for program verification.

3.2.6 Conservation Stakeholder Group

SJRA will coordinate with WJPA staff and WJPA Trustees regarding conservation practices and Water Conservation Plan implementation. Meetings may be held periodically at the discretion of the General Manager, Woodlands Division manager, or a designated representative to discuss issues relevant to conservation and gather stakeholder input.

3.2.7 Contractual Requirements for Customer Water Conservation Plans

SJRA will enforce the terms of contracts with wholesale water supply customers related to water conservation measures and Water Conservation Plan requirements. Additionally, SJRA will include in all water supply contracts entered into, renewed, or amended after the adoption of the Division's Water Conservation Plan a requirement that customers develop and implement water conservation plans as required by Title 30, Texas Administrative Code, Chapter 288 30 TAC §288). Per 30 TAC §288, any future contract, renewal, or amendment will also require that successive sales from SJRA customers to others include a contractual stipulation for water conservation requirements. At a minimum, customer conservation plans must comply with the requirements of 30 TAC §288.

SJRA requests that customer water conservation plans be consistent with the conservation goals of the Division, including a reduction in water demand in accordance with the per-capita goals reference above, and should be at least as stringent as the Division's Plan. Customers should submit to SJRA on an annual basis a summary of water conservation and drought contingency plan implementation. SJRA will include these requests as requirements in all water supply contracts entered into, renewed, or amended after

the adoption of the Division's Water Conservation Plan.

SJRA may periodically update these criteria, as well as the Water Conservation and Drought Contingency Plans for the Division to meet legal requirements or address changing conditions; subsequent to such revisions, customers of the Division are requested to update their water conservation and drought contingency plans as applicable.

3.2.8 Customer Conservation Plan Guidance;

SJRA will develop, and will provide to customers upon request, model water conservation plans meeting the contractual requirements described in Section 3.2.7 above for each customer type. Additionally, SJRA will at customer request review draft customer water conservation and drought contingency plans for consistency with contractual requirements and the Division's Water Conservation and Drought Contingency Plans. SJRA will also hold one or more workshops providing information to water supply customers regarding the Plans and contractual requirements.

3.2.9 Customer Reporting Requirements

In 2011, the 82nd Texas Legislature passed Senate Bill (SB) 181, which addressed the need for consistency in water use reporting by municipalities, water utilities, and others. Subsequently, TWDB and TCEQ developed detailed guidance and procedures for calculating and reporting water use, water loss, and other factors.

While SJRA is not directly impacted by these requirements as a wholesale provider, the Division and other divisions provide contract supply to a number of entities which are impacted by SB181. The broad range of water uses served by SJRA and the requirements of multiple State reporting programs creates a need for the consistent customer reporting. As such, SJRA will require customer water usage reports, including any values for per-capita water demand, to follow the procedures established by TWDB and TCEQ.⁴ Water use reports should include data at the sector level (single family residential, multi-family residential, industrial, commercial, agricultural, etc.) and should additionally include estimated population served and calculated water loss. Further, SJRA will request that customers annually submit to SJRA a copy of all conservation plan reporting forms submitted to the TCEQ.

SJRA will also hold one or more workshops providing information to water supply customers on the reporting requirements discussed in this section.

3.2.10 Public Information and Education

SJRA will use the resources of the TWDB, the American Water Works Association, and the

⁴ TWDB et al. 2012. Guidance and Methodology for Reporting on Water Conservation and Water Use

American Public Works Association to assist in obtaining publications and materials for the public education program. Individual pamphlets and flyers provided from these entities would be selected for specialized water-conservation needs as they arise. SJRA also provides information on conservation and efficient water use on the Authority website at <http://www.sanjacintoriverauthority.com/>.

SJRA will provide, as needed, water conservation literature to customers of the Division. Through dialogue with its customers, the Division is committed to promoting improvements in industrial, municipal, and irrigation processes to achieve conservation.

SJRA will make information available through its public information and education program for plumbers and customers to use when purchasing and installing plumbing fixtures, water-using appliances, and watering equipment. Information regarding retrofit devices, such as low-flow shower heads or toilet dams that reduce water use by replacing or modifying existing fixtures or appliances, will also be provided.

Other public information approaches which SJRA has utilized in the past and may implement in the future include public tours of facilities, participation in local environmental events, and joint operation with Lone Star Groundwater Conservation District of a Mobile Teaching Lab.

3.2.11 Awards and Recognition Program

SJRA will develop a program annually providing non-monetary recognition of customer efforts in implementing and promoting water conservation practices. Recognition of customers will include posting of articles describing customer achievements on the SJRA website. SJRA may additionally establish criteria regarding:

- Requirements for consideration for eligibility, including any nomination or application process and any minimum level of conservation required for consideration;
- The number of entities of each user type to be considered;
- Additional public notification or recognition measures; and
- Other criteria as deemed applicable by SJRA.

3.2.12 Encouraging Customer Conservation Practices

SJRA and the Division will work with WJPA to consider implementing rules, measures, and emerging technologies that promote water conservation and efficient use. Recommended measures include, but are not limited to, the following:

- Prohibitions on wasting water;
- Time-of-day watering restrictions;
- Water conservation pricing structures;

- Landscape irrigation conservation, including integrating rainfall/freeze sensors into irrigation systems;
- Water reuse
- Rainwater harvesting
- Public education programs

Additional information on conservation practices for a wide range of water uses can be found at the TWDB website (<http://www.twdb.state.tx.us/>).

3.2.13 Implementation, Enforcement, Coordination with RWPG, and Updating of the Plan

The Woodlands Division Manager and/or designees will act as the administrators of the water conservation program. The administrators will oversee the execution and implementation of all elements of the program and monitor the progress of the plan. Additionally, the administrators will be responsible for submission of an annual report to the TCEQ and TWDB on the progress, and any changes to, the water conservation plan. SJRA is responsible for maintaining adequate records for program verification.

SJRA will enforce the terms of contracts with wholesale water supply customers related to water conservation measures and Water Conservation Plan requirements.

The Division is located within the Region H Regional Water Planning Area. In accordance with the TCEQ rules, the Division provides a copy of its water conservation plan to the Region H Regional Water Planning Group. A copy of the transmittal letter is included in Appendix B.

Appendix A
Water Utility Profiles

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4. Population served for previous five years: 5. Projected population for service area in the following decades:

<u>Year</u>	<u>Population</u>	<u>Year</u>	<u>Population</u>
<u>2009</u>	<u>90,562</u>	<u>2010</u>	<u>93,847</u>
<u>2010</u>	<u>93,847</u>	<u>2020</u>	<u>106,329</u>
<u>2011</u>	<u>95,715</u>	<u>2030</u>	<u>107,678</u>
<u>2012</u>	<u>98,679</u>	<u>2040</u>	<u>107,678</u>
<u>2013</u>	<u>99,839</u>	<u>2050</u>	<u>107,678</u>

6. List source or method for the calculation of current and projected population:

Interfaith of The Woodlands was used for the estimated populations for the previous five years with the exception of Year 2010, for which the 2010 Census value is given. Projected populations were derived from the SJRA GRP Pumpage Rate Study and the Harris-Galveston Subsidence District Regional Groundwater Update study.

B. Customers Data

List (or attach) the names of all wholesale customers, amount of annual contract, and amount of the annual use for each for the previous year:

Wholesale customer	Contracted amount (ac-ft/yr)*	Previous year amount of water delivered (acre-feet)
The Woodlands MUD 2	270	266
Montgomery County MUD 6	1,430	997
Montgomery County MUD 7	1,795	1,377
Montgomery County MUD 36	993	770
Montgomery County MUD 39	997	666
Montgomery County MUD 40	1,225	1,239
Montgomery County MUD 46	4,490	4,624
Montgomery County MUD 47	3,678	3,469
Montgomery County MUD 60	2,231	2,273
Montgomery County MUD 67	1,974	1,506
METRO MUD	3,015	2,020
Harris-Montgomery MUD 386	463	348

**Estimated from projected Year 2018 single family equivalent connections.*

II. WATER USE DATA FOR SERVICE AREA

A. Water Delivery

Indicated if the water provided under wholesale contracts is treated or raw water and the annual amount for each for previous year:

	Total amount delivered or sold for previous year (acre-feet)
Treated	<u>19,555</u>
Raw	<u>N/A</u>

B. Water Accounting Data

1. Total amount of water diverted at point of diversion(s) for previous five years (in acre-feet) for all water uses: **see note*

Year	2009	2010	2011	2012	2013
January	1,110	941	920	1,019	965
February	1,141	760	934	851	902
March	1,415	1,076	1,504	1,203	1,464
April	1,393	1,574	2,224	1,811	1,426
May	1,870	2,216	2,695	2,339	1,819
June	2,903	2,007	2,990	2,351	2,187
July	2,699	1,712	2,812	1,833	2,431
August	2,326	2,459	2,996	2,590	2,481
September	1,765	1,754	2,667	2,274	2,248
October	1,196	2,175	2,249	1,727	1,540
November	1,143	1,360	1,583	1,495	1,099
December	919	1,189	1,098	1,172	993
TOTAL	19,880	19,223	24,670	20,664	19,555

2. Wholesale population served and total amount of water diverted for **municipal use** for previous five years: **see note*

Year	Total Population Served	Total Annual Water Diverted for Municipal Use (acre feet)
2013	99,839	19,555
2012	98,679	20,664
2011	95,715	24,670
2010	93,847	19,223
2009	90,562	19,880

**Values given reflect treated groundwater.*

C. Projected Water Demands

If applicable, project and attach water supply demands for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirement from such growth.

Projected municipal demands are shown in the table below. These values were developed from data included in the SJRA Groundwater Reduction Plan (GRP), the SJRA GRP Pumpage Rate Study, and the Harris-Galveston Subsidence District Regional Groundwater Update.

Year	Projected Woodlands Division Demands	
	MGD*	ac-ft
2014	18.74	21,004
2015	18.88	21,167
2016	19.03	21,330
2017	19.64	22,015
2018	20.25	22,698
2019	20.86	23,382
2020	21.47	24,066
2021	22.08	24,750
2022	22.69	25,433
2023	23.30	26,117

*Millions of gallons per day.

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

List all current water supply sources and the amounts authorized with each:

	Source	Amount Authorized	
Surface Water:	_____	_____	acre-feet
Groundwater:	<u>Evangeline and Jasper aquifers</u>	<u>20,479*</u>	acre-feet
Other:	_____	_____	acre-feet

** Amount authorized is per LSGCD. SJRA is not contractually limited for water sales to the MUDs.*

B. Treatment and Distribution System (if provide treated water)

1. Design daily capacity of system: 63.95 MGD
2. Storage Capacity: Elevated 4.5 MG, Ground 15 MG
3. Please describe the water system and attach. Include the number of treatment plants, wells, and storage tanks. If possible, attach a sketch of the system layout.

The Woodlands districts purchase all of their treated water from the SJRA through a wholesale purchase agreement. The SJRA facilities provide water under direct pressure to the districts at multiple points. SJRA's treated water infrastructure includes five water plants, thirty-eight groundwater wells, six elevated storage tanks, seven ground storage tanks, and wholesale water distribution pipelines. The system is illustrated in Attachment A to TCEQ Form 20162.

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s): 14.7 MGD
2. Briefly describe the wastewater system(s) of the area serviced by the wholesale public water supplier. Describe how treated wastewater is disposed of. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and, if wastewater is discharged, the receiving stream. If possible, attach a sketch or map which locates the plant(s) and discharge points or disposal sites.

All SJRA WWTP's are versions of the activated sludge processes. Treated wastewater is disinfected then disposed of in nearby creeks and rivers as identified below. A system diagram is also included in Attachment B.

- *TCEQ names and numbers:*
 - *WWTP No. 1 – WQ0011401001*
 - *WWTP No. 2 – WQ0012597001*
 - *WWTP No. 3 – WQ0011658001*
- *Owner / Operator: SJRA*
- *Receiving stream*
 - *WWTP No. 1 – Panther Branch (Segment No. 1008 of the San Jacinto River Basin)*
 - *WWTP No. 2 – Panther Branch (Segment No. 1008 of the San Jacinto River Basin)*
 - *WWTP No. 3 – unnamed tributary (Segment No. 1004 of the San Jacinto River Basin)*

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: 100 %
2. Monthly volume treated for previous three years (in 1,000 gallons):

Year	2011	2012	2013
January	232,872	239,260	229,150
February	209,524	226,770	201,824
March	227,261	239,950	219,696
April	222,930	224,210	219,549
May	236,561	231,740	229,994
June	230,850	232,310	225,298
July	240,312	261,550	232,072
August	245,303	226,960	237,906
September	223,920	214,100	230,488
October	228,253	222,780	234,613
November	224,820	208,970	226,183
December	233,585	219,190	227,245
TOTAL	2,756,191	2,747,790	2,714,018

REQUIREMENTS FOR WATER CONSERVATION PLANS FOR WHOLESALE PUBLIC WATER SUPPLIERS

In addition to the description of the wholesaler's service area (profile from above), a water conservation plan for a wholesale public water supplier must include, at a minimum, additional information as required by Title 30, Texas Administrative Code, ' 288.5. Note: If the water conservation plan does not provide information for each requirement, an explanation must be included as to why the requirement is not applicable.

Specific, Quantified 5 & 10-Year Targets

The water conservation plan must include specific, quantified five-year and ten-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day for the wholesaler's service area, maximum acceptable unaccounted-for water, and the basis for the development of these goals. Note that the goals established by wholesale water suppliers under this subparagraph are not enforceable.

Metering Devices

The water conservation plan must include a description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply.

Record Management Program

The water conservation plan must include a monitoring and record management program for determining water deliveries, sales, and losses.

Metering/Leak-Detection and Repair Program

The water conservation plan must include a program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system.

Reservoir Systems Operations Plan

The water conservation plan must include a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plans shall include optimization of water supplies as one of the significant goals of the plan.

Contract Requirements for Successive Customer Conservation

The water conservation plan must include a requirement in every water supply contract entered into or renewed after official adoption of the water conservation plan, and including

any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of this chapter. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of Title 30 TAC Chapter 288.

Enforcement Procedure & Official Adoption

The water conservation plan must include a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan.

Coordination with the Regional Water Planning Group(s)

The water conservation plan must include documentation of coordination with the regional water planning groups for the service area of the wholesale water supplier in order to ensure consistency with the appropriate approved regional water plans.

Example statement to be included within the water conservation plan:

The service area of the _____ (name of water supplier) is located within the _____ (name of regional water planning area or areas) and _____ (name of water supplier) has provided a copy of this water conservation plan to the _____ (name of regional water planning group or groups).

Plan Review and Update

Beginning May 1, 2005, the wholesale water supplier shall review and update its water conservation plan, as appropriate based on an assessment of previous five-year and ten-year targets and any other new or updated information. A wholesale water supplier shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

Best Management Practices Guide

On November 2004, the Texas Water Development Board's (TWDB) Report 362 was completed by the Water Conservation Implementation Task Force. Report 362 is the Water Conservation Best Management Practices (BMP) Guide. The BMP Guide is a voluntary list of management practices that water users may implement in addition to the required components of Title 30, Texas Administrative Code, Chapter 288. The BMP Guide is available on the TWDB's website at the link below or by calling (512) 463-7847.

<http://www.twdb.state.tx.us/assistance/conservation/TaskForceDocs/WCITFBMPGuide.pdf>

If you have any questions on how to fill out this form or about the Wholesale Public Water Suppliers program, please contact us at 512/239-4691.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512-239-3282.

Appendix A

Definitions of Commonly Used Terms

Conservation – Those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.

Industrial use – The use of water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value, commercial fish production, and the development of power by means other than hydroelectric, but does not include agricultural use.

Irrigation – The agricultural use of water for the irrigation of crops, trees, and pastureland, including, but not limited to, golf courses and parks which do not receive water through a municipal distribution system.

Municipal per capita water use – The sum total of water diverted into a water supply system for residential, commercial, and public and institutional uses divided by actual population served.

Municipal use – The use of potable water within or outside a municipality and its environs whether supplied by a person, privately owned utility, political subdivision, or other entity as well as the use of sewage effluent for certain purposes, including the use of treated water for domestic purposes, fighting fires, sprinkling streets, flushing sewers and drains, watering parks and parkways, and recreational purposes, including public and private swimming pools, the use of potable water in industrial and commercial enterprises supplied by a municipal distribution system without special construction to meet its demands, and for the watering of lawns and family gardens.

Municipal use in gallons per capita per day – The total average daily amount of water diverted or pumped for treatment for potable use by a public water supply system. The calculation is made by dividing the water diverted or pumped for treatment for potable use by population served. Indirect reuse volumes shall be credited against total diversion volumes for the purpose of calculating gallons per capita per day for targets and goals.

Public water supplier – An individual or entity that supplies water to the public for human consumption.

Regional water planning group – A group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code, ' 16.053.

Retail public water supplier – An individual or entity that for compensation supplies water to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants when that water is not resold to or used by others.

Reuse – The authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either

disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water.

Water conservation plan – A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water. A water conservation plan may be a separate document identified as such or may be contained within another water management document(s).

Water loss - The difference between water diverted or treated and water delivered (sold). Water loss can result from:

1. inaccurate or incomplete record keeping;
2. meter error;
3. unmetered uses such as firefighting, line flushing, and water for public buildings and water treatment plants;
4. leaks; and
5. water theft and unauthorized use.

Wholesale public water supplier – An individual or entity that for compensation supplies water to another for resale to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants as an incident of that employee service or tenancy when that water is not resold to or used by others, or an individual or entity that conveys water to another individual or entity, but does not own the right to the water which is conveyed, whether or not for a delivery fee.

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San Jacinto River Authority – Woodlands
Division

Attachments to TCEQ Form 20162:
Profile & Water Conservation Plan
Requirements for Wholesale Public Water
Suppliers

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Attachment A

SJRA Woodlands Division Service Area and Water Supply
Infrastructure

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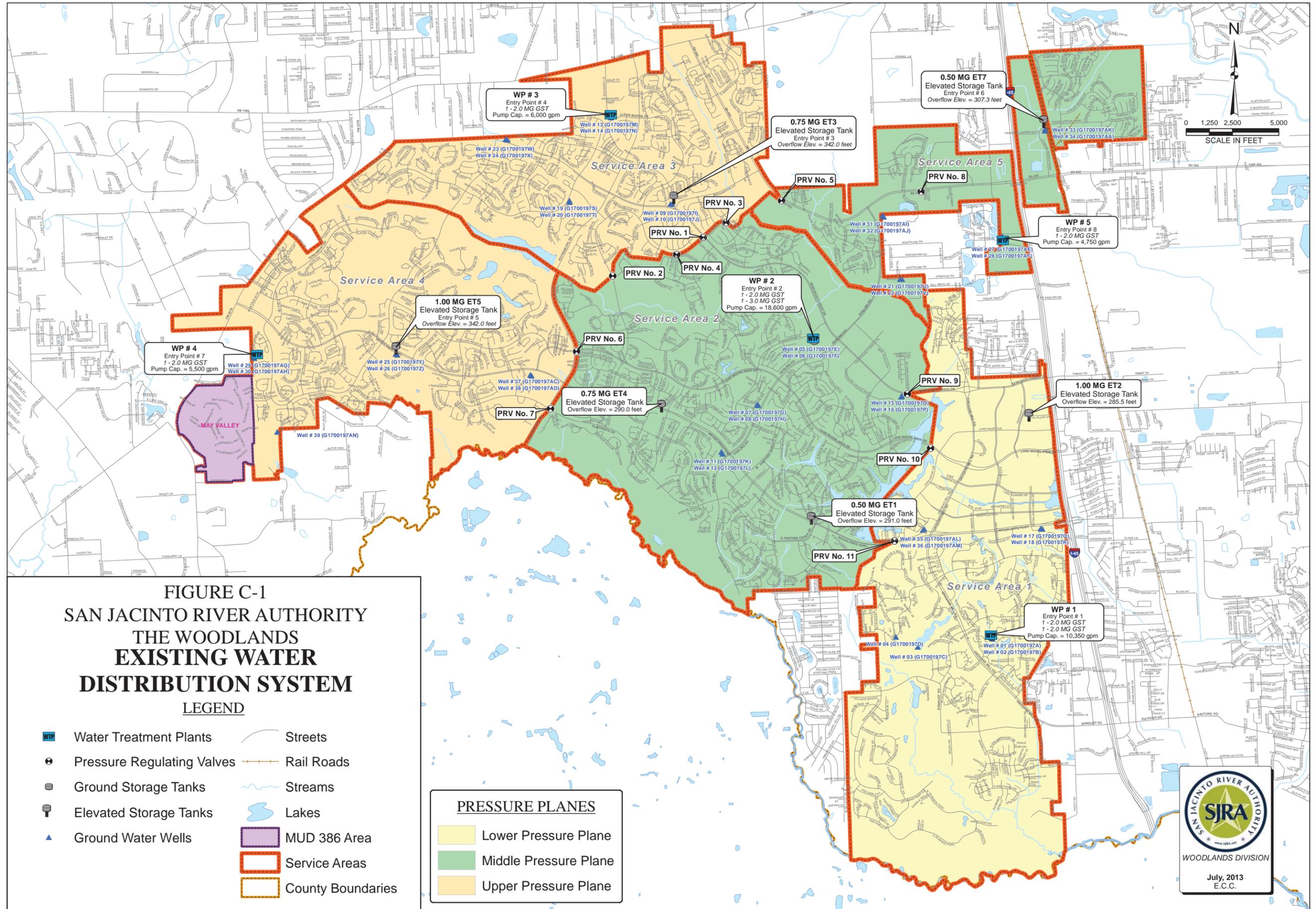


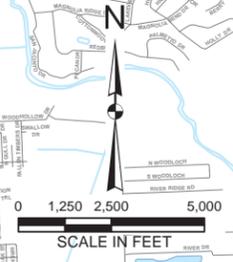
FIGURE C-1
SAN JACINTO RIVER AUTHORITY
THE WOODLANDS
EXISTING WATER
DISTRIBUTION SYSTEM

LEGEND

- | | | | |
|--|----------------------------|--|-------------------|
| | Water Treatment Plants | | Streets |
| | Pressure Regulating Valves | | Rail Roads |
| | Ground Storage Tanks | | Streams |
| | Elevated Storage Tanks | | Lakes |
| | Ground Water Wells | | MUD 386 Area |
| | | | Service Areas |
| | | | County Boundaries |

PRESSURE PLANES

- Lower Pressure Plane
- Middle Pressure Plane
- Upper Pressure Plane



Attachment B

SJRA Woodlands Division Wastewater Treatment
Infrastructure

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Appendix B
Resolutions Passed by SJRA
Transmittal Letter to Region H RWPG

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RESOLUTION ADOPTING REVISED WATER CONSERVATION PLANS AND DROUGHT CONTINGENCY PLANS; AUTHORIZING THE IMPLEMENTATION OF SUCH REVISED PLANS; REPEALING AND RESCINDING ALL PRIOR PLANS; AND CONTAINING OTHER PROVISIONS RELATING TO THE SUBJECT

WHEREAS, the San Jacinto River Authority (the "Authority") has water rights issued by the Texas Commission on Environmental Quality and its predecessor agencies (collectively, the "TCEQ") to divert water from the San Jacinto River and Trinity River basins; and

WHEREAS, the Authority, by and through its Highlands Division, owns and operates water supply and distribution systems and facilities, including the Lake Houston Pump Station, Highlands Reservoir, and Highlands Canal System, in order to sell and deliver water out of such rights to certain customers generally located in eastern Harris County; and

WHEREAS, the Authority also owns an interest in Lake Conroe Dam and Reservoir, located in Montgomery and Walker Counties ("Lake Conroe") upstream on the San Jacinto River from the Lake Houston Reservoir, and holds certain contract rights and water rights issued by the TCEQ to divert or release and use water from Lake Conroe; and

WHEREAS, the Authority, by and through its Lake Conroe Division, operates Lake Conroe and sells water out of such rights to customers located in Montgomery County, generally in close proximity to Lake Conroe; and

WHEREAS, the Authority, by and through its Woodlands Division, owns and operates an extensive water supply and distribution system and facilities for providing regional, wholesale services to customers in the area of The Woodlands; and

WHEREAS, the Authority, by and through its Groundwater Reduction Plan Division (the "GRP Division"), is presently in the process of constructing a surface water treatment facility and transmission system that will withdraw water from Lake Conroe for treatment, distribution and sale to its Woodlands Division and certain other customers; and

WHEREAS, in connection with the management of such facilities, systems and operations, the Authority has previously adopted a Water Conservation and Drought Contingency Plan (the "Plan") in accordance with the requirements of Chapter 11, Texas Water Code, as amended, and the rules of the TCEQ under Chapter 288 of Title 30, Texas Administrative Code, as amended; and

WHEREAS, the Board of Directors of the Authority has determined that it is in the public interest to revise and replace the Plan; Now, Therefore,

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SAN JACINTO RIVER AUTHORITY, THAT:

Section 1: The Plan, as previously adopted and amended by the Authority, is hereby repealed and rescinded in its entirety.

Section 2: The Board of Directors of the Authority hereby approves and adopts the revised water conservation and drought contingency plans, each dated as of the date hereof, titled as follows: *Water Conservation Plan for San Jacinto River Authority Highlands Division; Drought Contingency Plan for San Jacinto River Authority Highlands Division; Water Conservation Plan for San Jacinto River Authority Lake Conroe Division; Drought Contingency Plan for San Jacinto River Authority Lake Conroe Division; Water Conservation Plan for San Jacinto River Authority Woodlands Division; Drought Contingency Plan for San Jacinto River Authority Woodlands Division; Water Conservation Plan for San Jacinto River Authority GRP Division; and Drought Contingency Plan for San Jacinto River Authority GRP Division* (collectively, the "Revised Plans").

Section 3: The Revised Plans, together with any amendments thereto which may be made from time to time, shall be maintained on file in the official records of the Authority and filed, as appropriate, with the TCEQ, the Texas Water Development Board and any other agencies with jurisdiction.

Section 4: It shall be the policy of the Authority that the programs and procedures set forth in the Revised Plans be implemented immediately. The General Manager of the Authority shall report to the Board of Directors of the Authority and other interested agencies annually on the implementation and effectiveness of the Revised Plans in accordance with the procedures set forth in the Revised Plans.

Section 5: The General Manager of the Authority is hereby designated as the official responsible for implementation of the Revised Plans in accordance with the guidelines set forth in the Revised Plans.

Section 6: It shall be the policy of the Authority to support and assist its wholesale and retail customers in (1) designating their pre-assigned officials as having the responsibility and authority to implement the Revised Plans, (2) allowing for enforcement of the Revised Plans, and (3) providing civil penalties for noncompliance with the Revised Plans.

Section 7: It shall be the policy of the Authority that the *Water Conservation Plan for San Jacinto River Authority GRP Division* and the *Drought Contingency Plan for San Jacinto River Authority GRP Division* establish minimum requirements which shall be adopted, respectively, in a water conservation plan and a drought contingency by each participant in the Authority's Groundwater Reduction Plan. The General Manager of the Authority and the GRP Administrator are hereby authorized and directed to take such actions as are deemed necessary and appropriate to ensure that the participants in the Authority's Groundwater Reduction Plan (the "Participants") adopt water conservation plans and drought contingency plans that are reasonably determined to meet or exceed such minimum requirements. Further, it shall be the policy of the Authority to support and assist the Participants in (1) adopting such water conservation plans and drought contingency plans, and (2) implementing and enforcing such water conservation plans and drought contingency plans.

Section 8: This Resolution shall be and remain in full force and effect from and after the date of its passage and approval.

PASSED AND APPROVED this 27th day of March, 2014.



President, Board of Directors



Secretary, Board of Directors

(SEAL)



San Jacinto River Authority

ADMINISTRATIVE OFFICE
P.O. Box 329 • Conroe, Texas 77305
(T) 936.588.3111 • (F) 936.588.3043

March 31, 2014

Region H Water Planning Group
c/o San Jacinto River Authority
P. O. Box 329
Conroe, Texas 77305

Re: Water Conservation and Drought Contingency Plans

Dear Region H;

Please find enclosed one (1) copy of the revised Water Conservation and Drought Contingency Plans for the Lake Conroe, GRP, Woodlands and Highlands Divisions of San Jacinto River Authority. The Woodlands Division is the wholesale provider of water to the eleven municipal utility districts (MUDs) that comprise The Woodlands. The Woodlands Joint Powers Agency is the retail provider of water to these MUDs and will submit its Water Conservation and Drought Contingency Plans separately. These revisions have been initiated to meet the regulatory requirement to update and submit the plans by May 1, 2014.

If you have any questions, please do not hesitate to contact us.

Sincerely,

Ronald D. Kelling, P.E.
Deputy General Manager
San Jacinto River Authority

LAKE CONROE DIVISION
P.O. Box 329
Conroe, Texas 77305
(T) 936.588.1111
(F) 936.588.1114

GRP DIVISION
P.O. Box 329
Conroe, Texas 77305
(T) 936.588.1662
(F) 936.588.7182

WOODLANDS DIVISION
P.O. Box 7537
The Woodlands, Texas 77387
(T) 281.367.9511
(F) 281.362.4385

HIGHLANDS DIVISION
P.O. Box 861
Highlands, Texas 77562
(T) 281.843.3300
(F) 281.426.2877