San Jacinto River Authority
GRP Program

Joint Groundwater Reduction Plan

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GRP Requirement Matrix

Lone Star Groundwater Conservation District Phase IIB GRP Requirement	See GRP Section
Projected Water Demand	
1. Identify the population and the projected water demand for 2016, 2025, 2035, and 2045 for each LVGU that is subject to the GRP using data from the TWDB. This data must include explanations detailing significant projected increases or decreases in total water demand. Public water suppliers should use intended service areas when completing this population and water demand information, and should include a map of such intended service areas for each of the above years.	2.1 and 2.2
2. Include a water reuse feasibility assessment describing the availability of reclaimed water to serve as all or a portion of the Alternative Water Source.	3.2
3. Provide evidence demonstrating that each Alternative Water Source proposed in the GRP will be a source or sources of water that will be adequate in volume to allow the LVGU to meet its Initial Conversion Obligation.	3.1 and 4.1
Plans for Meeting Initial Obligation	
1. any design, engineering, construction, legal, financial, and technical components of the proposed conversion plan.	4.2 and 4.3
2. a description of any feasibility studies undertaken, or that are proposed to be undertaken, by the LVGU for facilities development, siting, easement acquisition, and construction.	4.2 and 4.3
3. a report of preliminary engineering on proposed facilities to be constructed through 2016, including a description of the proposed project and area maps.	4.2 and 4.3
4. a description of how substantial infrastructure costs may be financed.	5.3
5. a description of each Alternative Water Source and/or conservation project the LVGU intends to rely upon to meet its Initial Conversion Obligation, including, where applicable, the disclosure of each supplier of water that the LVGU proposes to use as an Alternative Water Source.	3.1 and 3.3
6. any executed contracts, proof of financial commitments, or other documentation necessary to demonstrate that every water supplier that the LVGU proposed to rely upon for an Alternative Water Source does in fact have sufficient supplies of, and sufficiently reliable legal rights to, the requisite volumes of Alternative Water Source, and is willing to provide the Alternative Water Source in the volumes and rates required to satisfy the LVGU's Initial Conversion Obligation.	3.1
7. a timetable that identifies the specific deadlines, by date, that the LVGU itself must meet in order to comply with its Initial Conversion Obligation for: A. securing financing; B. executing all water supply agreements or other contractual obligations necessary for the supply or delivery or each Alternative Water Source identified in the GRP; C. closing on all right-of-way or other necessary real property acquisitions; D. finalizing all requisite preliminary designs; E. obtaining all necessary permits or other legal authorizations necessary from any applicable State or Federal regulatory authority; F. initiating and completing each necessary phase of construction or implementation of a conservation project; and G. all other milestones or information that the LVGU believes are important for an adequate understanding of the proposed Alternative Water Source and/or conservation project.	5.3 and 5.4
8. Any LVGU that chooses to meet post-2016 demand growth after the Initial Conversion Obligation by producing groundwater in some years in an amount that exceeds its 2016 maximum authorized groundwater production level by undergoing subsequent groundwater reduction and conversion efforts so that its average groundwater use throughout the 2016-2045 planning period does not exceed its 2016 maximum authorized groundwater production level must also include in its GRP identification and conceptual engineering of the Alternate Water Sources and/or conservation measures that it intends to pursue to achieve average groundwater use throughout the planning period that is compliant with the Initial Conversion Obligation.	4.2
Alternative Water Source Contract That Expires Before 2045	
If the contractual commitment for any Alternative Water Source is for a term that expires before January 1, 2045, the GRP should include a description regarding the availability of contract renewal options through an additional term or terms until at least January 1, 2045. If contract renewal options are not available to the LVGU, then the GRP should include a description of available alternatives to replacing the Alternative Water Source upon expiration of the contract term.	3.1
Additional Requirements for Joint GRPs	
1. As discussed above, an LVGU may satisfy its GRP requirement by participating in a Joint GRP along with one or more additional LVGUs. There is no maximum number of LVGUs that may be included in a Joint GRP. However, each Joint GRP submitted to the District must include all requisite information for each LVGU that would otherwise be required of the LVGU if it was submitting an individual GRP.	4.1
2. Each Joint GRP must: A. demonstrate the requisite commitment and actual ability of the aggregated LVGUs participating in the Joint GRP to collectively meet the Initial Conversion Obligation; B. designate a Joint GRP participant to serve as the Joint GRP Sponsor; C. include a written agreement between the participants demonstrating that the Joint GRP Sponsor is duly authorized to submit the Joint GRP and to otherwise act on behalf of all of the participants in developing, submitting, and executing the Joint GRP ..	1.2, 1.3 and 5.1

Lone Star Groundwater Conservation District Phase IIB GRP Requirement	See GRP Section
3. Notwithstanding any other provision of this DRP Phase II(B) to the contrary, a Joint GRP may provide for the over-conversion to Alternative Water Sources of some participant LVGUs and for the under-conversion to Alternative Water Sources by other participant LVGUs if the participants in the Joint GRP collectively achieve the Initial Conversion Obligation for the aggregated Total Qualifying Demand of all of the participants. For example, the Joint GRP may provide that the water demands for some individual participant LVGUs will be met by using 100 % groundwater, as long as the group as a whole achieves the required conversion amount for all participants by over-converting other participant LVGUs. The purpose of allowing this conversion flexibility within each Joint GRP is to assist in reducing overall conversion costs by reducing the amount of infrastructure that must be built to achieve the required conversion.	4.2
Safe Harbor GRP	
A. A Safe Harbor GRP must include a New LVGU Growth Plan that identifies how, and under what conditions, the Joint GRP could accommodate groundwater producers that become LVGUs for the first time after January 1, 2010.	2.3
B. A Safe Harbor GRP must ensure that its New LVGU Growth Plan is periodically updated by submitting amendments to the plan to the District as warranted by any material change in circumstances or capacity; and A Safe Harbor GRP that was unable or unwilling to accept a New LVGU that attempted to join its GRP must, within 60 days of receiving a written request by the District, submit in writing to the District and the New LVGU a statement setting forth the reasons for the denial and an estimate of the time, conditions, and circumstances, if any, under which acceptance of the New LVGU may be feasible.	----

Acronyms, Abbreviations and Definitions

afpy	acre feet per year
Alternative Water Source	Water other than groundwater produced from portions of the Chicot, Evangeline and Jasper aquifers of the Gulf Coast Aquifer that underline Montgomery County or any County that joins Montgomery County.
Aquifer Sustainable Yield	The annual amount of groundwater, expressed in acre-feet, that is reintroduced as recharge into the Gulf Coast Aquifer and is available for production from within the LSGCD.
CMAR	Construction Manager at Risk
COH	City of Houston
DFund	A loan program administered by the Texas Water Development Board that provides loans to political subdivisions of the state or nonprofit water supply corporations.
DCP	Drought Contingency Plan
DOI	Declaration of Intent to submit a GRP
DRP	District Regulatory Plan
GAM	Groundwater Availability Model
GHGA	Greater Houston Galveston Area
GMP	Groundwater Management Plan
GRP	Groundwater Reduction Plan
GRP Administrator	General Manager of the Authority, or his designee
GRP Contract	Contract executed between SJRA and an LVGU for groundwater reduction planning, alternative water supply and related goods and services.
Gpcd	gallons per capita per day
Gulf Coast Aquifer	Comprised of the Chicot, Evangeline, and Jasper aquifers

HGAC	Houston Galveston Area Council
HSPS	High Service Pump Station
ICO	Initial Conversion Obligation. The requirement that each Large Volume Groundwater User must reduce its Gulf Coast Aquifer groundwater production to no more than 70% of its Total Qualifying Demand and actually net not less than 30 % of its Total Qualifying Demand by implementation of conservation measures and/or by using an Alternative Water Source.
Joint GRP	A single GRP Submitted by one or more Large Volume Groundwater Users (LVGU).
Joint GRP Participants	An LVGU that has executed a GRP contract with the SJRA to be included in SJRA's Joint GRP.
Joint GRP Sponsor	The Large Volume Groundwater User Joint GRP representative principally responsible for coordinating the development, submission, and execution of a Joint GRP. SJRA is the Joint GRP Sponsor for this GRP.
Joint WRAP	A single Water Resources Assessment Plan (WRAP) submitted by one or more Large Volume Groundwater Users
LSGCD	Lone Star Groundwater Conservation District
LVGU	Large Volume Groundwater User. Any person or entity that, through a single well or a combination of wells, actually produced or was authorized by a permit or permits by the LSGCD to produce 10 million gallons or more of groundwater annually during calendar year 2009.
MCAD	Montgomery County Appraisal District
MUD	Municipal Utility District
NHCRWA	North Harris County Regional Water Authority
New Large Volume Groundwater User	Any person or entity that produces or is permitted to produce 10 million gallons or more of groundwater annually on or after January 1, 2010 but did not qualify as an LVGU prior to January 1, 2010 or otherwise requires 10 million gallons or more of groundwater annually for the first time on or after January 1, 2010.

Non-WUG	Any public entity that is not classified as a WUG.
O&M Costs	Operation and maintenance (including repair) costs for facilities and transmission system.
Participants	LVGUs described by the LSGCD as participating in a single GRP submitted on behalf of two or more Large Volume Groundwater Users.
PER (LSGCD)	Preliminary Engineering Report (LSGCD definition). The amount of engineering necessary to define the infrastructure needs of the project, to determine the feasibility and projected 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 LSGCD will make the final determination of whether a proposed GRP meets the definition of preliminary engineering.
POA	Property Owner Association
Program	Surface water treatment and transmission system to be designed, permitted, constructed, operated, maintained, and administered by SJRA.
Raw Water	Water from Lake Conroe prior to treatment.
Region H	One of 16 water supply planning regions of the state of Texas as defined by the TWBD
Review Committee	Committee consisting of six representatives from SJRA Joint GRP Participants selected as outlined in the GRP Contract for the purpose of advising SJRA regarding certain matters pertaining to the GRP implementation.
ROW	Right-of-Way
RW/PS	Raw Water Intake/Pump Station
Safe Harbor GRP	Any joint Groundwater Reduction Plan (GRP) that accounts for at least10 % of the total water demand of all LVGUs within the LSGCD
SJRA	San Jacinto River Authority (Authority)

SWPPP	Storm Water Pollution Prevention Plan
Take Points	SJRA Joint GRP Participant water plants that will be receiving surface water.
TCEQ	Texas Commission on Environmental Quality
TQD	Total Qualifying Demand – The final volume of groundwater that a LVGU is authorized under the terms of a permit issued by LSGCD to produce from the Gulf Coast Aquifer (Chicot, Evangeline, and Jasper aquifers) in calendar year 2009.
TRA	Trinity River Authority
TWDB	Texas Water Development Board
Wastewater effluent reuse	Treated wastewater plant discharge water used in lieu of other water supplies. The two types of reuse: direct reuse and indirect reuse. Direct reuse occurs when treated wastewater is delivered from a wastewater treatment plant directly to a water user. Potential applications where direct reuse could be used includes golf course irrigation, green irrigation (esplanades, green belts, and parks), amenity lakes level maintenance, and sports/athletic field irrigation. Indirect reuse occurs when treated wastewater effluent is discharged into a stream or reservoir and is later diverted downstream for reuse. Indirect reuse can provide water supplies for municipal use as well as irrigation and industrial supplies.
WCP	Water Conservation Plan
WIF	Water Infrastructure Fund – a loan program administered by the TWDB.
WRAP	Water Resources Assessment Plan - A prepared document which assessed future water needs and describes how alternative water supplies may be acquired to meet future water demands and groundwater reduction requirements established by the LSGCD.
WTP	Water Treatment Plant

WUG	Water User Group - A demand center to which water resources can be allocated for annual regional water plans under the Region H Planning Group and the TWDB.

Reference Documents

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Executive Summary

The San Jacinto River Authority (SJRA) is submitting this Joint Groundwater Reduction Plan (SJRA Joint GRP) to the Lone Star Groundwater Conservation District (LSGCD) in compliance with the requirements of the District Regulatory Plan Phase II (B) (DRP Phase II (B)) amended by LSGCD on April 22, 2010. It includes all the requirements of a GRP on behalf of 140 large volume groundwater users (LVGUs).

The 140 LVGUs have executed GRP Contracts with the SJRA to become a Joint GRP and have nominated the SJRA to be the SJRA Joint GRP Sponsor. **Exhibit 1** displays the SJRA Joint GRP Participants, and a complete list of them is included in **Appendix A**. The DRP Phase II (B) requires that all LVGUs reduce their groundwater production not to exceed 70 % of their 2009 permitted groundwater volume (Total Qualifying Demand) by January 1, 2016. This GRP document details the plan to meet this requirement.

Population and water demands for the milestone years of 2016, 2025, 2035, and 2045 are calculated based on data obtained from the Texas Water Development Board (TWDB). The Region H 2011 Water Plan was used for the population projections for Water User Groups (WUGs) and HGAC data for the majority of the non-WUG LVGUs. The population projections are presented in **Table ES.1**.

Table ES.1

Population Projections
SJRA Joint GRP Participants

	2016	2025	2035	2045
GRP Participants				
WUG	274,105	336,153	390,565	452,571
Non-WUG	76,656	98,203	140,503	191,275
Total	350,761	434,356	531,068	643,846

Water demands were projected based on Region H Water Plan 2011 for WUGs. Non-WUGs were calculated by seven other methods that were based on available information. This information included HGAC population data, questionnaires sent out during the Water Resources Assessment Plan (WRAP), and 2007 – 2009 pumpage data provided by the LSGCD. The SJRA GRP Participant demand for 2016 is estimated to be 59.7 million gallons per day (mgd).

DRP Phase II (B) has a provision that states that any GRP that accounts for more than 10 % of the permitted groundwater in the LGSCD is a Safe Harbor GRP and must allow for New LVGUs. This SJRA Joint GRP qualifies as such, and therefore, a "Safe Harbor County Other" component has been calculated for future projections. **Table ES.2** summarizes the SJRA Joint GRP Participant and the Safe Harbor County Other projected demand from 2025 to 2045. The Total GRP Demand consists of the Participant demand and the Safe Harbor County Other demand.

Table ES.2

Total SJRA Joint GRP Water Demand (MGD)

	2025	2035	2045
Region H Total Water	110.15	133.28	161.20
LVGU Total (Participants and Non-Participants)	99.11	113.97	129.81
Exemptions	3.29	3.59	3.69
Safe Harbor County Other	7.75	15.72	27.70
GRP Participant Demand	73.77	85.21	97.37
Total GRP Demand	81.51	100.93	125.07

The SJRA has previously completed a water source study to determine the alternative source of water to meet the LSGCD regulations. The alternative chosen from this study was to enter into a long-term lease agreement with the City of Houston for its water rights in Lake Conroe (two-thirds), while also utilizing the SJRA's water rights in Lake Conroe (one-third).

Water reuse and water conservation are also discussed in this SJRA Joint GRP and are planned to be reviewed and implemented in the future. Toward that end, draft policies have been written for water reuse, water conservation, and drought contingency and are presented in **Appendices E, F and G.**

For the purposes of the development of the SJRA Joint GRP, reducing water demand through conservation and/or utilizing alternatives to treated surface water are assumed not to impact the size and location of the treated surface water infrastructure during the 2016 implementation of this SJRA Joint GRP.

The Total Qualifying Demand (TQD) for the SJRA Joint GRP Participants is 54.9 mgd, and 70 % of their TQD is 38.5 mgd. The DRP Phase II (B) allows the SJRA Joint GRP Participants to provide for demand growth on groundwater between surface water expansions as long as the average of groundwater pumpage is below 38.5 mgd for the planning period ending in 2045. The groundwater reduction strategy is to over-convert those SJRA Joint GRP Participants with the highest volumes of groundwater demand. In order to meet the requirement to average less than 38.5 mgd of groundwater pumpage, the increase in demand between 2025 to 2035 and 2035 to 2045 will be met with surface water and groundwater as shown in **Figure ES.1**. The water treatment plant expansions will be incrementally larger than initially needed to allow for the growth of surface water delivered between expansions. All facilities will be designed to have a capacity of 125 % of the average surface water delivered to account for variations in daily and seasonal use.

Figure ES.1

SJRA Joint GRP Groundwater Reduction Strategy

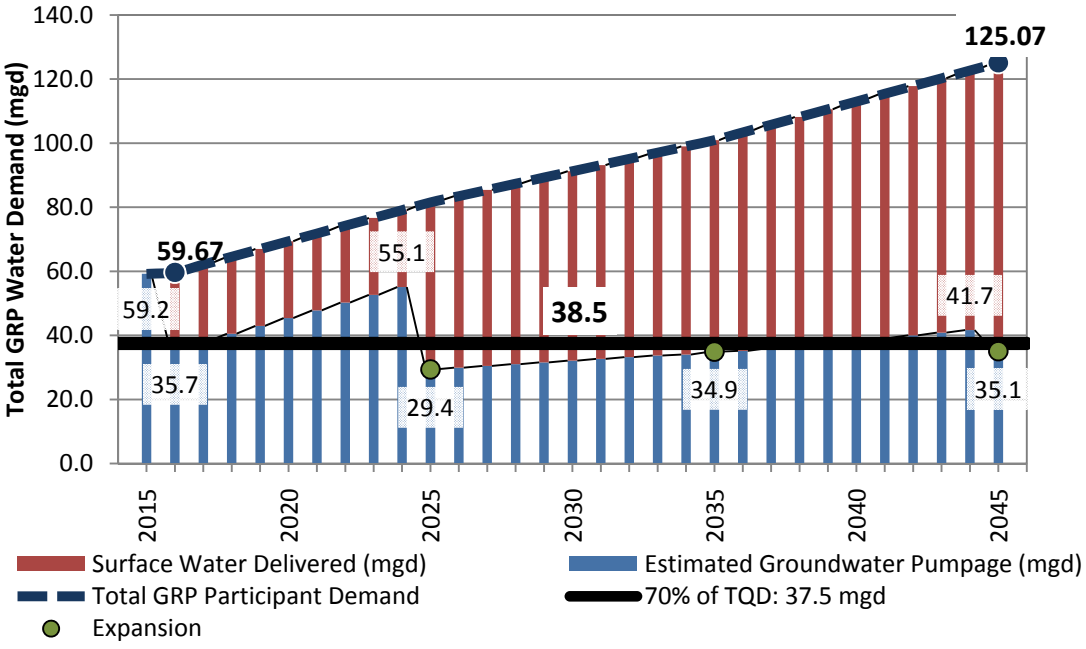


Table ES.3 shows the surface water conversion plan for 2016. For conversions after 2016, projected 2045 water demands were considered. Take points were selected based on existing facilities locations and discussions with the SJRA regarding Participants' desire to receive surface water.

Table ES.3

2016 Surface Water Conversion

Participant (Receiving Surface Water)	2016 Average Daily Demand (mgd)	Percentage of Surface Water (%)	Surface Water (Actual) (mgd)
The Woodlands	19.03	0.60	11.4
City of Conroe	11.86	0.60	7.1
West of I-45			
MC WCID No. 1	0.46	0.71	0.3
MSEC Enterprises	1.47	0.34	0.5
East of I-45			
City of Oak Ridge North	0.65	0.62	0.4
Southern MC MUD	1.94	0.72	1.4
Rayford Road MUD/MC MUD 99	2.05	0.60	1.2
Average Daily Demand Total	37.46		
Surface Water Supply			22.4
Surface Water Plant Design Capacity Factor (1.25)			28.0

The proposed surface water treatment facilities will include a raw water intake and pump station, water treatment plant and finished water storage with a high service pump station. Six different alternatives were considered for the location and design of the raw water intake and pump station and the recommended alternative was chosen based on a decision matrix with 12 criteria including costs, environmental permitting and overall constructability. The SJRA is currently engaged in process studies to determine the most feasible raw water treatment processes to be designed and constructed. The high service pump station will include a pump building, ground storage tanks and emergency power facilities. Several alternatives were reviewed for the design and layout for the high service pump station. **Appendix H** includes site plans for all of the facilities. The transmission system layouts are based on the Alternative Analysis previously completed by the SJRA. A hydraulic model was created to review the sizes and the layouts for all phases of the transmission system. **Exhibit 4** shows the system for all planning phases. The total 2016 Program costs are presented in **Table ES.4.**

Table ES.4

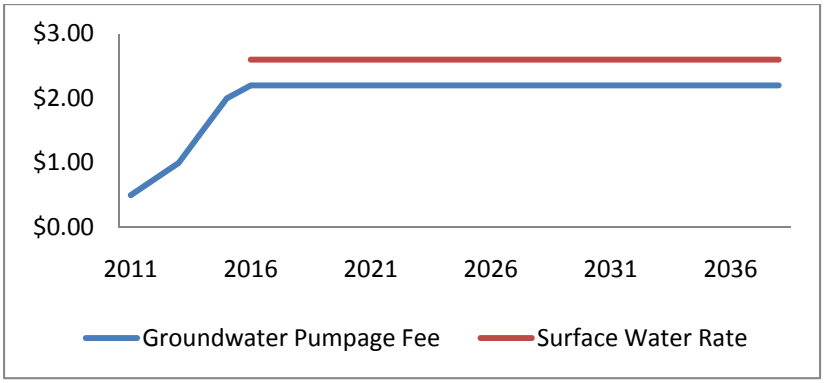
Summary of 2016 Program Costs

Facility	Project Cost (millions)
Raw Intake Structure & Pump Station	$26.83
Water Treatment Plant	$182.24
High Service Pump Station	$47.67
Transmission System	$234.67
Total	**$491.41**

The costs provided in **Table ES.4**, along with projected annual costs, were provided to the SJRA Joint GRP Financial Advisor. The financial advisor prepared a revenue bond program proforma to finance the SJRA Joint GRP Program. The projected groundwater pumpage fees and surface water rates in the proforma are presented in **Figure ES.2.**

Figure ES.2

Projected Groundwater Pumpage Fees and Surface Water Rates



As the figure shows, the groundwater pumpage fee shall increase to approximately $2.25/1,000 gallons, while the surface water rate shall be $2.65/1,000 gallons. The increment between surface water rate and groundwater pumpage is $0.40. This amount is based on the cost to operate and maintain a groundwater well. This ensures that the entities receiving surface water are paying the same amount as the entities using groundwater. A master program schedule can be found in **Appendix K**. Specific deadlines for the 2016 phase are included in **Table ES.5**.

Table ES.5

Initial Conversion Deadlines

Executed City of Houston contract	October 2009
WIF Funding	November 2009
Executing GRP contracts	July 2010
Submit GRP to LSGCD	April 2011
Transmission System Preliminary Engineering Completion	September
Water Treatment Plant PER Completion	November 2011
Intake Structure and Pump Station PER Completion	November 2011
High Service Pump Station PER Completion	November 2011
2011 Bond Sales	March 2011
Intake Structure and Pump Station Permitting Completion	March 2012
Transmission Environmental Services Completion	April 2012
Land Acquisition Completion	August 2012
Transmission System Design and Bid Phage Completion	October 2012
2012 Bond Sales	November 2012
High Service Pump Station Design, Permitting and Bid Phase Completion	May 2013
Water Plant Design and Bid Phase Completion	August 2013
Transmission System Construction Completion	June 2015
Water Plant Construction Completion	June 2015
High Service Pump Station Construction Completion	June 2015
Intake Structure and Pump Station Construction Completion	June 2015
Testing, Startup Completion	December 2015

Section 1
Introduction

1.1 Lone Star Groundwater Conservation District

In 2001, the Texas Legislature created the Lone Star Groundwater Conservation District (LSGCD) to conserve, protect, and enhance the groundwater resources of Montgomery County.

A preliminary estimate of 64,000 acre feet per year (afpy) as the sustainable yield for the aquifer in Montgomery County has been developed based on an assumed recharge rate of approximately 1.1 inches per year over the 697,600 acre area of the county. In 2003, the LSGCD adopted the 64,000 afpy estimate for the purposes of its Groundwater Management Plan, a state required plan to identify the water supply resources and water demands that shape the decisions of the LSGCD.

1.1.1 District Regulatory Plan – Phase I Rules

The LSGCD's next step in fulfilling its mission was creating and adopting Phase I of a District Regulatory Plan (DRP), which was completed in 2006. The DRP established a regulatory framework for the LSGCD to responsibly regulate and conserve the use of groundwater in Montgomery County and, along with the LSGCD's Rules, sets forth specific regulations or policies related to groundwater management and facilitating the use of alternative water sources within the boundaries of the LSGCD. In Phase I of the DRP, the LSGCD established a benchmark for the reduction of groundwater production within Montgomery County by requiring the total annual groundwater production to be reduced to a level equal to or less than 64,000 acre-feet by January 1, 2015. The annual rate of 64,000 acre-feet has been determined by LSGCD to be the sustainable recharge rate for the groundwater resources within Montgomery County.

1.1.2 District Regulatory Plan – Phase II

To begin reducing groundwater demand and encourage the conjunctive use of alternative water sources with groundwater supplies, the LSGCD adopted Phase II (A) of their DRP in February 2008. This included regulations requiring large volume groundwater users (LVGUs) to conduct long-term planning to reduce their groundwater dependency. An LVGU is defined in the DRP Phase II (B) as any person or entity that actually produced, or was authorized to produce, 10 million gallons or more of water from groundwater sources from within the LSGCD in calendar year 2009.

The results of that planning were to be presented to the LSGCD in a Water Resources Assessment Plan (WRAP) which assessed future water needs and described how alternative water supplies may be secured to meet future water demands and meet the groundwater reduction requirements established by the LSGCD. The WRAPs were to be composed of two major parts. Part I of the WRAP, required in September 2008, was to

include information about an LVGU's current and projected water demands, identify current water supplies, and describe current groundwater well capacities. Part II, required in March 2009, was to identify potential new water supply sources to meet projected water demands, describe infrastructure needed to deliver new supplies, establish a timeline and cost estimate to develop these new water supplies, and include a letter from the water supplier confirming the availability of the new water supplies.

To allow LVGUs to take advantage of potential economies of scale and to provide a potential vehicle for making future large-scale conversion efforts otherwise more practical, two or more LVGUs were permitted to enter into contractual agreements to make a collective assessment under the framework of a single, joint WRAP. There was no maximum number of LVGUs allowed to participate in such a joint WRAP, provided that all participants were inclusive to the plan for meeting the annual maximum 64,000 acre-feet groundwater production rate by the January 1, 2015 deadline.

Subsequently, Phase II (B) of the DRP, adopted by the LSGCD and amended in April 2010, revised parts of Phase I to require each LVGU in the LSGCD to reduce its groundwater production by January 1, 2016 to a volume that does not exceed 70 % of its Total Qualifying Demand.

1.1.3 Total Qualifying Demand & Initial Conversion Obligation

An LVGU's Total Qualifying Demand is the final volume of groundwater the permit holder is authorized under the terms of a LSGCD-issued permit to produce groundwater from the Gulf Coast Aquifer (Chicot, Evangeline, and Jasper aquifers) in calendar year 2009. The LSGCD requirement to produce no more than 70 % of an LVGU's Total Qualifying Demand during calendar year 2016 is referred to as the Initial Conversion Obligation.

Year 2016 water demand in excess of 70 % of an LVGU's Total Qualifying Demand must either be eliminated through documented conservation demand, supplied through utilization of an Alternative Water Source, or accounted for with a combination of both approaches. An Alternative Water Source means water other than groundwater produced from the portions of the Chicot, Evangeline, and Jasper aquifers that underlie Montgomery County, or any county that adjoins Montgomery County. An Alternative Water Source may include treated surface water (primarily for drinking water), wastewater effluent reuse (primarily for non-potable use), groundwater produced from a County beyond any adjoining County or groundwater produced from below the base of the Gulf Coast Aquifer's Jasper aquifer.

An LVGU that successfully meets its Initial Conversion Obligation will be allowed to meet post - 2016 water demand through increased groundwater production from within the LSGCD as long as the LVGU maintains an average groundwater production volume that does not exceed 70 % of its Total Qualifying Demand when averaged over the 2016-2045 planning period.

1.1.4 Groundwater Reduction Plan Requirements

To ensure adequate progress is made in appropriately planning for Initial Conversion Obligation compliance, and to assist the LSGCD in its water planning efforts, each LVGU must prepare and submit to the LSGCD a Groundwater Reduction Plan (GRP) no later than April 1, 2011. Each GRP must include specific information as provided for in the DRP Phase II (B) requirements that demonstrates an LVGU's proposed conversion efforts are reasonably feasible. Each GRP will be reviewed by the LSGCD, and those determined to meet all applicable requirements will be certified acceptable by the LSGCD.

As with the permissions granted by the LSGCD for WRAP submissions, two or more LVGUs may enter into contractual agreements to cooperate under the framework of a single, joint GRP to allow such LVGUs to take advantage of potential economies of scale and to provide a potential vehicle for making large-scale conversion efforts otherwise more practical. Using this approach, individual LVGUs may satisfy the requirements of the DRP as a group participant of a single GRP that, as an aggregated group, achieves full regulatory compliance with all applicable provisions of the DRP Phase II (B). For example, a joint GRP may provide that water demands for some individual participant LVGUs be met by using 100 % groundwater, as long as the combined joint GRP LVGUs achieve the LSGCD's mandatory conversion goals as a group by over-converting some of the participant LVGUs within that joint GRP.

There is no maximum number of LVGUs that may participate in a joint GRP. However, each joint GRP submitted to the LSGCD must include all requisite information for each LVGU that would otherwise be required of a LVGU if it was submitting an individual GRP. Each Joint GRP must include a joint GRP sponsor—a single LVGU representative that is principally responsible for development, submission, and implementation of a joint GRP.

On or before August 2, 2010, each LVGU must have submitted to the LSGCD a Declaration of Intent to submit a GRP—also referred to as a DOI. The DOI must inform the LSGCD whether it intends to submit an individual GRP that accounts only for its efforts to meet its Initial Conversion Obligation, or whether it intends to participate in a joint GRP with at least one other LVGU.

1.1.5 Safe Harbor

Any joint GRP that accounts for at least 10 % of the total water demand of all LVGUs within the LSGCD is considered a Safe Harbor GRP. Safe Harbor GRPs are joint GRPs of sufficient size to accommodate water demand growth within the LSGCD by incorporating persons or entities who become LVGUs after January 1, 2010 (such LVGUs are considered "new"). Safe Harbor GRPs that are not willing to accept a new LVGU attempting to join its joint GRP must, within 60 days of receiving a written request by the LSGCD, submit a statement in writing to the LSGCD and the new LVGU identifying the reasons for the denial. Such statement shall also provide an estimate of

the time, conditions, and circumstances, if any, under which acceptance of the new LVGU may be feasible.

1.2 History of San Jacinto River Authority Groundwater Reduction Planning

The San Jacinto River Authority (SJRA) lead an effort to prepare a Joint WRAP covering 198 of the 202 LVGUs in Montgomery County required to submit a WRAP to the LSGCD. Parts I and II of the Joint WRAP were submitted to the LSGCD in August 2008 and February 2009, respectively. Studies conducted as part of the Joint WRAP II determined that the most cost-effective source-water supply alternative to meet the LSGCD's groundwater reduction requirements is the use of SJRA's surface water rights in Lake Conroe in addition to the City of Houston's surface water rights in Lake Conroe via a long-term water supply contract.

1.3 San Jacinto River Authority Joint Groundwater Reduction Plan

This document is the SJRA's Joint Groundwater Reduction Plan (Joint GRP) and details SJRA's effort to meet the GRP requirements of the LSGCD's DRP Phase II (B). It includes many of the original 198 LVGUs included in the previously-prepared and submitted WRAP I and II who have also signed a GRP Contract with SJRA to be included in the SJRA's Joint GRP. This Joint GRP describes the Joint GRP area population and water demand projections, the identified and analyzed alternative water sources, the intake and pumping facilities, the raw water treatment facilities, treated water pumping facilities and treated water transmission system required to provide sufficient surface water to accomplish the conversion goals as mandated by the LSGCD, and the procedures and program for managing the Joint GRP. This Joint GRP includes discussion about SJRA's efforts regarding water demand management strategies to reduce water use and also regarding additional alternative water sources.

This Joint GRP represents the specific plan that the SJRA will follow in developing, securing, executing and managing all necessary financing and other contractual agreements, land and right-of-way acquisition, infrastructure design and construction, and any additional regulatory compliance required under the laws of the State of Texas or of the United States in order to meet its Initial Conversion Obligation.

SJRA has prepared this Joint GRP with the knowledge that water demands and growth patterns will consistently change in the future and, therefore, this plan will continuously be reviewed and updated as necessary. Water reuse, water conservation and identification of additional alternative water supplies will also continue to be reviewed, and this plan will change as these concepts are fully developed and subsequently incorporated into the overall program..

1.4 Participants

There are 202 LVGUs identified by the LSGCD in Montgomery County. SJRA contacted all 202 LVGUs and offered each a contract to participate in the SJRA Joint GRP. 140 have executed a Contract (Joint GRP "Participants") as of February 8, 2011.

Table 1.1 depicts the SJRA Joint GRP Participants. **Appendix A** lists all of the LVGUs in Montgomery County that are SJRA Joint GRP Participants. **Exhibit 1** is a map showing all the Participants included in this SJRA Joint GRP.

Table 1.1

SJRA Joint GRP Participants (as of March 25, 2011)

1404 Blaketree, LP	C & R Water Supply Inc (Clear Water Cove) fka Wagner Services
Aqua Texas, Inc. (Brushy Creek)	C & R Water Supply Inc (Emerson Estates) fka Wagner Services
Aqua Texas, Inc. (Carriage Hills)	C & R Water Supply Inc (Rogers Road WS) fka Wagner Services
Aqua Texas, Inc. (Cimarron Country)	C & R Water Supply, Inc. (Timberline Estates) (fka Wagner Services)
Aqua Texas, Inc. (Clear Creek Forest)	Cape Malibu Water Supply Inc.
Aqua Texas, Inc. (Crighton Ridge)	City of Conroe
Aqua Texas, Inc. (Crystal Forest)	City of Cut and Shoot
Aqua Texas, Inc. (Decker Woods)	City of Magnolia
Aqua Texas, Inc. (Deerwood Sub.)	City of Oak Ridge North
Aqua Texas, Inc. (Dogwood Hills)	City of Splendora
Aqua Texas, Inc. (Greenfield Forest)	City of Willis
Aqua Texas, Inc. (Huntington Est.)	City of Woodbranch
Aqua Texas, Inc. (Indigo Ranch)	Clover Creek MUD
Aqua Texas, Inc. (Lake Conroe Forest & Tejas Creek)	Conroe ISD (Moorehead Jr. High/Caney Creek High)
Aqua Texas, Inc. (Lake Conroe Village)	Conroe Resort Utilities, LLC (fka D L Utilities)
Aqua Texas, Inc. (Lake Creek Forest)	Consumers Water Inc. (Pioneer Trails)
Aqua Texas, Inc. (Legends Ranch Estates)	Consumers Water Inc. (Porter Terrace)
Aqua Texas, Inc. (Shadow Bay)	Consumers Water Inc. (Spring Forest)
Aqua Texas, Inc. (Timberloch Estates)	Corinthian Point MUD No.2
Aqua Texas, Inc. (Turtle Creek)	Cypresswood Estates Water System*
Aqua Texas, Inc. (Walnut Springs)	Del Lago Estates
Aqua Texas, Inc. (Westwood 1&2/Old Egypt)	Diamondhead Water & Sewer
Archdiocese of Galveston - Houston Circle Lake Retreat Center	Dobbin-Plantersville WSC*
C & R Water Supply Inc (Bridgepoint Water System) fka Wagner Services	Domestic Water Company

East Montgomery County Mud 3
Everett Square Inc. (Windcrest Est., Honea Egypt, Part of 1488 System)
Everett Square, Inc. (Shady Oaks)
Far Hills Utility District
Gallant GP, LLC (Wedgewood Golf Course) (fka Wedgewood Golf Course)
H.H.J., Inc / Decker Utilities
HMW SUD (Allenwood)
HMW SUD (Armadillo Woods)
HMW SUD (Coe Country)
HMW SUD (Hunters Retreat)
HMW SUD (Kipling Oaks 1)
HMW SUD (Kipling Oaks 2)
HMW SUD (Sendera)
HMW SUD (Towering Oaks)
Johnston's Utilities,Inc.
Keenan Water Supply Corp.
Kings Manor MUD
Lake Bonanza Water Supply Corp.
Lake Conroe Hills MUD
Lake South Water Supply
Lakeland Section 4 Civic Club
Lazy River Improvement District
MC Fresh Water Supply (Dist #6)
MC MUD No. 15
MC MUD No. 16
MC MUD No. 19
MC MUD No. 24
MC MUD No. 83
MC MUD No. 89 (Also MUD No. 88)
MC MUD No. 94
MC MUD No. 99
MC MUD No. 112
MC MUD No. 119
MC UD No. 2
MC WCID No. 1
MSEC Enterprises (Crown Ranch)
MSEC Enterprises (Highland Ranch/Lake Forest/Shoreline)
MSEC Enterprises (Montgomery Trace WS/Crown Oaks)
New Caney MUD
North Woods Water Supply Corp.
Northwest Water System (White Oak Valley)
Northwest Water Systems (Hazy Hallow East Estates)
Patton Village (East)
Patton Village (West)
Pinedale Mobile Home Community
Pinehurst Decker Prairie
Piney Shores Utility
Point Aquarius MUD
Quadvest, LP. (Benders Landing)
Quadvest, LP. (Creekside Village)
Quadvest, LP. (Indigo Lakes)
Quadvest, LP. (Lakes of Magnolia)
Quadvest, LP. 1 (Lake Windcrest WS)
Quadvest, LP. 1 (Mostyn Manor)
Quadvest, LP. 1 (Red Oak Ranch WS)
Quadvest, LP. 1 (Sendera Ranch)
Quadvest, LP. 2 (Lonestar Ranch)
Quadvest, LP. 2 (Northcrest Ranch 1,2 &3)

Quadvest, LP. 2 (Stonecrest Ranch)

Ranch Utilities (Caddo Village)

Rayford Road MUD

Roman Forest Consolidated MUD

San Jacinto River Authority (The Woodlands)

San Jo Utilities

Sequoia Golf Woodlands LLC (Lake Windcrest)(fka Lake Windcrest Golf Club)*

Sequoia Golf Woodlands LLC (Palmer)*

Sequoia Golf Woodlands LLC (Panther Trails)*

Sequoia Golf Woodlands LLC (Player)*

Sequoia Golf Woodlands LLC (TPC)*

Southern MC MUD

Southwest Utilities, Inc. (Texan American Water-Hidden Forest)

Southwest Utilities, Inc. (Texas American Water-Frontier Arrowhead)

Southwest Water Co.-Decker Hills/Park Place (fka Monarch)

Southwest Water Co.-Hulon Lake/Woodcreek Valley (fka Monarch)

Southwest Water Co.-Serenity Woods, Pine (fka Monarch)

Spring Creek UD

T & I Taylor, Inc. (River Club/River Ridge)

T & W Water Services (Deer Run)

T & W Water Services (Grand Harbor/Gemstone)

T & W Water Services (Harborside)

T & W Water Services (Hidden Springs Ranch)

T & W Water Services (Old Mill Lake)

T & W Water Services (Riverwalk)

T & W Water Services (Thousand Oaks)

Texaba Water System

Texas National MUD

Walnut Cove Water Supply Corp.

Washington County Railroad

Westwood North Water Supply

White Oak Utilities, Inc.

White Oak Water Supply Corporation

Woodland Oaks Utility Co. Inc.

*These entities are currently executing contracts with SJRA. Their populations and water demands have been included in this Joint SJRA GRP.

Section 2
Population and Water Demand

2.1 Population Projections

The DRP Phase II (B) requirement states that the population and water demand projections for each LVGU shall be based on data obtained from the Texas Water Development Board (TWDB). However, the DRP Phase II (B) does allow for alternative resources of data to be utilized if the source data is more reliable than the TWDB's data. The TWDB uses the Region H 2011 Water Plan as the basis for its data in Montgomery County. The Region H 2011 Water Plan provides population and water demand projections based on each county within its region. Each county is then broken out into Water User Groups (WUGs), undeveloped acreage (County Other), and non-residential flow such as irrigation and mining.

Population in the State of Texas is estimated to double by the year 2060. Montgomery County will also experience this type of growth and has been growing in the past. The projections between the 2006 and 2011 Region H Water Plans is approximately an 8% increase due to people moving into the County. The County growth is due to new developments and a growing commercial community within the County.

Population projections for this SJRA Joint GRP were first based on the Region H 2011 Water Plan as mentioned above. However, the Region H data did not break out population for non-WUG LVGUs individually, making it impossible to distinguish the projections for SJRA Joint GRP Participant non-WUGs from the data set. Therefore, alternative methods of population projections were used for non-WUGs. The second source for population projections was the Houston Galveston Area Council (HGAC). The HGAC projections are based on a land use model that utilizes a 1,000-foot by 1,000-foot grid. GIS tools were utilized to overlay the grid with the boundaries of SJRA Joint GRP Participants in order to develop projections of future population. Twelve SJRA Joint GRP Participants did not have Region H or HGAC population projections, but five of these are golf courses, civic clubs and POAs which will not have associated populations to project. For the remaining seven SJRA Joint GRP Participants without Region H or HGAC data, connection counts and historical pumpage quantities were evaluated to estimate the population projections. The individual population projection for each SJRA Joint GRP Participant is included in **Appendix A**. The source used to determine the population for each SJRA Joint GRP Participant is also included in **Appendix A.**

The population projection for Participants in the SJRA Joint GRP is summarized in **Table 2.1**.

Table 2.1

Population Projections
SJRA Joint GRP Participants

	2016	2025	2035	2045
GRP Participants				
WUG	274,105	336,153	390,565	452,571
Non-WUG	76,656	98,203	140,503	191,275
Total	350,761	434,356	531,068	643,846

2.2 Water Demand Projections

The water demand projected for WUGs in the Region H 2011 Water Plan was used to determine the SJRA Joint GRP water demand as indicated in **Appendix B**. The Region H 2011 Water Plan projects demands for 2010, 2020, 2030, 2040 and 2050; since the milestone years are 2016, 2025, 2035 and 2045, the demands in **Appendix B** were interpolated between the Region H 2011 Water Plan demand years.

As mentioned in **Section 2.1** (see page 8), the Region H 2011 Water Plan does not project water demands for individual non-WUG LVGUs; therefore, it was necessary to implement various methodologies for determining the future water demand projections of all non-WUG LVGUs. The available information for each LVGU was evaluated to determine which method would be used to calculate the projected demand. The information initially reviewed in determining the best water demand projection methodology included the following:

1. The 'character' of the water demand and whether the LVGU supplies water primarily to a residential population, or the water demand is based on land use (LU). All SJRA Joint GRP Participants were characterized as either "Muni" for municipal (i.e. the demand is based primarily on the residential population served) or "LU" for land use (e.g. industry, golf courses, etc.) and noted in "Demand Basis" (Column 5) of **Appendix B.**
2. Groundwater pumpage based on LSGCD records for 2007, 2008 and 2009 to determine current unit water demand (gallons per capita per day (gpcd)). Groundwater pumpage for 2007 through 2009 was available for most SJRA Joint GRP Participants. Whether 2007 through 2009 pumpage was available is indicated by "Y" for yes or "N" for no in "LSGCD 2007 – 2009 Pumpage" (Column 6) of **Appendix B.**
3. Number of connections based on responses to questionnaires returned by LVGUs characterized as "Muni". The SJRA sent questionnaires to all SJRA Joint WRAP Participants requesting projections of future population, projections of water demand, and other additional data. The data of greatest interest is the actual number of connections for each LVGU in 2007, which was used to determine current unit water demand (gallons per capita per day (gpcd)). If an LVGU population was not provided in the questionnaire

response, a population based upon three people per connection was assumed. Whether connection information was provided or not on the questionnaire response is indicated by "Y" for yes or "N" for no in "2007 Connect's" (Column 7) of **Appendix B**.

4. Projected water demand in 2045 based on SJRA Joint GRP Participants' responses to questionnaires. When information was available for projected 2045 water demand based on the Participant's response questionnaire, it is indicated with a "Y" in "2045 Demand" (Column 8) of **Appendix B**. When no data was received there is an "N" shown in Column 8.
5. HGAC population projections evaluated for LVGUs when available. These projections are shown in Columns 13 - 18 under "H-GAC Population" in **Appendix B.**

There were eight water demand projection methods determined from the information above. These methods are further described and numbered below:

1. Demand was input from the Region H 2011 Water Plan (except for Entergy, see method projection 8). The data was interpolated from the Region H 2011Water Plan to project the water demands at required DRP Phase II (B) milestones: 2016, 2025, 2035 and 2045.
2. Demand was determined by taking the greater of the average pumpage (2007 – 2009) or an interpolation between the average pumpage (2007 – 2009) and the 2045 demand projections based on questionnaire responses. Average pumpage (2007 – 2009) is the average of the LSGCD records for 2007 – 2009 that was discussed in Item 2 above.
3. Demand was determined by taking the greater of the average pumpage (2007 – 2009) or an interpolation between average pumpage (2007 – 2009) and the calculated Unit Demand multiplied by the HGAC population in 2045.
4. Demand was calculated using 128 gpcd times the HGAC population. (128 gpcd is the Region H Unit Demand for County Other).
5. Demand was calculated using 128 gpcd times the HGAC population in 2016. Years 2025 and 2035 were interpolated between the calculated 2016 and 2045 demands.
6. Demand was equated to the average pumpage (2007 – 2009) for all years. Demand remains constant through the planning period.
7. Demand was based on a "Special Value" entered into the table. Special values are based on comparison with similar entities.
8. Special consideration was given for Entergy. Entergy has indicated that approximately 7.0 MGD is the entire amount of surface water that they will use.

The initial water demand projection method used for each LVGU is noted in **Appendix B** under "Water Demand Projection Method" (Column 9).

After the water demands were calculated using the projection methods presented above, several entities' projected water demand values were reviewed based on 2008 GIS aerial data. A percentage of undeveloped acreage was calculated for each non-WUG LVGU based on the amount of undeveloped property seen on the aerials within each of their respective boundaries. The projected demand growth was then compared to undeveloped acreage to ensure the projected demands were reasonable. If the difference between the undeveloped acreage and the demand growth was greater than 25 %, the values established for that particular entity were given additional consideration.

For example, Demand Projection Method 2 was initially used for AquaTexas (Deerbrook Sub.), which incorporates the information provided in the entity's questionnaire. However, while the data from the questionnaire indicated a 200 % water demand growth, only 45 % of their service area was determined to be undeveloped acreage. This 155 % difference greatly exceeded the 25 % difference threshold established for further scrutiny. Since the HGAC projected population growth for AquaTexas was comparable to their available acreage, the water demand projection method was changed to Method 3.

A summary of the SJRA Joint GRP Participants' projected water demand is shown in **Table 2.2**.

Table 2.2

SJRA Joint GRP Participants Projected Water Demand (MGD)

2016	2025	2035	2045
59.67	73.77	85.21	97.37

2.3 New LVGU Growth Plan

This SJRA Joint GRP is considered a Safe Harbor GRP and therefore must provide for new LVGUs as defined by the LSGCD (see Section **1.1.5**, page 3). The total GRP water demands for 2025, 2035 and 2045 account for these new LVGUs with the inclusion of a "County Other" entity similar to the Region H 2011 Water Plan. The Safe Harbor County Other water demand was determined by subtracting the total existing LVGU water demand (Both Participants and Non-Participants) calculated above and the exempt categories (Irrigation, Livestock, Manufacturing and Mining) from the total county-wide Region H Water Demand for each projected year as presented in the Region H 2011 Water Plan.

The calculation for the Safe Harbor County Other is shown in **Table 2.3** and shows the amount of additional demand that may be required to be met in future years.

Table 2.3

Total SJRA Joint GRP Water Demand (MGD)

	2025	2035	2045
Region H Total Water	110.15	133.28	161.20
LVGU Total (Participants and Non-Participants)	99.11	113.97	129.81
Exemptions	3.29	3.59	3.69
Safe Harbor County Other	7.75	15.72	27.70
GRP Participant Demand	73.77	85.21	97.37
Total GRP Demand	81.51	100.93	125.07

The Phase 1 water plant will have a capacity of 30 mgd which provides an additional capacity of 2.00 mgd of Safe Harbor capacity to allow for any new LVGU's after January 1, 2010 and prior to January 1, 2016.

Section 3
Alternative Water Sources

3.1 Sources of Water

In January 2009, the SJRA published the "*Water Supply Potential Source Study*" comparing alternative water sources for accomplishing the groundwater reduction goals of the LSGCD. A copy of the "*Water Supply Potential Source Study*" is included as **Appendix C** to this GRP. A broad range of water supply sources were considered. Available water sources include groundwater and surface water in both the San Jacinto River and Trinity River Basins. Lake Conroe was included in many of the alternatives. Currently the SJRA owns 1/3 of the water rights of Lake Conroe (33,300 ac-ft per year or 30 mgd) and the City of Houston (COH) owns 2/3 of Lake Conroe's water rights (66,700 ac-ft per year or 60 mgd).

Various alternatives identified and analyzed include the following:

1. SJRA trade of its Trinity River Basin water rights for the City of Houston's (COH's) Lake Conroe water rights;

2. SJRA trade of its San Jacinto Basin water rights for the COH's Lake Conroe water rights;

3. SJRA's purchase of the COH's Lake Conroe water rights;

4. SJRA participation in the Luce Bayou project in exchange for use of the COH's Lake Conroe water rights;

5. SJRA enters into a Long-Term Contract with the North Harris County Regional Water Authority (NHCRWA) for receipt of treated surface water;

6. SJRA enters into a Long-Term Contract with the COH for Lake Conroe raw surface water;

7. SJRA enters into a Long-Term Contract with the Trinity River Authority (TRA) for raw surface water diverted from the Trinity River near Huntsville;

8. SJRA enters into a Long-Term Contract with the COH for Lake Conroe raw surface water as well as a Long-Term Contract with the TRA for raw surface "replacement" water diverted from the Trinity River near Huntsville; or,

9. SJRA enters into a Long-Term Contract for imported groundwater.

3.1.1 Comparison of Alternatives

Initial evaluation of alternatives resulted in four scenarios being carried forward for further evaluation. These four scenarios included long-term water supply contract for surface water with the COH, the TRA, both the COH and the TRA, and the importation of groundwater (Alternatives 6, 7, 8 and 9). For the purpose of comparing water sources, criteria were evaluated including preliminary diversion locations, water treatment, finished water storage and pumping, and transmission system line size and routing. Costs related to the implementation of each alternative were developed based on 2008 Dollars, and are shown in **Table 3.1**.

Table 3.1

Alternatives 6, 7, 8 and 9 Estimated Costs

	Current SJRA Conroe Rights (Beginning 2015) + Contract COH Water In Conroe (Beginning 2025)+ SJRA's Trinity River Rights Via Luce Bayou (2055)	Current SJRA Conroe Rights (Beginning 2015) + Contract TRA Water From Trinity U/S of Livingston (Beginning 2025) + SJRA's Trinity River Rights Via Luce Bayou (2055)	Current SJRA Conroe Rights (Beginning 2015) + Contract COH Water In Lake Conroe and TRA Water From Trinity U/S of Livingston (Beginning 2025) + SJRA's Trinity River Rights Via Luce Bayou (2055)	Contract Imported Groundwater (Beginning 2015) + Current SJRA Conroe Rights (Beginning 2045) + SJRA's Trinity River Rights Via Luce Bayou (2055)
Alternative	**6**	**7**	**8**	**9**
Phase	**Capital Costs (2008 Dollars)**	**Capital Costs (2008 Dollars)**	**Capital Costs (2008 Dollars)**	**Capital Costs (2008 Dollars)**
2009-2014 Planning	$100,088,000	$100,088,000	$100,088,000	$80,510,000
2015	$313,002,000	$313,002,000	$313,002,000	$246,547,000
2025	$63,690,900	$321,172,950	$346,192,350	$68,652,150
2035	$252,913,500	$252,913,500	$252,913,500	$269,415,300
2045	$154,747,950	$154,747,950	$154,747,950	$209,321,700
2055	$594,922,650	$594,922,650	$594,922,650	$594,922,650
Total	$1,479,365,000	$1,736,847,050	$1,761,866,450	$1,469,368,800
Phase	**Capital Costs (Dollars in Year Constructed)**	**Capital Costs (Dollars in Year Constructed)**	**Capital Costs (Dollars in Year Constructed)**	**Capital Costs (Dollars in Year Constructed)**
2009-2014 Planning	$110,347,000	$110,347,000	$110,347,000	$88,762,000
2015	$399,479,000	$399,479,000	$399,479,000	$314,664,000
2025	$132,409,000	$667,696,000	$719,709,000	$142,723,000
2035	$856,455,000	$856,455,000	$856,455,000	$912,336,000
2045	$853,592,000	$853,592,000	$853,592,000	$1,154,622,000
2055	$5,345,385,000	$5,345,385,000	$5,345,385,000	$5,345,385,000
Total	$7,697,667,000	$8,232,954,000	$8,284,967,000	$7,958,492,000
	Present Worth Value (2015 to 2060; 2008 Dollars)	**Present Worth Value (2015 to 2060; 2008 Dollars)**	**Present Worth Value (2015 to 2060; 2008 Dollars)**	**Present Worth Value (2015 to 2060; 2008 Dollars)**
	$2,996,691,827	$3,461,237,563	$3,900,374,038	$5,481,265,502

The most cost-effective source-water supply alternative is the use of SJRA water rights in Lake Conroe plus a long-term raw water supply contract with the COH for its water in Lake Conroe (Alternative 6). This alternative includes SJRA reserving the COH's 2/3 share of the water rights in Lake Conroe, except for any supply that was grandfathered for Entergy or irrigation contracts.

While it is anticipated that the final diversion locations, amounts, and infrastructure sizes and locations will vary from the baseline components developed in this study, these specifics will not prevent Alternative 6 from remaining the most cost-effective solution. Therefore, all of the permitted yield of Lake Conroe will be utilized to supply treated surface water in Montgomery County prior to the conveyance of water from additional sources into the county. Securing additional water supplies for future use will be presented to and considered by the SJRA Joint GRP Participants' Review Committee for further study and implementation.

3.1.2 COH Contract

The SJRA executed a long-term water supply contract with the COH on October 16, 2009 to supplement the surface water in Lake Conroe currently owned by the SJRA. The contract includes terms by which the SJRA reserves and purchases surface water from the City's portion of Lake Conroe. The COH will retain its surface water rights in Lake Conroe.

The following are terms included in the contract:

- The SJRA is to provide a written statement to the COH by November 1st of each year of the quantity SJRA intends to purchase and use for the year otherwise known as the Noticed Quantity. The Noticed Quantity shall be at least 33 % of the COH's yield starting in November 1, 2025.
- The remaining quantity of the COH's yield will be considered a reserved quantity for which the SJRA must pay a reservation fee. The reservation fee will be waived if the Noticed Quantity is at least 75 % of the COH's yield.
- All measuring equipment shall be paid for by the SJRA but will be maintained and calibrated by the COH.
- The SJRA will be responsible for all raw water facilities downstream of the measuring equipment maintained by the COH.

A copy of the Contract with the COH is included as **Appendix D** to this report.

3.2 Water Reuse Feasibility

The water supply needs for the 2016-2045 planning period does not depend on utilizing reuse as an alternative water supply. As the cost of compliance with existing regulations increases, the incentives for reuse will increase. Any water reuse project must consider at a minimum the cost effectiveness, the benefits to the SRJA Joint GRP Program and the SJRA Joint GRP Participants, and the long term feasibility and sustainability. Water

reuse may also have a significant future impact by delaying the need for future infrastructure.

An initial review of possible users of reclaimed water has been conducted. Potential users of reclaimed water include golf courses, property owners associations, Municipal Utility Districts (MUDs) that currently use groundwater for amenity lake maintenance and/or irrigation, and other irrigated areas such as school athletic fields and public and commercial landscaping. Sequoia Golf Woodlands LLC is currently executing a contract with SJRA to use wastewater effluent for a portion of their water demands.

All wastewater treatment plants were identified as potential sources of reclaimed water based on information for wastewater discharges permitted by the Texas Commission on Environmental Quality (TCEQ). **Exhibit 2** reflects numerous potential sources for the SJRA Joint GRP Participants.

The SJRA has drafted a policy regarding treated wastewater plant discharge water reuse that will be used to evaluate the potential for water reuse projects in the future. The objective of this policy is, "…to encourage the use of reclaimed wastewater for the purpose of reducing irrigation, amenity lake maintenance and other applicable demands which have historically been provided by the potable water system or by groundwater wells." Policy elements include the following:

- Evaluate all reuse projects on a case by case basis to determine benefits, feasibility, cost effectiveness and sustainability. This will include the matter of SJRA GRP Participant importing/exporting reclaimed water from/to a non-SJRA GRP Participant.

- Implementation of an incentive program to owners of groundwater wells for which production of those wells is reduced by reuse of wastewater effluent. The incentive may or may not include funding of the project, reduction in pumpage fee, reuse credits, or some other form as may be developed and adopted.

- Prohibit resale or redistribution of non-potable water supplied by SJRA (or a SJRA Joint GRP Participant) to other than the intended user without the written consent of SJRA.

- Ensure that reuse, does not negatively impact the SJRA Joint GRP, does not adversely impact SJRA's storage, diversion or other water rights; and complies with applicable laws, rules and regulations of all government bodies with jurisdiction, and is subject and subordinate to any future changes in such laws, rules and regulations.

- Refrain from endorsing or supporting water reuse projects, whether direct or indirect, that take advantage of Lake Conroe's storage and create a negative impact on the firmness of SJRA's water rights.

The draft policy is included in **Appendix E**.
SJRA is committed to review water reuse as an alternative future source of water. As water reuse projects are developed and implemented, their impact on future water needs will be evaluated.

3.3 Water Conservation

The water demand projected for the 2016-2045 planning period was based on current water use patterns with some limited water conservation projected by TWDB. This is a conservative approach because water use patterns will change as the cost of water increases and water conservation is promoted. With aggressive water conservation the infrastructure needs beyond the initial 2016 conversion can be delayed which in turn delays capital costs, extends the current water supplies, and allows the need for developing alternative water sources to be delayed. If water demand is decreased by approximately 10 % then there could be a decrease of approximately 10 % of the infrastructure costs.

SJRA has drafted a policy regarding water conservation to promote ongoing strategies for the Joint GRP Participants to reduce water consumption, limit unaccounted water, and protect existing and future water supplies. The objective of this policy is to establish and promote ongoing strategies for the SJRA Joint GRP Participants to reduce the volume of water withdrawn from water supply sources, to reduce the loss or waste of water, and to maintain or improve the efficiency of water use. Policy elements include the following:

- Collect, read, review and understand existing water conservation plans from all SJRA Joint GRP Participants that currently have one in place. Assist the SJRA Joint GRP Participants in developing, adopting and enforcing a water conservation plan at the retail level meeting the applicable minimum requirement of the SJRA and the TCEQ (TCEQ 30 T.A.C. Chapter 288; Subchapter A: Water Conservation Plans §§ 288.1 – 288.7, or any successor rules), as specified in the SJRA GRP Contract.

- Prepare a water conservation study to identify potential reductions in water demand and develop water conservation strategies and goals at the retail level for reduction in water demand.

- Develop a standard Water Conservation Plan (WCP) for the SJRA Joint GRP Program that all SJRA Joint GRP Participants can use as a guide at the retail level. Methods used to encourage water conservation must be cost effective such that the cost to reduce demand is less than the cost to develop new/additional water supplies.

- Implement a program requiring each SJRA Joint GRP Participant to demonstrate compliance with the adopted WCP including established water conservation strategies and reduction goals of the SJRA Joint GRP Program.

- Evaluate/establish penalties for not meeting those goals.

The draft policy is included in **Appendix F**.

As with water reuse, the SJRA intends to promote water conservation with the SJRA Joint GRP Participants in an effort to reduce water demand. The benefits of water conservation will continually be evaluated and discussed with the SJRA Joint GRP Participants.

3.4 Drought Contingency

The SJRA has drafted a drought contingency measures policy to establish and promote strategies for the SJRA Joint GRP Participants to reduce peak water demands and to extend the water supplies during prolonged periods of limited or nonexistent rainfall. The key to this drought contingency plan is the ability to identify drought conditions as early as possible and begin water use reduction immediately to minimize the impacts of the drought on water supplies. The elements of the policy include the following:

- Prepare a drought contingency study to identify potential reductions in peak water demand and develop drought contingency strategies and goals for reduction in peak water demands and extension of water supplies during drought conditions.

- Develop a standard Drought Contingency Plan (DCP) for the SJRA Joint GRP Program that all SJRA Joint GRP Participants can use as a guide.

- Collect, read, review and understand existing drought contingency plans from all SJRA Joint GRP Participants that currently have one in place. Assist the SJRA Joint GRP Participants that do not currently have one in place to adopt and enforce a drought contingency plan meeting the applicable minimum requirements of the SJRA and the TCEQ (TCEQ 30 T.A.C. Chapter 288; Subchapter B: Drought Contingency Plans §§ 288.20 – 288.22) as specified in the SJRA Joint GRP Contract.

- Implement a program requiring each SJRA Joint GRP Participant to demonstrate compliance with the established drought contingency goals.

- The program should evaluate/establish penalties for not meeting the DCP goals.

The draft policy is included in **Appendix G**.

Section 4
Infrastructure Requirements

4.1 Total Qualifying Demand

As mentioned in **Section 1.1.2** (see page 2), the DRP Phase II (B) requires each LVGU in the LSGCD to reduce its groundwater production by 2016 to a volume that does not exceed 70 % of its Total Qualifying Demand (TQD). The TQD is defined as the volume of groundwater that an LVGU was authorized under the terms of an LSGCD-issued permit to produce from the Gulf Coast Aquifer (Chicot, Evangeline and Jasper aquifers) in calendar year 2009. The TQD for the SJRA Joint GRP Participants is 54.9 mgd. Therefore, the maximum amount of groundwater allowed under Phase II (B) is 38.5 mgd (70 % of 54.9 MGD).

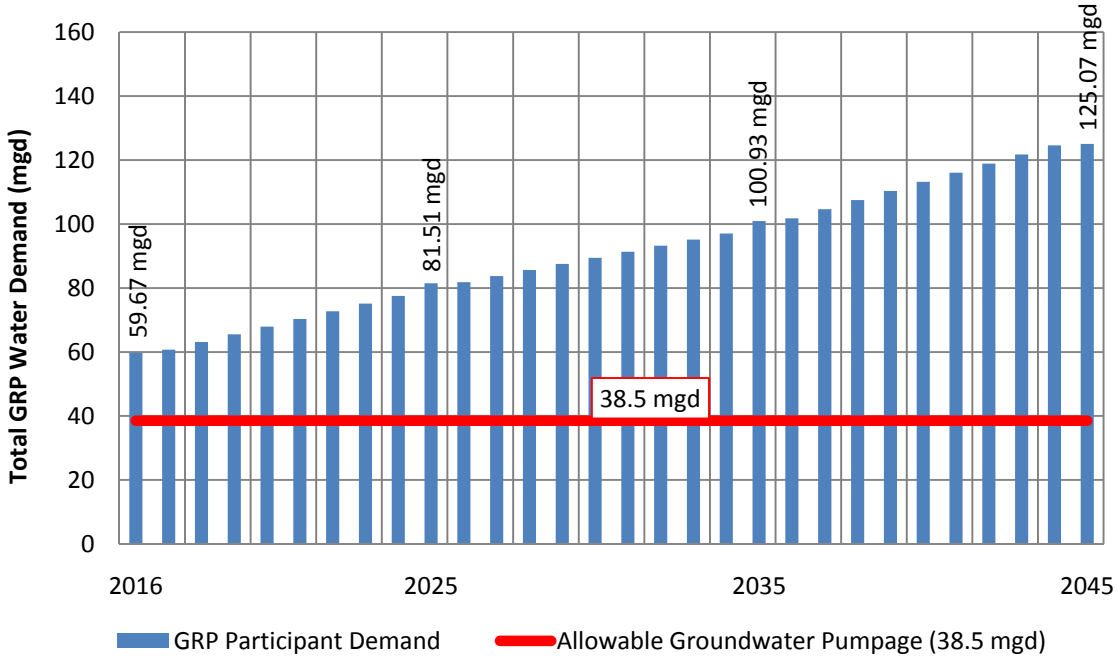
For the purposes of the development of the SJRA Joint GRP, reducing water demand through conservation and/or utilizing alternatives to treated surface water are assumed not to impact the size and location of the treated surface water infrastructure during the 2016 implementation of this SJRA Joint GRP.

However these water management strategies and alternative water sources will be identified and evaluated for incorporation into the plan in the future.

Figure 4.1 illustrates the total demand for the SJRA Joint GRP Participants from 2016 to 2045, and the average allowable groundwater use of 38.5 mgd through the planning period. The area of the total water demand above the horizontal line representing the maximum allowable groundwater use represents the ‘goal’ for surface water use.

Figure 4.1

Existing and Future Water Demands and Groundwater Compliance Goals



To achieve compliance with LSGCD regulations, the SJRA Joint GRP Participants must supply a quantity of alternative water (assumed to be entirely or mostly surface water in Phase 1) equal to the difference between the total SJRA Joint GRP Participants' projected 2016 water demand (the left most blue line in **Figure 4.1**) of 59.7 mgd and the allowable groundwater use of 38.5 mgd. Therefore, based on LSGCD's current regulation and implementation schedule beginning January 1, 2016, alternative water use must equal at least 21.2 mgd (59.7-38.5 = 21.2). For the planning period from 2025 through 2045, compliance is measured by supplying alternative water in sufficient quantity that the average groundwater use is less than or equal to 38.5 mgd. The groundwater reduction strategy to accomplish this requirement is described below.

4.2 Groundwater Conversion Strategy

To date, 140 LVGUs have joined together with the SJRA to participate in this Joint GRP. A joint approach provides the following benefits:

- allows the SJRA Joint GRP Participants to develop the most cost-effective and reliable solution to meet the regulatory goals; and,
- takes advantage of the economy of scale that can be realized by building larger treatment and transmission facilities at a lower cost per unit of capacity.

The most cost-effective solution is based on over-converting the SJRA Joint GRP Participants with large volumes of groundwater demand. Using this approach benefits all the SJRA Joint GRP Participants, especially small, remote users to whom it would be cost-prohibitive to convey surface water. Effectively, this approach will replace the majority of the groundwater currently used by the City of Conroe, The Woodlands, and other areas more readily accessible along the I-45 Corridor.

Referring back to **Figure 4.1**, the surface water required is represented by the area between the GRP Participant water demand (the vertical blue lines) and the allowable Groundwater Pumpage of 38.5 mgd (the horizontal red line). However, as described in **Section 2.3** (see page11), subsection B.4 (b) of the LSGCD's Regulatory Plan, LVGUs are allowed to provide for growth (of demand) on groundwater between surface water expansions. Therefore, the strategy utilized in this SJRA Joint GRP proposes that groundwater use will be permitted to grow between scheduled expansions of surface water treatment and transmission system capacity.

For the purposes of this SJRA Joint GRP, the minimum average surface water to be delivered at the milestones is: 21.2 mgd in 2016; 52.2 mgd in 2025 (more than the general LSGCD requirement of 42.4 mgd); 66.0 mgd in 2035 (more than the general LSGCD requirement of 61.5mgd); and 90.0 mgd in 2045. The initial capacity of the water treatment plant is planned for 30 mgd. This will allow for peak demands and will allow for any Safe Harbor County Other prior to 2016. In order to meet the requirement to average less than 38.5 mgd of groundwater pumpage, the increase in demand between 2025 to 2035 and 2035 to 2045 will be met with surface water and groundwater. The capacity of the water treatment plant expansions will be larger than initially needed to allow for the growth of surface water delivered. To meet the groundwater reduction requirement, the surface water treatment and transmission systems must have a capacity equal to 125 % of the average surface water to be delivered. This capacity is necessary to account for variations in daily and seasonal use.

Figure 4.2 graphically illustrates the groundwater reduction strategy with the graph showing the total groundwater pumpage on an annual basis.

Figure 4.2

SJRA Joint GRP Groundwater Reduction Strategy

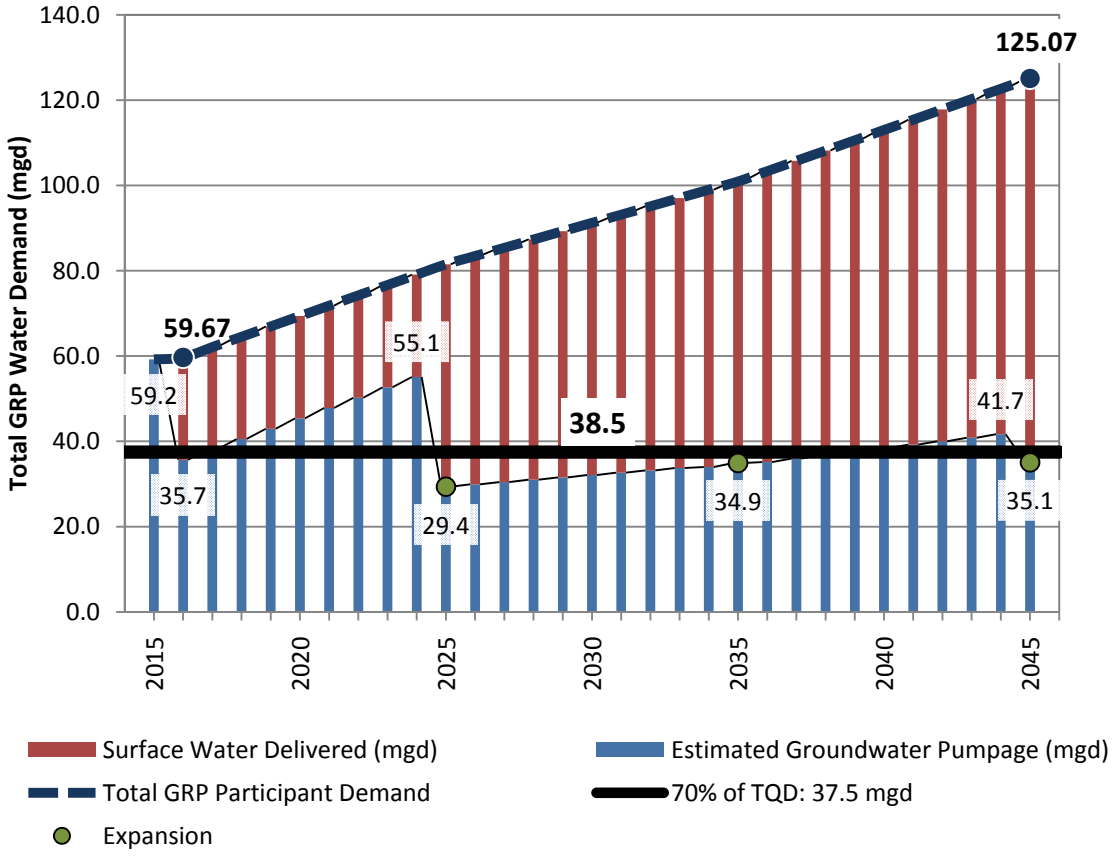


Figure 4.2 shows the maximum groundwater use prior to, and the minimum groundwater use following, major expansions of surface water treatment capacity upon which the groundwater reduction strategy is based. These values provide the foundation for **Table 4.1** demonstrating that average groundwater use over the planning period (2016 through 2045) is less than 38.5 mgd as required by the LSGCD.

Table 4.1

Projected Annual Groundwater Pumpage

Year	Groundwater Used (mgd)	Year	Groundwater Used (mgd)
2016	35.7	2031	32.6
2017	38.1	2032	33.2
2018	40.5	2033	33.7
2019	43.0	2034	34.0
2020	45.4	2035	34.9
2021	47.8	2036	35.1
2022	50.2	2037	36.0
2023	52.7	2038	36.8
2024	55.1	2039	37.6
2025	29.4	2040	38.4
2026	29.9	2041	39.2
2027	30.5	2042	40.0
2028	31.0	2043	40.8
2029	31.6	2044	41.7
2030	32.1	2045	35.1
		Total	1,142
		Average	**38.1**

The conversion strategy also addresses the identification of existing SJRA Joint GRP Participant facilities to receive surface water. The approach develops the most cost-effective and reliable solution to meet regulatory goals and ensures delivery of the minimum surface water requirement stated above. The City of Conroe's average daily water demand will be partially converted from groundwater by delivering surface water to six of Conroe's existing water plant facilities to account for approximately 60 % of the City's average daily demand by 2016. Additionally, The Woodlands will be converted to approximately 60 % surface water by 2016 with surface water delivery to all existing water plant facilities in The Woodlands. The City of Conroe and The Woodlands surface water conversion will equal 18.5 mgd of the minimum 20.8 mgd reduction requirement (88.9 %).

Other entities were added to the initial 2016 system to meet the remaining surface water requirement (21.2-18.5 = 2.7 mgd). During the selection of existing Participant water plant facilities, consideration was given to:

- minimizing the transmission system length;

- delivering surface water to the SJRA Joint GRP Participant's groundwater storage facilities (not wells pumping directly to the distribution system or to elevated storage);
- delivering surface water to groups of the SJRA Joint GRP Participants in relatively close proximity to one another; and,
- delivering surface water to the SJRA Joint GRP Participants whose expressed desire to receive surface water provides the greatest SJRA Joint GRP Participants benefits.

The "Contract for Groundwater Reduction Planning, Alternative Water Supply, and Related Goods and Services By and Between the San Jacinto River Authority and [Participant]" (SJRA GRP Contract) states that a Participant shall not be required to take surface water in excess of an amount equal to 90 % of the average daily amount of groundwater supplied during the low-demand period. The low-demand period is the period of three consecutive calendar months in the two preceding calendar years. The low-demand percentages for several entities were calculated and used to determine the minimum amount of surface water that will be supplied to them in 2016.

Using the above considerations, five additional SJRA Joint GRP Participants were chosen to receive surface water in 2016: MSEC Enterprises, Montgomery County WCID No. 1, Southern Montgomery County MUD, City of Oak Ridge North, and Rayford Road MUD. A summary of their surface water conversion is included in **Table 4.2**. The average daily flow for surface water conversion in 2016 is 22.4 mgd.

Table 4.2

2016 Surface Water Conversion

Participant (Receiving Surface Water)	2016 Average Daily Demand (mgd)	Percentage of Surface Water (%)	Surface Water (Actual) (mgd)
The Woodlands	19.03	0.60	11.4
City of Conroe	11.86	0.60	7.1
West of I-45			
MC WCID No. 1	0.46	0.71	0.3
MSEC Enterprises	1.47	0.34	0.5
East of I-45			
City of Oak Ridge North	0.65	0.62	0.4
Southern MC MUD	1.94	0.72	1.4
Rayford Road MUD/MC MUD 99	2.05	0.60	1.2
Average Daily Demand Total	37.46		
Surface Water Supply			22.4
Surface Water Plant Design Capacity Factor (1.25)			28.0

For conversions after 2016, projected 2045 water demands were considered in the determination of facilities to connect to the ultimate conversion strategy. The SJRA Joint GRP Participants were added based on similar conditions stated above.

The conversion strategy, as described earlier in this section, outlined the regulatory requirements for surface water treatment capacity to meet regulatory requirements. Surface water will be delivered up to approximately 80 % of the volume of the SJRA Joint GRP Participant's annual water demand after 2025. Due to the daily and seasonal variation in water demand, the water supply system must be designed to convey 125 % of the average daily surface water to be delivered to meet the groundwater reduction regulations. Each water user will continue to use groundwater to meet peak demand rates, but more SJRA Joint GRP Participant water plants will receive treated surface water to balance any localized groundwater usage increases and ensure that the regulatory requirements are met.

As previously stated this strategy is conservatively based on using surface water to meet regulatory requirements. Water demand strategies such as water conservation and other alternative water supplies will be reviewed and evaluated to determine if other methods can be more cost effectively integrated into the SJRA Joint GRP Program.

4.3 Treatment Facilities and Transmission System

4.3.1 Surface Water Treatment Facilities

The SJRA Joint GRP provides preliminary information regarding the proposed capacity of surface water treatment infrastructure and treatment processes. The proposed surface water plant facilities will include a raw water intake and pump station, water treatment plant and finished water storage with a high service pump station.

4.3.1.1 Raw Water Intake and Pump Station

The SJRA has completed a *"Lake Conroe Raw Water Intake and Pump Station Alternative Analysis."* The purpose of this report was to determine a recommended intake and pump station alternative. Six alternatives were evaluated for location and design of the intake structure and pump station as shown in Figure 4.1 in **Appendix H**. Options 1 and 2 included a pump station immediately downstream of the dam that draws water from the lake through the existing service outlet. Option 3 is a pump station located at the east end of the dam with a channel dredged to the dam. Option 4 is a pump station located near the east end of the dam with three intake pipes tunneled into the lake. Option 5 is a pump station on a platform over the lake with an access bridge from the dam. Option 6 is a pump station on a platform and the access to the pump station is by a bridge from the lake shore at the east end of the dam.

A decision matrix with 12 criteria was used to determine the best alternative. The criteria included items such as cost, environmental permitting and overall constructability of the project. Based on the results of the decision matrix, the recommended option is a pump station on a platform over the lake with an access bridge from the dam (Option 5). These facilities will include emergency power.

4.3.1.2 Water Treatment Plant

The water treatment plant will be located at the Lake Conroe dam and the raw water source will be Lake Conroe. The SJRA has purchased additional land to add to existing land for the water treatment plant site and is currently engaged in process studies to determine the most feasible raw water treatment processes to be constructed from the design of the surface water treatment plant. The process studies include a TCEQ-approved pilot plant that will complete raw water testing in February 2011. Final process selections, loading criteria, tank sizes, and configurations will be developed at the conclusion of the process selection in March 2011. The processes being considered in the pilot study are as follows:

- a Meurer Research Inc. plate settler
- Aluminimum Chlorohydrate coagulation
- GE ZeeWeed 1000 Membrane Treatment System (compact vacuum system hollow-fiber membrane system)

- Pall Microza hollow-fiber membrane (positive pressure system hollow-fiber membrane system)
- a Kruger Ceramic Membrane Treatment System (positive pressure ceramic membrane system),
- Conventional clarification
- MIEX ion exchange
- Ozone generation
- Granular Activated Carbon filter
- Biological Filter

Current cost estimates were based on assumed units of pretreatment, sedimentation, ozone, disinfection, filtration, polishing, finished water storage and pumping, waste stream processing, filter backwash clarification, and sludge handling facilities. The facilities will be equipped with emergency power. Once the final process is selected the plant will built based on the average daily flow with the ability to turn down capacity to 50 % of the average daily flow and provide a peak of 1.25 times the average daily flow. These facilities are shown in the preliminary water treatment plant site planning exhibit in **Appendix H.**

The proposed surface water plant is anticipated to be built in phases in conjunction with the expansion dates provided in **Figure 4.2** above. The first phase is currently planned for 24 mgd average daily flow with a 30 mgd peak flow. The ultimate capacity of the facility is estimated at 90 mgd average daily flow with a 120 mgd peak flow.

4.3.1.3 High Service Pump Station

The SJRA has completed a draft *"SJRA Water Treatment Plant High Service Pump Station Conceptual Design Report."* The major facilities provided as part of the High Service Pump Station (HSPS) will include a pump building, primary electrical service, emergency power facilities, hydro-pneumatic tanks, ground storage tanks, and associated yard piping. The expansion for the high service pump station will parallel the expansion to the water treatment plant.

Ground storage tank capacity will be provided to satisfy 12 hours of water demand with each phase. The pump station will include 8 pumps for the initial phase and pumps will meet the maximum capacity and operating pressure of the system. The pump station will work as a dual-pressure system in the initial phase because the pressures vary from the east and west sides of the system. The pump station will also include emergency power for every phase. The facilities for the pump station are included in the water treatment plant site planning exhibit in **Appendix H**.

The SJRA evaluated several different building layout alternatives and their associative costs. The recommended alternative was chosen because it allows for an external discharge header and results in easier, less expensive construction and maintenance.

Discharge header arrangement alternatives and electrical system phasing plan alternatives were also considered.

An emergency power system will be included as part of the HSPS. The proposed external generator pad area is large enough to accommodate up to six large generators to support the facilities.

4.3.2 Water Transmission System

Water demands for the SJRA Joint GRP Participants were identified in **Section 2.2** (see page 11). As also described in a previously prepared report, *"Joint Water Resources Assessment Plan –Alternative Analysis"* (Alternative Analysis), alternative pipeline systems were laid out based on the corridors investigated, and hydraulic modeling was used to preliminarily size proposed transmission lines. The Alternative Analysis of the proposed water transmission pipeline routing corridors included a preliminary investigation of each for engineering considerations. These considerations included items such as urban vs. rural construction environment, potential underground and overhead conflicts, stream and transportation crossings, and other observable surface impacts (i.e., schools, commercial areas). Additionally, environmental assessments of these corridors identified and/or described conditions found in terms of the following categories:

- soils and major vegetation communities,
- threatened or endangered species,
- potential waters of the United States,
- cultural, historic, and archeological resources,
- hazardous materials, and
- existing land uses.

Project costs were applied to each alternative and the present worth of future annual costs, including debt service, purchased water, and operation and maintenance, were determined. From the Alternative Analysis, the T1 alignment was selected as the preferred main transmission line alignment linking Lake Conroe to The Woodlands and the W2 alignment was selected as the preferred route through The Woodlands. The T1 route runs south of State Highway 105 along McCaleb Road to Fish Creek Thoroughfare to Sendera Ranch Drive and connects to the W2 route at Research Forest Drive. The MSEC Enterprises connection is along T1. The W2 route splits west from the south T1 terminus along FM 2978 and east along Research Forest Drive and then runs south along Grogans Mill Road. The W2 route connects all of the Woodland Plants, MC WCID No. 1 and Southern MC MUD Water Plant No. 2. The OR1 route was added after the Alternative Analysis, and it parallels the railroad tracks east of I-45 in the Woodlands. The OR1 alignment connects the City of Oakridge North, Southern MC MUD Water Plant No. 3 and Rayford Road MUD.

The Conroe alignment consists of several "C" routes including C2, C3 and C4 serving six Conroe water plants. The C2 route is located north-south along a pipeline corridor on the northwest side of the City of Conroe serving Water Plant No. 21 at its north terminus. The route continues south along the pipeline corridor and connects to Longmire Road near FM 3083 and extends to City of Conroe Water Plant No. 6. Routes C3 and C4 are east-west routes linked to City of Conroe Water Plant Nos. 20 and 22 along FM 3083, and Water Plant No. 15 along FM 830, respectively.

Additional take points were added to the system to account for the surface water delivery requirement for the milestone years of 2016, 2025, 2035 and 2045. As discussed in **Section 4.2** (see page 23), in 2016, the take points were selected based on existing facility locations and discussions with SJRA regarding Participant desire to receive surface water and SJRA Joint GRP Participants benefits. The take points for the subsequent milestone years were chosen based on Participant demand and proximity to the selected water transmission system alignment. **Table 4.3** is a list of the entities proposed as 2025 take points. Future take point will be identified as future phases are planned.

Table 4.3

2025 Take (Delivery) Points

LVGU

Aqua Texas, Inc. (Carriage Hills)
Aqua Texas, Inc. (Cimarron Country)
Aqua Texas, Inc. (Crighton Ridge)
Aqua Texas, Inc. (Crystal Forest)
Aqua Texas, Inc. (Lake Creek Forest)
Aqua Texas, Inc. (Lake Conroe Forest & Tejas Creek)
Aqua Texas, Inc. (Lake Conroe Village)
Aqua Texas, Inc. (Legends Ranch Estates)
Aqua Texas, Inc. (Westwood 1&2/Old Egypt)
Conroe Resort Utilities, LLC (fka D L Utilities)
Consumers Water Inc. (Spring Forest)
Diamondhead Water & Sewer
HMW SUD (Sendera)
Lake Bonanza Water Supply Corp.
Lakeland Section 4 Civic Club
Lake South Water Supply
MC MUD No. 19
MC MUD No. 19
MC MUD No. 19
MC MUD No. 89 (Also MUD No. 88)
MC MUD No. 112
MC MUD No. 119
MSEC Enterprises (Montgomery Trace WS/Crown Oaks)
MSEC Enterprises (Highland Ranch/Lake Forest/Shoreline)
Southwest Water Co.-Decker Hills/Park Place (fka Monarch)
Piney Shores Utility
Quadvest, LP. (Creekside Village)
Quadvest, LP. 1 (Lake Windcrest WS)
Quadvest, LP. 1 (Red Oak Ranch WS)
Quadvest, LP. 1 (Sendera Ranch)
Spring Creek UD
T & W Water Services (Grand Harbor/Gemstone)
Woodland Oaks Utility Co. Inc.
Westwood North Water Supply

The main water transmission lines and associated lateral lines to the SJRA Joint GRP Participant take points were sized with the aid of WaterGEMS, a water distribution modeling software, to verify velocities, internal water pressures and water travel time through the system. **Exhibit 3** shows the SJRA Joint GRP Participants and proposed water line diameters for the 2016 system. **Exhibit 4** shows the system for all planning period phases.

4.3.3 Water Line Easements

At this time, the SJRA plans to purchase water line easements for all proposed transmission systems. Proposed water line easement widths adjacent to acceptable means of public access are assumed to be 20 feet with 30 feet wide temporary construction easements. All other easements are assumed to be 30 feet wide and will utilize a 20 foot wide temporary construction easement. The majority of the easements acquired will be 20 feet wide since most of the proposed water line easement locations will be adjacent to public rights-of-way. The SJRA is completing an environmental assessment of the finalized transmission line corridor routes for the 2016 system.

4.3.4 Surface Water Receiving Water Plant Connections

Modifications to the take points will need to be made. Disinfection systems at the water receiving plants may be converted from chlorine to chloramines.

Meter and control valve stations will be installed at each SJRA Joint GRP Participant's receiving plant that will be owned, operated and maintained by the SJRA.

Other modifications will include yard piping, measuring equipment and ground storage tank overflow weir modifications.

Section 5
Groundwater Reduction Plan Management

5.1 GRP Contract Provisions

The intent of the SJRA GRP Contract between the SJRA and participating LVGUs (Participants, including SJRA) is to ensure that Participants in the SJRA Joint GRP adequately reduce their withdrawal of groundwater to achieve and maintain compliance with the LSGCD's groundwater withdrawal reduction requirements. The SJRA GRP Contract further provides that the SJRA will implement and enforce the SJRA Joint GRP on behalf of all Participants. The SJRA GRP Contract provides a funding mechanism for the implementation of the SJRA Joint GRP by and through SJRA's adoption and collection of fees for pumpage from regulated groundwater wells and surface water provided by SJRA, if any. The SJRA GRP Contract also establishes and sets forth the organization of a Review Committee, states the qualifications necessary to elect a Review Committee member, and defines the Committee members' authorities and responsibilities. The contract template is included as **Appendix I.**

Compliance with the LSGCD regulations depends on the Participant's annual groundwater pumpage not exceeding the projected quantities. If any Participant takes more groundwater than is authorized under the GRP or fails to take any action required under the contract, under the GRP, or other applicable rules, laws, or regulatory requirements, which results in any fee, fine, penalty, charge, judgment, or assessment to or against the SJRA, then the Participant shall reimburse the SJRA, together with interest. Continued failure to perform in compliance with the Contract will subject the participant to remedies described in the Contract. The amount of groundwater authorized under the GRP is the Participant's permitted amount of groundwater.

5.2 GRP Costs

As mentioned in **Section 4.3** (see page 26), the SJRA has completed draft studies to determine the components and the costs for each water treatment facility and water transmission system. These reports included estimated costs for the construction of the facilities in 2010 dollars. All construction projects are scheduled to begin construction in 2012. Inflation was applied to these construction costs at a rate of 3 % to increase.

These construction costs do not include professional costs associated with planning, design, bidding and financing projects, engineering, surveying, geotechnical studies, permitting and mitigating, construction management, or materials testing. These soft costs related to planning and construction, including permitting and mitigation, are estimated as 25 % of construction costs.

Total project costs included in this report contain construction with contingencies inflated to construction year dollars, professional services fees, and land acquisition. Land

acquisition costs are included in the water treatment facility and water transmission system as discussed in **Sections 5.2.1.2** and **5.2.2.2** (see pages 33 and 35).

5.2.1 Cost of Water Treatment Facilities

5.2.1.1 Raw Water Intake and Pump Station

In the study, "*Lake Conroe Raw Water Intake and Pump Station Alternative Analysis,"* six alternative pump station structure configurations at various locations were evaluated. Construction costs and operation and maintenance (O&M) costs were prepared as part of this evaluation and used as a criteria component in the decision matrix.

The recommended option entails a pump station on an elevated platform over the lake with an access bridge from the dam roadway. The construction costs were determined with information obtained from general and specialty contractors. The estimated Phase 1 construction cost is approximately $19.7 million. The total project costs (including construction, engineering and contingencies) for this facility is estimated at approximately $26.83 million.

5.2.1.2 Water Treatment Plant

As mentioned in **Section 4.3.1.1** (see page 26), the SJRA is currently performing process studies to determine the most cost-effective and technically appropriate treatment process to be implemented by the proposed water treatment plant. Accordingly, the exact treatment process to be utilized has not been selected. The SJRA has however completed a cost estimate for the raw water treatment plant facilities based on preliminary findings contained in the report titled, *"San Jacinto River Authority Surface Water Treatment Plant Memorandum Report."*

This preliminary report provides a construction cost estimate for four construction phases of the treatment plant and annual operation costs for Phase 1 of the treatment plant. The estimated construction cost for Phase 1 of the water treatment plant is approximately $132.1 million. The land for this plant has been purchased at a cost of $1.74 million. The total project cost (including, construction, engineering, land and contingencies) for this facility is $182.24 million.

5.2.1.3 High Service Pump Station

The *"Draft Conceptual Design Report SJRA Water Treatment Plant High Service Pump Station"* includes an alternative recommendation for major facilities to be provided as part of the HSPS, including a pump and electrical room building, primary electrical service, emergency power facilities, hydro-pneumatic tanks, ground storage tanks and associated yard piping. Based on the selected alternative and the conceptual design, the Phase 1 construction cost for the pump station is approximately $38.5 million. The total project cost (including construction, engineering and contingencies) for this facility is $47.67 million.

5.2.2 Water Transmission System

5.2.2.1 Water Transmission Lines

Detailed cost estimates were produced for each corridor or segment of water transmission line for Phase 1 conversion. A detailed cost estimate for each phase includes a core set of unit items. Pricing basis and pricing are summarized below.

- Mobilization, including bonds and insurance, was estimated at 4 %, which is the industry standard used for estimating.
- Traffic control was estimated based on bid tabulation data from Greater Houston Galveston Area (GHGA) regional water authority projects (2005 to 2009 bids) with similar scopes of work.
- The estimated construction costs for clearing and grubbing and site restoration are based on bid tabulation data from similar GHGA regional water authority projects (2005 to 2009 bids). Two different unit prices were utilized based on whether the area to be cleared is urban and open field or rural and forested. The area for clearing and grubbing was calculated by assuming a 20-foot temporary construction easement adjacent to permanent easements.
- Groundwater control was assumed for all open cut construction and the unit price was based on similar GHGA regional water authority work (2005 to 2009 bids).
- A trench safety system was included for water line construction at all depths.
- Temporary construction access roads were included in segments that have limited access due to private property located adjacent to the alignment.
- Permanent access gates were included in each segment for access from public right-of-ways and when crossing interior property lines. GIS aerial plots were used to estimate the number of gates required.
- Water line unit prices were based on bid tabulation data from similar GHGA regional authority projects (2005 to 2009 bids). Regional pipe manufacturers were also contacted for pricing of pipe materials, while local contractors were contacted for installation costs. Different unit prices were developed for each pipe size and installation method (open cut, trenchless construction, and casing in trenchless construction). Larger pipes sizes were estimated based on Concrete Cylinder Pipe (CCP) and smaller pipe sizes were planned for Polyvinyl Chloride (PVC) pipe. Trenchless construction was assumed for pipelines crossing existing features such as roadways, waterways and railroads. Quantities of pipeline were taken from the WaterGems hydraulic model.
- Projects were categorized as “Urban” or “Rural” construction based on quantities of pavement, curb, construction exits, clearing & grubbing, fence replacement, inlet protection, use of sod to restore residential areas, utility relocations, and traffic control. GIS aerial plots were used to determine the level of development along the preferred alternative. Sections of pipe in developed areas were considered to have higher costs associated with construction in urban areas.

Conversely, pipelines in minimally developed areas were assumed to have lower costs associated with simpler construction in rural areas. For the initial phase, there was a $40 per linear foot differential applied to pipelines that were constructed in developed areas.

- Cathodic protection system bid prices were based on similar GHGA regional water authority work (2005 to 2009 bids).
- Butterfly valves were assumed to be placed in the system every 2,500 linear feet (LF) for water lines 20-inch or larger and gate valves were assumed every 2,000 linear feet for water lines 16-inch or smaller. The butterfly valves include manways for the operators. Unit prices for these valves were based on bid tabulation data from similar GHGA regional authority projects (2005 to 2009 bids).
- Construction prices for combination air release and vacuum relief valves with service manholes, access manways with service manholes, and drain valves with service manholes were estimated based on similar GHGA regional water authority projects (2005 to 2009 bids).
- Each segment will be disinfected, hydrostatically tested and will include storm water pollution prevention plans. The costs for these items were estimated based on similar GHGA regional authority projects (2005 to 2009 bids).
- A temporary water line for hydrostatic testing and disinfection will be required on lines located along undeveloped property.
- Site restoration was assumed to be the same amount of area calculated for the clearing and grubbing. Restoration unit prices were based on similar GHGA regional authority projects (2005 to 2009 bids).

5.2.2.2 Water Line Easements

Proposed water line easement widths adjacent to acceptable means of public access are assumed to be 20 feet. All others are assumed to be 30 feet. Twenty feet for easements is adequate for the majority of locations where the proposed water lines will be adjacent to public access.

The SJRA has completed a cost study for the acquisition of real property/easements to convey treated surface water from the proposed SJRA Raw Water Treatment Facilities to the various SJRA Joint GRP Participant receiving plants. The study includes information such as the number of tracts and/or parcels of land to be acquired, the current value of properties to be acquired [according to the Montgomery County Appraisal District ("MCAD")], and Public Rights of Way information including the identification of existing utilities and facilities including water lines, power lines, sanitary sewer lines, drainage structures. In addition, the study has also identified potential conflicts that may impact the routing and placement of the proposed water transmission system, such as creeks, signs and other structures. GIS was used to identify potentially impacted parcels along each corridor. Since the parcel data is incomplete and temporary construction

easements will need to be acquired, the weighted parcel average value was increased by 30 %. The total estimated cost for the easements is $10.92 million.

5.2.2.3 Participant Water Receiving Plant Sites

Where the proposed water transmission lines extend to existing water receiving plants, two additional costs apply. First, a cost of $250,000 (including contingency) was added as the estimated cost of installing meter and control valve stations at each SJRA Joint GRP Participant's water receiving plant. This cost is applied in the economic analysis in the appropriate year.

The second cost is for work including the potential conversion of disinfection systems from chlorine to chloramine, yard piping, and storage tank modifications at the point of connection. These water receiving plant costs may be incurred by the receiving SJRA Joint GRP Participant and may potentially be reimbursed by the SJRA. These additional costs are estimated to average approximately $250,000 (including contingency) per water receiving plant site.

The total cost associated with delivering treated surface water to existing and future water receiving plants for meter/control valve stations and site improvements and modifications is estimated to be approximately $500,000 per water receiving plant.

5.2.2.4 Transmission Project Costs

The total project cost for the transmission system including construction costs and contingencies, professional services, land acquisitions and water supply plant site work is $234.67 million.

5.2.3 Summary of Project Costs

Table 5.1 is a summary of the total project costs for the 2016 phase.

Table 5.1

Summary of 2016 Project Costs

Facility	Total Project Cost (millions)
Raw Intake Structure & Pump Station	$26.83
Water Treatment Plant	$182.24
High Service Pump Station	$47.67
Transmission System	$234.67
Total	**$491.41**

5.2.4 Annual Costs

Annual Operation and Maintenance (O&M) costs include:

- Debt service;
- Reserve funds (e.g., debt service reserve, operating reserve);
- Operating costs for the proposed treatment plant (e.g., chemicals, power, natural gas) and operators to oversee daily operations;
- Preventative maintenance including maintenance of water treatment plant and transmission lines and their repair;
- Purchased water (including reservation fees);
- Monthly monitoring of groundwater production and surface water;
- Engineering, legal, and financial support; and
- Administration management.

Debt service is determined based on the amount of the bond sale(s) (including legal, financial advisor, and other fees) required to fund the total project including construction and soft costs.

The cost of water treatment plant operations are based on the draft study titled *"San Jacinto River Authority Surface Water Treatment Plant Memorandum Report."* Transmission lines were assumed to require an annual O&M expenditure of 1 % of the total construction cost of the water transmission system and 2.5 % of the total estimated construction costs for intake structures and pump stations.

5.3 GRP Financing

The following alternatives are available to the SJRA to finance the preferred water supply project:

1. Texas Water Development Board (TWDB) Water Infrastructure Fund (WIF) Loans
    a. TWDB WIF Deferred Payment for Planning, Design, and Permitting Costs
    b. TWDB WIF Construction Loan (non-deferred)
2. TWDB Water Development Fund Loan (DFund)
3. Sale of bonds on the open market.

The SJRA GRP Contract provides the necessary means to repay the debt service incurred through any of these financing methods, by and through the adoption and collection of fees on pumpage from regulated groundwater wells and on surface water delivered by the SJRA, if any.

These financing and funding options as well a few of their advantages and disadvantages are described in the following paragraphs.

TWDB Water Infrastructure Fund Loans

Water Infrastructure Fund (WIF) money is state financial assistance available to political subdivisions of the State, including municipalities, counties, river authorities, special law districts, water improvement districts, water control and improvement districts, irrigation districts, and groundwater districts. Projects must be recommended water management strategies in the most recent TWDB-approved regional water plan or approved State Water Plan.

The TWDB allocates WIF Deferred funds for pre-construction activities, including planning, permitting, and design. Non-deferred WIF funds are allocated for pre-construction activities, easement/land acquisition, and construction. Because large water supply projects often have long development periods where the applicant must spend considerable time and money before water is delivered and the accompanying revenue stream materializes, the TWDB allows the deferral of principal and interest payments for pre-construction loans until either construction is completed and water is delivered or 10 years, whichever occurs first. In addition, interest does not accrue during the deferral period.

Most other components of WIF pre-construction (deferred) and construction (non-deferred) loans are the same. Key elements of WIF loans are:

- projects must be part of a recommended strategy in the Regional Water Plan;
- loans are currently subsidized at 2 % below the TWDB's cost of funds;
- life of loans is in excess of 20 years;
- loans are amortized with level debt service over:
    - 20 years for construction loans,
    - the remaining life of the loan after deferral of principal and interest, but not less than 10 years, for pre-construction loans;
- various funding structures are available for different portions of projects;
- the applicant must close the loan within one year of the date of commitment;
- applications must be received by the first business day in January or July;
- applications are prioritized relative to other applications received for that round of funding; projects are prioritized based on:
    - development of a new, usable supply of water,
    - projects which have received previous Board funding for facility planning, design, or permitting for the project,
    - projects with the earliest identified need, as set forth in the water plan,

  - entities that have demonstrated significant water conservation savings; or will achieve significant water conservation savings by implementing the proposed project;

- the TWDB considers all types of pledges that applicants have legal authority to pledge. The most common pledges are revenue, tax, combined revenue and tax, and contract revenue;
- applications include a preliminary engineering feasibility report and known environmental information, as well as general, fiscal and legal application information;
- no administrative cost recovery fees are assessed;
- a Pre-Design Funding option is available which allows the applicant to apply for funding prior to completing engineering feasibility and environmental studies; and,
- availability of WIF funds is contingent on debt service appropriations from the Legislature for bonds issued by the TWDB.

The SJRA has already secured a TWDB WIF loan to pay for the planning portion of this program. The WIF loan was for $21.5 million and has been used to pay for the WRAP, this Joint GRP, real estate research, and special engineering services such as environmental assessment and surveying. The SJRA has an agreement with TWDB that the loan will not begin accruing interest and payments will not be due until they start delivering surface water in 2016.

TWDB Water Development Fund Loans

The Texas Water Development Fund (DFund) is a loan program that provides loans to political subdivisions of the state or a nonprofit water supply corporation. Political subdivisions include cities, counties, districts, and river authorities for planning, designing and constructing water supply, wastewater and flood control projects. Water supply projects must be consistent with the 2007 State Water Plan.

The DFund provides financing for acquiring, improving or constructing water-related projects such as water wells, retail distribution and wholesale transmission lines, pumping facilities, storage reservoirs and tanks and water treatment plants. The fund provides financing for the purchase of water rights. It also provides financing for wastewater collection and treatment projects and flood control projects.

The TWDB accepts general obligation bonds, tax and/or revenue bonds and tax and revenue certificates of obligation as revenue sources for repayment of DFund loans.

The interest rate on a DFund loan varies depending on market conditions. The lending rate scales are set 0.35 % above the TWDB's borrowing cost. The lending rates are intended to provide reasonable rates for TWDB customers while covering the TWDB's

cost of funds and risk exposure. Current rates are available at http://www.twdb.state.tx.us.

Sale of Bonds on the Open Market

Two reasons to select bond financing for the purpose of the SJRA Joint GRP over WIF funding (described next) are:

- bonds are a more conservative approach in terms of cost; and,
- the State/TWDB is not obligated to fund the WIF program; therefore, WIF funds may not be available in the year(s) that financing is needed, whereas there is commonly a market for bonds.

The assumptions associated with the sale of bonds include:

- an average interest rate equal to 4.75 % (based on current market conditions);
- life of bonds equal to 25 years;
- bond preparation and issuance costs estimated at 2.0 % as follows:
    - Legal Fees equal to 0.50 % of the amount of the bond sale;
    - Financial Advisor Fees equal to 0.50 % of the amount of the bond sale; and,
    - other fees and expenses equal to 1.00 % of the amount of the bond sale.
- Two years of capitalized interest is to be set aside for each bond sale.

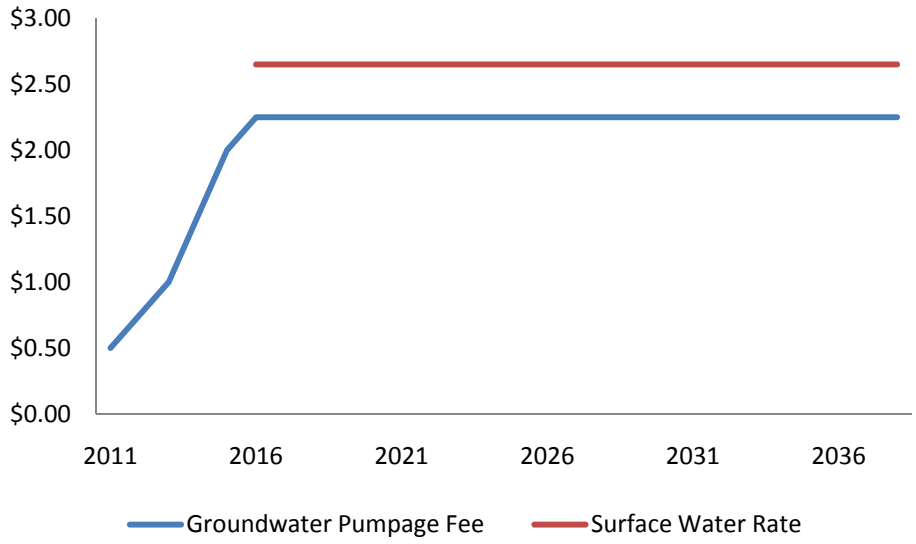
Other financing methods will be evaluated as the program moves forward to obtain the most cost-effective and readily available financing at the time. The public financing market has changed over the last year or so resulting in changes to criteria, restrictions, issuance processes, costs, reserves, etc. including capitalized interest which requires larger issuance amounts.

5.3.1 Proforma

The GRP costs included in **Section 5.2** (see page 32) were provided to the SJRA Joint GRP Financial Advisor. The Financial Advisor has put together a proforma for a revenue bond program that will finance the GRP Program. The proforma is included in **Appendix J** and includes funding in 2009, 2011 and 2012. As the figure shows, the groundwater pumpage fee shall increase to a maximum value of $2.25/1,000 gallons for the life of the program, while the surface water rate shall remain constant throughout the life of the program at a value of $2.65/1,000 gallons. The increment between surface water rate and groundwater pumpage is $0.40. This amount is based on the cost to operate and maintain a groundwater well and includes the power, chemical and operator costs. This cost does not include any debt service cost. This ensures that the entities receiving surface water are paying the same amount as the entities using groundwater.

Figure 5.1

Projected Groundwater Pumpage Fees and Surface Water Rates



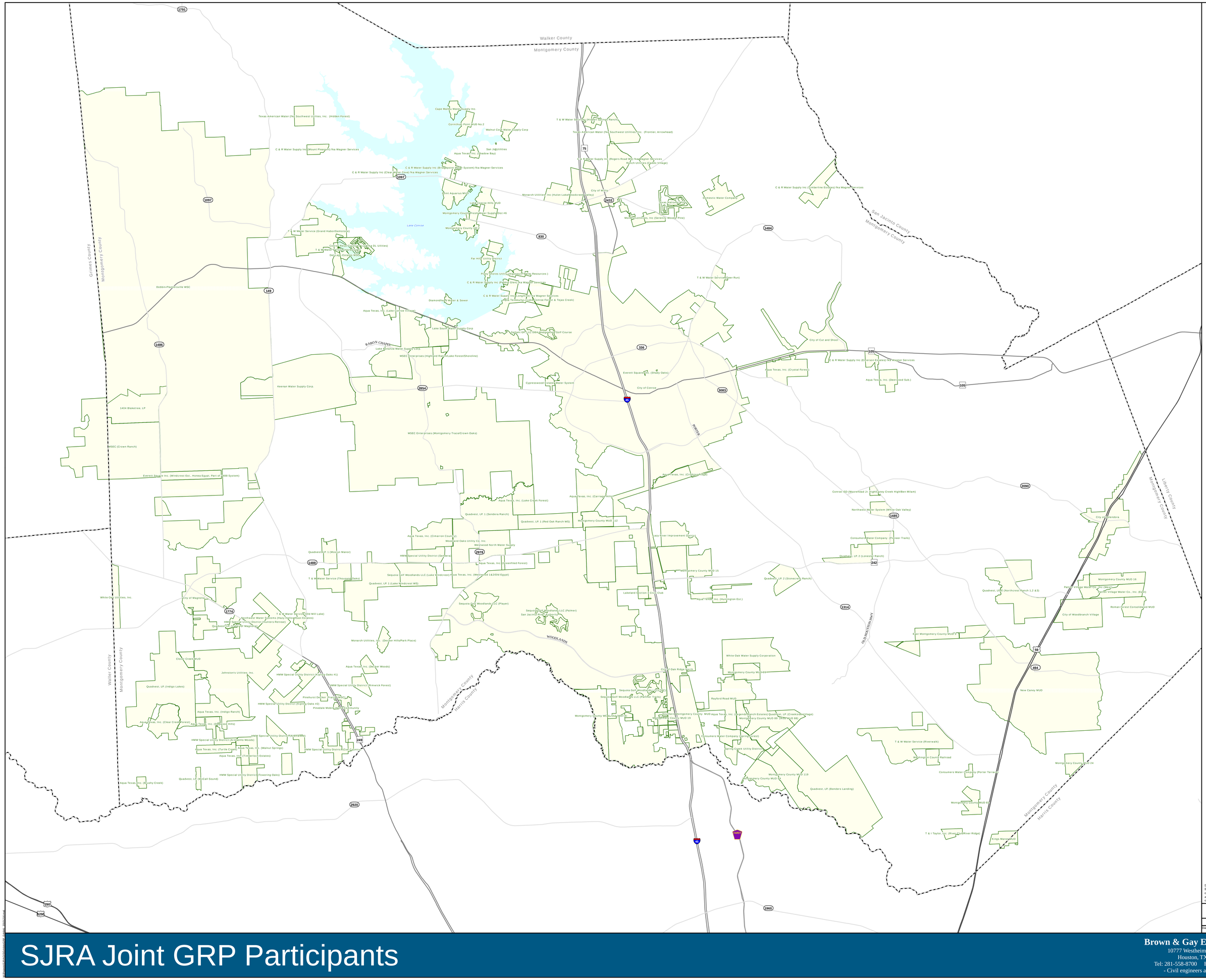
5.4 GRP Schedule

The SJRA has developed a master program schedule that is included in **Appendix K.** The master program schedule is broken out into different tasks for each milestone year: 2016, 2025, 2035 and 2045. Specific deadlines for the Initial Conversion Obligation that are included in the master program are summarized in **Table 5.2**.

Table 5.2

Initial Conversion Deadlines

Executed City of Houston contract	October 2009
WIF Funding	November 2009
Executing GRP contracts	July 2010
Submit GRP to LSGCD	April 2011
Transmission System Preliminary Engineering Completion	September
Water Treatment Plant PER Completion	November 2011
Intake Structure and Pump Station PER Completion	November 2011
High Service Pump Station PER Completion	November 2011
2011 Bond Sales	March 2011
Intake Structure and Pump Station Permitting Completion	March 2012
Transmission Environmental Services Completion	April 2012
Land Acquisition Completion	August 2012
Transmission System Design and Bid Phage Completion	October 2012
2012 Bond Sales	November 2012
High Service Pump Station Design, Permitting and Bid Phase Completion	May 2013
Water Plant Design and Bid Phase Completion	August 2013
Transmission System Construction Completion	June 2015
Water Plant Construction Completion	June 2015
High Service Pump Station Construction Completion	June 2015
Intake Structure and Pump Station Construction Completion	June 2015
Testing, Startup Completion	December 2015



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SJRA Joint GRP Participants

Exhibit 1

Date: March 2011 | Project: 0390-00

SJRA Joint GRP Participants

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Houston, TX 77042
Tel: 281-558-8700 Fax: 281-558-9701
- Civil engineers and surveyors -

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Existing Reclaimed Water Producers and Potential Users

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- Civil engineers and surveyors -

SJRA Joint GRP 2016 Surface Water Delivery System

Lake Conroe

Surface Water Treatment Plant

60 in

42 in

16 in

30 in

24 in

12 in

City of Conroe - WP21

City of Conroe - WP15

City of Conroe - WP14W

City of Conroe - WP20

City of Conroe - WP22

20 in

16 in

24 in

City of Conroe - WP6S

12 in

60 in

54 in

MSEC Enterprises
(Montgomery Trace/Crown Oaks)

48 in

20 in

18 in

42 in

20 in

San Jacinto River Authority - WP3

San Jacinto River Authority - WP5

San Jacinto River Authority - WP2

24 in

16 in

San Jacinto River Authority - WP4

30 in

City of Oak Ridge North - WP1

Southern Montgomery County MUD - WP3

16 in

10 in

18 in

Rayford Road MUD - WP2

Rayford Road MUD - WP1

San Jacinto River Authority - WP1

24 in

Montgomery County WCID 1 - WP4

10 in

20 in

Southern Montgomery County MUD - WP2

Montgomery County

Harris County

1097 · 830 · 75 · 2432 · 1484 · 105 · 336 · 3083 · 1485 · 2854 · 2978 · 1488 · 45 · 242 · 1314 · 249 · 2920 · FM 2978 · FM 2920

LOWMIRE RD · RABON CHAPEL RD · MCCALEB RD · FISH CREEK · HONEA EGYPT RD · SENDERA RANCH DR · W DAVIS ST · AIRPORT RD · N 15TH ST · E DAVIS ST · W PHILLIPS ST · PORTER RD · W ALDEN BRIDGE DR · CROWNRIDGE DR · KUYKENDAHL RD · ALDEN BRIDGE DR · BRANCH CROSSING DR · COPPERAS CREEK DR · COLLEGE PARK DR · LAKE WOODLANDS DR · RESEARCH FOREST DR · GOSLING RD · W PANTHER CREEK DR · E PANTHER CREEK DR · S PANTHER CREEK DR · WOODLANDS PKWY · FLINTRIDGE DR · GROGANS MILL RD · N MILLBEND DR · S MILLBEND DR · SAWDUST RD · RAYFORD RD · HARDY RD · E HARDY RD · HUFSMITH RD · HUFSMITH KUYKENDAHL RD · HUFSMITH-KOHRVILLE RD · STUEBNER AIRLINE RD · NORTHCREST DR · OLD HOUSTON RD · ZION RD · QUINN RD · ULRICH RD · E HUFSMITH RD · W HUFSMITH RD · BAKER DR · E MAIN ST · TOMBALL PKWY

Water Plant
Proposed Waterline - 2016
County Boundary

Disclaimer:
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Exhibit 3

Date: March 2011 Project: 0390-00

BROWN & GAY ENGINEERS, INC.

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- Civil engineers and surveyors -

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SJRA Joint GRP Future Surface Water Delivery System

Lake Conroe

Surface Water Treatment Plant

T & W Water Service (Grand Habor/Gemstone)

Conroe Resort Utilities LLC (fka DL Uilities)

City of Conroe - WP21

City of Conroe - WP15

Piney Shores Utility (Algonquin Water Resources)

Aqua Texas, Inc. (Lake Conroe Forest & Tejas Creek)

Diamondhead Water & Sewer

Aqua Texas, Inc. (Lake Conroe Village)

Lake South Water Supply Corp

City of Conroe - WP14W

City of Conroe - WP20

City of Conroe - WP22

Lake Bonanza Water Supply Corp.

MSEC Enterprises (Highland Ranch/Lake Forest/Shoreline)

City of Conroe - WP6S

Aqua Texas, Inc. (Crystal Forest)

City of Conroe WP-5

City of Conroe WP-4

MSEC Enterprises (Crown Ranch)

MSEC Enterprises (Montgomery Trace/Crown Oaks)

City of Conroe WP-7

City of Conroe WP-18

Aqua Texas, Inc. (Crighton Ridge)

Quadvest, LP. (Red Oak Ranch WS)

Aqua Texas, Inc. (Lake Creek Forest)

Quadvest, LP. (Sendera Ranch)

Aqua Texas, Inc. (Carriage Hills)

Montgomery County MUD 112

Aqua Texas, Inc. (Cimarron Country)

Woodland Oaks Utility Inc. WP-1

HMW Special Utility District (Sendera)

Westwood North Water Supply

Quadvest, LP. (Lake Windcrest WS) WP-1

Woodland Oaks Utility Inc. WP-2

San Jacinto River Authority - WP3

Lakeland Section 4 Civic Club

Quadvest, LP. (Lake Windcrest WS) WP2

Aqua Texas, Inc. (Westwood 1&2/Old Egypt)

San Jacinto River Authority - WP5

San Jacinto River Authority - WP4

San Jacinto River Authority - WP2

City of Oak Ridge North - WP1

Monarch Utilities, Inc. (Decker Hills/Park Place)

Southern Montgomery County MUD - WP3

Montgomery County MUD 99

Rayford Road MUD - WP2

Rayford Road MUD - WP1

Montgomery County MUD 19 WP-1

Montgomery County MUD 89

San Jacinto River Authority - WP1

Quadvest, LP. (Creekside Village)

Montgomery County WCID 1 - WP4

Aqua Texas, Inc. (Legends Ranch Estates)

Montgomery County MUD 19 WP-2

Montgomery County MUD 19 WP-3

Southern Montgomery County MUD - WP2

Spring Creek Utility District

Consumers Water Company (Spring Forest)

Montgomery County MUD 119

Water Plant
Waterline - 2016
Potential Future Waterline – 2045
County Boundary

Disclaimer:
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Exhibit 4

Date: March 2011 Project: SJR10-62

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Appendix A

Montgomery County

Population Projections

Appendix A

GRP Participant Population

GRP Participant	DOI	Region H WUG	Projected Population				Source	Comments
			2016	2025	2035	2045		
City of Conroe	Y	Y	71,292	90,469	114,736	144,242	Region H 2011	
City of Cut and Shoot	Y	Y	1,646	1,946	2,407	2,982	Region H 2011	
City of Magnolia	Y	Y	2,668	3,533	4,629	5,961	Region H 2011	
City of Oak Ridge North	Y	Y	4,018	4,651	5,622	6,833	Region H 2011	
City of Splendora	Y	Y	2,289	2,913	3,871	5,066	Region H 2011	
City of Willis	Y	Y	6,321	7,760	9,967	12,718	Region H 2011	
City of Woodbranch	Y	Y	1,697	1,916	2,192	2,527	Region H 2011	
Consumers Water Inc. (Pioneer Trails)	Y	Y	637	760	958	1,204	Region H 2011	
Consumers Water Inc. (Porter Terrace)	Y	Y	471	562	708	890	Region H 2011	
Consumers Water Inc. (Spring Forest)	Y	Y	1,435	1,712	2,156	2,712	Region H 2011	
HMW SUD (Allenwood)	Y	Y	633	738	906	1,117	Region H 2011	HMW SUD (Rimwick Forest) is not a GRP Participant
HMW SUD (Armadillo Woods)	Y	Y	725	845	1,037	1,278	Region H 2011	
HMW SUD (Coe Country)	Y	Y	2,919	3,403	4,178	5,148	Region H 2011	
HMW SUD (Hunters Retreat)	Y	Y	1,545	1,801	2,211	2,725	Region H 2011	
HMW SUD (Kipling Oaks 1)	Y	Y	1,347	1,570	1,927	2,375	Region H 2011	
HMW SUD (Kipling Oaks 2)	Y	Y	2,391	2,787	3,422	4,217	Region H 2011	
HMW SUD (Sendera)	Y	Y	1,067	1,244	1,527	1,881	Region H 2011	
HMW SUD (Towering Oaks)	Y	Y	1,384	1,613	1,981	2,441	Region H 2011	
MC MUD No. 19	Y	Y	3,200	3,200	3,200	3,200	Region H 2011	
MC UD No. 2	Y	Y	3,116	3,116	3,116	3,116	Region H 2011	
MC WCID No. 1	Y	Y	4,332	4,774	5,484	6,373	Region H 2011	
New Caney MUD	Y	Y	16,689	20,589	26,842	34,677	Region H 2011	
Patton Village (East)	Y	Y	1,017	1,172	1,407	1,701	Region H 2011	
Patton Village (West)	Y	Y	825	949	1,141	1,379	Region H 2011	
Point Aquarius MUD	Y	Y	4,081	5,409	7,537	10,204	Region H 2011	
Rayford Road MUD	Y	Y	18,237	18,237	18,237	18,237	Region H 2011	
Roman Forest	Y	Y	5,909	8,485	11,744	15,706	Region H 2011	
San Jacinto River Authority (The Woodlands)	Y	Y	90,914	115,385	119,300	119,300	Region H 2011	
Southern MC MUD	Y	Y	12,952	14,339	14,758	15,124	Region H 2011	
Southwest Utilities, Inc. (Texan American Water-Hidden Forest)	Y	Y	599	718	909	1,147	Region H 2011	
Southwest Utilities, Inc. (Texas American Water-Frontier Arrowhead)	Y	Y	1,855	2,223	2,812	3,550	Region H 2011	
Spring Creek UD	Y	Y	5,893	7,334	9,645	12,539	Region H 2011	
1404 Blaketree, LP	Y	N	0	0	0	0	WRAP ESFC	Population is zero because this Participant is a Golf Course.
Aqua Texas, Inc. (Brushy Creek)	Y	N	754	754	807	846	HGAC	
Aqua Texas, Inc. (Carriage Hills)	Y	N	2,143	2,548	3,226	3,945	HGAC	
Aqua Texas, Inc. (Cimarron Country)	Y	N	889	963	1,211	1,251	HGAC	
Aqua Texas, Inc. (Clear Creek Forest)	Y	N	1,024	1,026	1,022	1,038	HGAC	
Aqua Texas, Inc. (Crighton Ridge)	Y	N	514	516	559	630	HGAC	
Aqua Texas, Inc. (Crystal Forest)	Y	N	1,061	1,341	1,538	1,620	HGAC	
Aqua Texas, Inc. (Decker Woods)	Y	N	680	728	894	1,026	HGAC	
Aqua Texas, Inc. (Deerwood Sub.)	Y	N	878	882	885	942	HGAC	
Aqua Texas, Inc. (Dogwood Hills)	Y	N	918	939	964	983	HGAC	
Aqua Texas, Inc. (Greenfield Forest)	Y	N	151	174	202	233	LSGCD	Population calculated per historical pumpage data.
Aqua Texas, Inc. (Huntington Est.)	Y	N	339	335	352	405	HGAC	
Aqua Texas, Inc. (Indigo Ranch)	Y	N	627	667	743	1,130	HGAC	
Aqua Texas, Inc. (Lake Conroe Forest & Tejas Creek)	Y	N	492	1,091	1,774	1,941	HGAC	
Aqua Texas, Inc. (Lake Conroe Village)	Y	N	582	644	700	828	HGAC	
Aqua Texas, Inc. (Lake Creek Forest)	Y	N	552	742	1,015	1,167	HGAC	
Aqua Texas, Inc. (Legends Ranch Estates)	Y	N	118	207	232	296	HGAC	

Appendix A

GRP Participant Population

GRP Participant	DOI	Region H WUG	Projected Population				Source	Comments
			2016	2025	2035	2045		
Aqua Texas, Inc. (Shadow Bay)	Y	N	310	338	429	434	HGAC	
Aqua Texas, Inc. (Timberloch Estates)	Y	N	261	261	271	275	HGAC	
Aqua Texas, Inc. (Turtle Creek)	Y	N	593	597	650	685	HGAC	
Aqua Texas, Inc. (Walnut Springs)	Y	N	852	1,152	1,238	1,767	HGAC	
Aqua Texas, Inc. (Westwood 1&2/Old Egypt)	Y	N	988	1,084	1,224	1,268	HGAC	
Archdiocese of Galveston - Houston Circle Lake Retreat Center	Y	N	0	0	0	0	LSGCD	Population is zero because Participant is a Conference Center.
C & R Water Supply Inc (Bridgepoint Water System) fka Wagner Services	Y	N	226	299	395	522	LSGCD	Population calculated per historical pumpage data.
C & R Water Supply Inc (Clear Water Cove) fka Wagner Services	Y	N	85	123	217	341	HGAC	
C & R Water Supply Inc (Emerson Estates) fka Wagner Services	Y	N	694	916	1,211	1,599	LSGCD	Population calculated per historical pumpage data.
C & R Water Supply Inc (Rogers Road WS) fka Wagner Services	Y	N	707	993	1,292	1,820	HGAC	
C & R Water Supply, Inc. (Timberline Estates) (fka Wagner Services)	Y	N	10	10	10	10	HGAC	
Cape Malibu Water Supply Inc.	Y	N	264	264	314	312	HGAC	
Clover Creek MUD	Y	N	348	386	427	459	HGAC	
Conroe ISD (Moorehead Jr. High/Caney Creek High)	Y	N	0	0	0	0	WRAP ESFC	Population is zero because Participant is a School.
Conroe Resort Utilities, LLC (fka D L Utilities)	Y	N	604	712	1,153	1,167	HGAC	
Corinthian Point MUD No.2	Y	N	554	603	603	602	HGAC	
Cypress Woods Estates	Y	N	44	44	52	64	HGAC	
Del Lago Estates	Y	N	84	83	85	85	HGAC	
Diamondhead Water & Sewer	Y	N	53	53	83	83	HGAC	
Dobbin-Plantersville WSC	Y	N	8,740	13,660	27,682	47,326	HGAC	
Domestic Water Company	Y	N	632	920	1,157	1,242	HGAC	
East Montgomery County Mud 3	Y	N	23	33	319	529	HGAC	
Everett Square Inc. (Windcrest Est., Honea Egypt, Part of 1488 System)	Y	N	184	185	221	376	HGAC	
Everett Square, Inc. (Shady Oaks)	Y	N	135	136	137	138	HGAC	
Far Hills Utility District	Y	N	380	428	594	656	HGAC	
Gallant GP, LLC (Wedgewood Golf Course) (fka Wedgewood Golf Course)	Y	N	0	0	0	0	LSGCD	Population is zero because Participant is a Golf Course.
H.H.J., Inc / Decker Utilities	Y	N	185	214	240	254	HGAC	
Johnston's Utilities,Inc.	Y	N	12,011	14,000	17,188	21,182	Region H 2011	
Keenan Water Supply Corp.	Y	N	1,413	2,007	2,785	4,024	HGAC	
Kings Manor MUD	Y	N	1,128	1,386	1,411	1,413	HGAC	
Lake Bonanza Water Supply Corp.	Y	N	1,871	2,034	2,690	3,685	HGAC	
Lake Conroe Hills MUD	Y	N	557	559	635	849	HGAC	
Lake South Water Supply	Y	N	504	1,058	1,105	1,158	HGAC	
Lakeland Section 4 Civic Club	Y	N	0	0	0	0	LSGCD	Population is zero because Participant is a Civic Club.
Lazy River Improvement District	Y	N	1,229	1,224	1,307	1,327	HGAC	
MC Fresh Water Supply (Dist #6)	Y	N	227	443	489	589	HGAC	
MC MUD No. 112	Y	N	218	272	425	490	HGAC	
MC MUD No. 119	Y	N	416	739	927	1,652	HGAC	
MC MUD No. 15	Y	N	1,873	2,064	2,436	2,886	HGAC	
MC MUD No. 16	Y	N	431	462	546	643	HGAC	
MC MUD No. 24	Y	N	439	442	477	539	HGAC	
MC MUD No. 83 (Also MUD No. 84)	Y	N	504	626	865	1,223	HGAC	
MC MUD No. 89 (Also MUD No. 88)	Y	N	199	284	741	1,601	HGAC	
MC MUD No. 94	Y	N	815	1,496	2,430	4,745	HGAC	
MC MUD No. 99	Y	N	596	1,136	1,329	1,686	HGAC	
MSEC Enterprises (Crown Ranch)	Y	N	39	167	386	1,159	HGAC	
MSEC Enterprises (Highland Ranch/Lake Forest/Shoreline)	Y	N	18	18	22	27	HGAC	
MSEC Enterprises (Montgomery Trace WS/Crown Oaks)	Y	N	2,290	2,903	8,827	12,855	HGAC	
North Woods Water Supply Corp.	Y	N	491	491	602	607	HGAC	

Appendix A

GRP Participant Population

GRP Participant	DOI	Region H WUG	Projected Population				Source	Comments
			2016	2025	2035	2045		
Northwest Water System (White Oak Valley)	Y	N	912	1,030	1,238	1,486	HGAC	
Northwest Water Systems (Hazy Hallow East Estates)	Y	N	1,782	1,799	1,796	1,792	HGAC	
Pinedale Mobile Home Community	Y	N	325	325	342	375	HGAC	
Pinehurst Decker Prairie	Y	N	0	0	0	0	LSGCD	
Piney Shores Utility	Y	N	116	490	538	566	HGAC	
Quadvest, LP. (Benders Landing)	Y	N	1,918	4,361	7,408	11,415	HGAC	
Quadvest, LP. (Creekside Village)	Y	N	49	240	325	375	HGAC	
Quadvest, LP. (Indigo Lakes)	Y	N	2,192	2,210	2,473	3,008	HGAC	
Quadvest, LP. (Lakes of Magnolia)	Y	N	32	33	51	58	HGAC	
Quadvest, LP. 1 (Lake Windcrest WS)	Y	N	1,505	2,346	3,449	3,705	HGAC	
Quadvest, LP. 1 (Mostyn Manor)	Y	N	114	114	137	168	HGAC	
Quadvest, LP. 1 (Red Oak Ranch WS)	Y	N	206	233	388	690	HGAC	
Quadvest, LP. 1 (Sendera Ranch)	Y	N	1,240	1,419	1,703	1,967	HGAC	
Quadvest, LP. 2 (Lonestar Ranch)	Y	N	114	112	184	279	HGAC	
Quadvest, LP. 2 (Northcrest Ranch 1,2 &3)	Y	N	154	555	1,244	1,951	HGAC	
Quadvest, LP. 2 (Stonecrest Ranch)	Y	N	235	268	314	636	HGAC	
Ranch Utilities (Caddo Village)	Y	N	66	67	200	213	HGAC	
San Jo Utilities	Y	N	15	18	22	23	HGAC	
Sequoia Golf Woodlands LLC (Lake Windcrest)(fka Lake Windcrest Golf Club)	Y	N	0	0	0	0	LSGCD	Population is zero because Participant is a Golf Course.
Sequoia Golf Woodlands LLC (Palmer)	Y	N	0	0	0	0	LSGCD	Population is zero because Participant is a Golf Course.
Sequoia Golf Woodlands LLC (Panther Trails)	Y	N	0	0	0	0	LSGCD	Population is zero because Participant is a Golf Course.
Sequoia Golf Woodlands LLC (Player)	Y	N	0	0	0	0	LSGCD	Population is zero because Participant is a Golf Course.
Sequoia Golf Woodlands LLC (TPC)	Y	N	0	0	0	0	LSGCD	Population is zero because Participant is a Golf Course.
Southwest Water Co.-Decker Hills/Park Place (fka Monarch)	Y	N	1,739	1,897	1,964	2,208	HGAC	
Southwest Water Co.-Hulon Lake/Woodcreek Valley (fka Monarch)	Y	N	449	451	474	516	HGAC	
Southwest Water Co.-Serenity Woods, Pine (fka Monarch)	Y	N	472	475	637	810	HGAC	
T & I Taylor, Inc. (River Club/River Ridge)	Y	N	476	536	656	724	HGAC	
T & W Water Services (Deer Run)	Y	N	100	100	133	171	HGAC	
T & W Water Services (Grand Harbor/Gemstone)	Y	N	438	941	1,871	1,979	HGAC	
T & W Water Services (Harborside)	Y	N	10	10	10	10	HGAC	
T & W Water Services (Hidden Springs Ranch)	Y	N	215	309	444	639	LSGCD	Population calculated per historical pumpage data.
T & W Water Services (Old Mill Lake)	Y	N	32	34	52	75	HGAC	
T & W Water Services (Riverwalk)	Y	N	1,269	1,803	2,400	3,004	HGAC	
T & W Water Services (Thousand Oaks)	Y	N	50	49	166	418	HGAC	
Texaba Water System	Y	N	4	3	3	4	HGAC	
Texas National MUD	Y	N	483	482	634	1,045	HGAC	
Walnut Cove Water Supply Corp.	Y	N	933	931	1,015	1,148	HGAC	
Washington County Railroad	Y	N	0	0	0	0	WRAP ESFC	Population is zero because Participant does not have residents.
Westwood North Water Supply	Y	N	1,061	1,099	1,127	1,152	HGAC	
White Oak Utilities, Inc.	Y	N	899	940	971	967	HGAC	
White Oak Water Supply Corporation	Y	N	852	1,377	1,948	2,583	HGAC	
Woodland Oaks Utility Co. Inc.	Y	N	247	283	434	480	HGAC	
Total WUG Population			**274,105**	**336,153**	**390,565**	**452,571**		
Total Non-WUG Population			**76,656**	**98,203**	**140,503**	**191,275**		
Total			**350,761**	**434,356**	**531,068**	**643,846**		

Appendix B

Water Demand Projections

APPENDIX B

MONTGOMERY COUNTY WATER DEMAND PROJECTIONS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
						WRAP II Questionnaire			WRAP II Questionnaire			H-GAC Population						Unit Demand (gpcd)			Region H WUGs 2011 (MGD)						Joint SJRA GRP Projected Demands (mgd)			
Large Volume Groundwater User (LVGU)	SJRA Joint GRP Participants	2009 Total Qualifying Demand (MGD)	Region H WUG	Demand Basis	LSGCD 2007 - 2009 Pumpage	2007 Connect's	2045 Demand	Water Demand Projection Method	2007 Connect's	Estimate (mgy 2045)	2045 Demand (mgd)	Average 2005 - 2007	2015	2016	2025	2035	2045	Based on Population (gpcd)	Based on Connections (gpcd)	WUG Breakout (2007-2009)	2016	2025	2035	2045	LSGCD Average Pumpage 2007-2009 (MGD)	Special Values	2016	2025	2035	2045
City of Conroe	Y	9.00	Y	Muni	Y	Y	N	1	13,503			39,348	56,901	59,518	83,071	96,564	107,028		160		11.86	14.77	18.52	23.14	8.44		11.86	14.77	18.52	23.14
City of Cut and Shoot	Y	0.30	Y	Muni	Y	Y	Y	1	1,085	803	2.20	7,297	9,657	9,820	11,290	14,213	18,298		66		0.20	0.23	0.28	0.35	0.25		0.20	0.23	0.28	0.35
City of Magnolia	Y	0.58	Y	Muni	Y	Y	N	1	950			2,110	5,052	5,275	7,283	7,947	8,348		116		0.48	0.63	0.81	1.03	0.42		0.48	0.63	0.81	1.03
City of Oak Ridge North	Y	0.49	Y	Muni	Y	Y	Y	1	1,149	157	0.43	3,800	5,076	5,149	5,805	6,221	6,398		123		0.65	0.73	0.88	1.06	0.42		0.65	0.73	0.88	1.06
City of Splendora	Y	0.82	Y	Muni	Y	N	N	1				1,000	1,238	1,262	1,473	2,016	2,767	128			0.19	0.23	0.30	0.40	0.74		0.19	0.23	0.30	0.40
City of Willis	Y	0.82	Y	Muni	Y	Y	Y	1	2,191	523	1.43	3,410	4,931	5,237	7,992	8,824	10,096		54		0.55	0.65	0.82	1.04	0.65		0.55	0.65	0.82	1.04
City of Woodbranch	Y	0.14	Y	Muni	Y	Y	N	1	349			1,338	2,065	2,081	2,224	2,504	2,800		100		0.17	0.19	0.21	0.24	0.10		0.17	0.19	0.21	0.24
Consumers Water Inc. (Pioneer Trails)	Y	0.04	Y	Muni	Y	Y	Y	1	120	20	0.05	540	798	805	862	1,123	1,377		113	25.05%	0.05	0.06	0.08	0.10	0.04		0.05	0.06	0.08	0.10
Consumers Water Inc. (Porter Terrace)	Y	0.03	Y	Muni	Y	Y	Y	1	97	11	0.03	199	282	296	429	469	570		98	18.52%	0.04	0.04	0.06	0.07	0.03		0.04	0.04	0.06	0.07
Consumers Water Inc. (Spring Forest)	Y	0.10	Y	Muni	Y	Y	Y	1	245	35	0.10	1,035	1,310	1,325	1,468	1,929	2,298		112	56.42%	0.12	0.12	0.17	0.21	0.08		0.12	0.12	0.17	0.21
HMW SUD (Allenwood)	Y	0.05	Y	Muni	Y	Y	Y	1	110	14	0.04	295	442	442	442	535	762		126	5.17%	0.08	0.10	0.12	0.14	0.04		0.08	0.10	0.12	0.14
HMW SUD (Armadillo Woods)	Y	0.05	Y	Muni	Y	Y	Y	1	208	17	0.05	216	269	269	270	337	335		66	5.91%	0.10	0.11	0.13	0.16	0.04		0.10	0.11	0.13	0.16
HMW SUD (Coe Country)	Y	0.19	Y	Muni	Y	Y	Y	1	589	65	0.18	149	243	243	243	248	259		101	23.81%	0.39	0.44	0.54	0.66	0.17		0.39	0.44	0.54	0.66
HMW SUD (Hunters Retreat)	Y	0.11	Y	Muni	Y	Y	N	1	356			594	659	659	657	661	659		85	12.60%	0.20	0.23	0.28	0.35	0.09		0.20	0.23	0.28	0.35
HMW SUD (Kipling Oaks 1)	Y	0.10	Y	Muni	Y	Y	Y	1	374	35	0.09	322	359	359	359	465	650		74	10.98%	0.18	0.20	0.25	0.30	0.08		0.18	0.20	0.25	0.30
HMW SUD (Kipling Oaks 2)	Y	0.21	Y	Muni	Y	Y	Y	1	352	69	0.19	261	289	289	289	306	603		128	19.50%	0.32	0.36	0.44	0.54	0.14		0.32	0.36	0.44	0.54
HMW SUD (Sendera)	Y	0.09	Y	Muni	Y	Y	Y	1	144	22	0.06	508	849	876	1,115	1,236	1,306		128	8.70%	0.14	0.16	0.20	0.24	0.06		0.14	0.16	0.20	0.24
HMW SUD (Towering Oaks)	Y	0.11	Y	Muni	Y	Y	Y	1	245	35	0.10	84	107	109	127	179	321		104	11.29%	0.18	0.21	0.25	0.31	0.08		0.18	0.21	0.25	0.31
MC MUD No. 19	Y	0.60	Y	Muni	Y	Y	Y	1	231	191	0.52	1,523	2,153	2,156	2,182	2,227	2,212		128		0.41	0.40	0.40	0.40	0.54		0.41	0.40	0.40	0.40
MC UD No. 2	Y	0.44	Y	Muni	Y	Y	Y	1	1,119	222	0.61	707	888	907	1,076	1,329	1,729		97		0.50	0.49	0.48	0.48	0.34		0.50	0.49	0.48	0.48
MC WCID No. 1	Y	0.51	Y	Muni	Y	N	N	1				3,981	5,241	5,272	5,545	5,804	5,999	72			0.46	0.49	0.55	0.63	0.26		0.46	0.49	0.55	0.63
New Caney MUD	Y	1.05	Y	Muni	Y	Y	Y	1	3,441	705	1.93	7,997	12,105	12,278	13,836	17,502	22,567		84		1.42	1.70	2.17	2.77	0.86		1.42	1.70	2.17	2.77
Patton Village (East)	Y	0.06	Y	Muni	Y	Y	Y	1	170	26	0.07	1,187	1,471	1,552	2,282	2,752	3,653		96	55.23%	0.04	0.04	0.06	0.06	0.05		0.04	0.04	0.06	0.06
Patton Village (West)	Y	0.05	Y	Muni	Y	Y	Y	1	163	14	0.04	4	4	4	4	22	24		91	44.77%	0.04	0.04	0.04	0.05	0.04		0.04	0.04	0.04	0.05
Point Aquarius MUD	Y	0.49	Y	Muni	Y	N	N	1				839	1,275	1,329	1,819	1,971	2,500	128			0.76	0.99	1.37	1.85	0.35		0.76	0.99	1.37	1.85
Rayford Road MUD	Y	1.51	Y	Muni	Y	Y	Y	1	3,714	616	1.69	5,711	6,768	6,805	7,131	7,425	7,916		100		2.05	2.03	2.02	2.02	1.20		2.05	2.03	2.02	2.02
Roman Forest	Y	0.28	Y	Muni	Y	Y	N	1	691			13	18	34	173	244	243		118		0.65	0.91	1.23	1.63	0.23		0.65	0.91	1.23	1.63
San Jacinto River Authority (The Woodlands)	Y	17.81	Y	Muni	Y	Y	Y	1	29,000		22.14	78,805	101,011	102,719	118,092	126,940	133,526	199	180		19.03	24.52	25.23	25.11	17.75		19.03	24.52	25.23	25.11
Southern MC MUD	Y	1.32	Y	Muni	Y	Y	Y	1	1,671	600	1.64	6,493	8,112	8,444	11,435	12,137	12,387		128		1.94	2.15	2.19	2.24	1.19		1.94	2.15	2.19	2.24
Southwest Utilities, Inc. (Texan American Water-Hidden Forest)	Y	0.03	Y	Muni	Y	N	N	1				254	291	291	290	291	290	81		24.42%	0.06	0.07	0.09	0.11	0.02		0.06	0.07	0.09	0.11
Southwest Utilities, Inc. (Texas American Water-Frontier Arrowhead)	Y	0.08	Y	Muni	Y	N	N	1				592	828	828	828	1,113	1,545	109		75.58%	0.18	0.21	0.26	0.32	0.07		0.18	0.21	0.26	0.32
Spring Creek UD	Y	0.53	Y	Muni	Y	Y	Y	1	2,453	215	0.59	2,156	3,074	3,129	3,625	3,855	4,070		50		0.52	0.63	0.81	1.05	0.41		0.52	0.63	0.81	1.05
1404 Blaketree, LP	Y	0.15	N	LU	Y	Y	N	7	2																0.09	0.09	0.09	0.09	0.09	0.09
Aqua Texas, Inc. (Brushy Creek)	Y	0.05	N	Muni	Y	Y	Y	2	134	22	0.06	675	754	754	754	807	846		89						0.04		0.04	0.05	0.05	0.06
Aqua Texas, Inc. (Carriage Hills)	Y	0.26	N	Muni	Y	Y	Y	2	582	75	0.21	1,285	2,098	2,143	2,548	3,226	3,945		121						0.18		0.19	0.19	0.20	0.21
Aqua Texas, Inc. (Cimarron Country)	Y	0.11	N	Muni	Y	Y	Y	2	256	53	0.14	670	880	889	963	1,211	1,251		111						0.09		0.10	0.11	0.13	0.14
Aqua Texas, Inc. (Clear Creek Forest)	Y	0.15	N	Muni	Y	Y	Y	2	494	50	0.14	760	1,023	1,024	1,026	1,022	1,038		72						0.12		0.12	0.13	0.13	0.14
Aqua Texas, Inc. (Crighton Ridge)	Y	0.32	N	Muni	Y	Y	Y	2	423	68	0.19	475	514	514	516	559	630		128						0.26		0.26	0.26	0.26	0.26
Aqua Texas, Inc. (Crystal Forest)	Y	0.05	N	Muni	Y	Y	Y	2	197	31	0.09	570	1,030	1,061	1,341	1,538	1,620		66						0.04		0.05	0.06	0.07	0.09
Aqua Texas, Inc. (Decker Woods)	Y	0.08	N	Muni	Y	Y	Y	2	248	27	0.08	547	675	680	728	894	1,026		92						0.06		0.07	0.07	0.07	0.08
Aqua Texas, Inc. (Deerwood Sub.)	Y	0.12	N	Muni	Y	Y	Y	7	407	81	0.22	666	878	878	882	885	942		80						0.11	0.13	0.13	0.13	0.13	0.13
Aqua Texas, Inc. (Dogwood Hills)	Y	0.11	N	Muni	Y	Y	Y	2	337	42	0.11	737	916	918	939	964	983		73						0.07		0.08	0.09	0.10	0.11
Aqua Texas, Inc. (Greenfield Forest)	Y	0.03	N	Muni	Y	N	N	6																	0.02		0.02	0.02	0.02	0.02
Aqua Texas, Inc. (Huntington Est.)	Y	0.04	N	Muni	Y	Y	Y	2	149	16	0.04	292	340	339	335	352	405		76						0.03		0.03	0.04	0.04	0.04
Aqua Texas, Inc. (Indigo Ranch)	Y	0.07	N	Muni	Y	N	Y	2		20	0.05	505	622	627	667	743	1,130	64							0.05		0.05	0.05	0.05	0.05
Aqua Texas, Inc. (Lake Conroe Forest & Tejas Creek)	Y	0.10	N	Muni	Y	Y	Y	2	364	38	0.10	336	425	492	1,091	1,774	1,941		87						0.09		0.09	0.09	0.10	0.10
Aqua Texas, Inc. (Lake Conroe Village)	Y	0.04	N	Muni	Y	Y	Y	3	276	82	0.23	326	575	582	644	700	828		41						0.04		0.04	0.04	0.04	0.04
Aqua Texas, Inc. (Lake Creek Forest)	Y	0.10	N	Muni	Y	Y	Y	2	238	37	0.10	425	531	552	742	1,015	1,167		98						0.08		0.08	0.09	0.09	0.10
Aqua Texas, Inc. (Legends Ranch Estates)	Y	0.13	N	Muni	Y	Y	Y	2	193	38	0.11	59	109	118	207	232	296		128						0.10		0.10	0.10	0.10	0.11
Aqua Texas, Inc. (Shadow Bay)	Y	0.07	N	Muni	Y	Y	Y	2	319	30	0.08	239	307	310	338	429	434		52						0.05		0.05	0.06	0.07	0.08
Aqua Texas, Inc. (Timberloch Estates)	Y	0.05	N	Muni	Y	Y	Y	2	224	24	0.07	197	261	261	261	271	275		68						0.05		0.05	0.06	0.06	0.07
Aqua Texas, Inc. (Turtle Creek)	Y	0.06	N	Muni	Y	Y	Y	2	184	20	0.05	472	592	593	597	650	685		76						0.04		0.04	0.05	0.05	0.05
Aqua Texas, Inc. (Walnut Springs)	Y	0.07	N	Muni	Y	Y	Y	2	201	34	0.09	559	818	852	1,152	1,238	1,767		84						0.05		0.06	0.07	0.08	0.09
Aqua Texas, Inc. (Westwood 1&2/Old Egypt)	Y	0.30	N	Muni	Y	Y	Y	2	597	62	0.17	768	977	988	1,084	1,224	1,268		107						0.26		0.26	0.26	0.26	0.26
Archdiocese of Galveston - Houston Circle Lake Retreat Center	Y	0.04	N	LU	Y	N	N	6																	0.04		0.04	0.04	0.04	0.04

APPENDIX B

MONTGOMERY COUNTY WATER DEMAND PROJECTIONS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
						WRAP II Questionnaire			WRAP II Questionnaire			H-GAC Population						Unit Demand (gpcd)			Region H WUGs 2011 (MGD)						Joint SJRA GRP Projected Demands (mgd)			
Large Volume Groundwater User (LVGU)	SJRA Joint GRP Participants	2009 Total Qualifying Demand (MGD)	Region H WUG	Demand Basis	LSGCD 2007 - 2009 Pumpage	2007 Connect's	2045 Demand	Water Demand Projection Method	2007 Connect's	Estimate (mgy 2045)	2045 Demand (mgd)	Average 2005 - 2007	2015	2016	2025	2035	2045	Based on Population (gpcd)	Based on Connections (gpcd)	WUG Breakout (2007-2009)	2016	2025	2035	2045	LSGCD Average Pumpage 2007-2009 (MGD)	Special Values	2016	2025	2035	2045
C & R Water Supply Inc (Bridgepoint Water System) fka Wagner Services	Y	0.03	N	Muni	Y	N	N	6																	0.03		0.03	0.03	0.03	0.03
C & R Water Supply Inc (Clear Water Cove) fka Wagner Services	Y	0.05	N	Muni	Y	N	N	3				72	81	85	123	217	341	128							0.04		0.04	0.04	0.04	0.04
C & R Water Supply Inc (Emerson Estates) fka Wagner Services	Y	0.10	N	Muni	Y	N	N	6																	0.09		0.09	0.09	0.09	0.09
C & R Water Supply Inc (Rogers Road WS) fka Wagner Services	Y	0.06	N	Muni	Y	N	N	6				519	675	707	993	1,292	1,820	79							0.05		0.05	0.05	0.05	0.05
C & R Water Supply, Inc. (Timberline Estates) (fka Wagner Services)	Y	0.06	N	Muni	Y	N	N	6				9	10	10	10	10	10	128							0.04		0.04	0.04	0.04	0.04
Cape Malibu Water Supply Inc.	Y	0.04	N	Muni	Y	Y	Y	2	118	22	0.06	120	264	264	264	314	312		92						0.03		0.03	0.04	0.05	0.06
Clover Creek MUD	Y	0.08	N	Muni	Y	Y	N	3	182			308	344	348	386	427	459		98						0.06		0.06	0.06	0.06	0.06
Conroe ISD (Moorehead Jr. High/Caney Creek High)	Y	0.03	N	LU	Y	Y	Y	2	4	21	0.06														0.04		0.05	0.05	0.05	0.06
Conroe Resort Utilities, LLC (fka D L Utilities)	Y	0.29	N	Muni	Y	N	N	3				395	592	604	712	1,153	1,167	128							0.17		0.17	0.17	0.17	0.17
Corinthian Point MUD No.2	Y	0.15	N	Muni	Y	Y	Y	2	273	53	0.14	482	549	554	603	603	602		128						0.12		0.12	0.13	0.14	0.14
Cypresswood Estates Water System	Y	0.07	N	Muni	Y	N	N	3				40	44	44	44	52	64	128							0.06		0.06	0.06	0.06	0.06
Del Lago Estates	Y	0.08	N	Muni	Y	Y	Y	2	49	22	0.06	86	84	84	83	85	85		128						0.05		0.05	0.05	0.06	0.06
Diamondhead Water & Sewer	Y	0.06	N	Muni	Y	Y	N	3	156			46	53	53	53	83	83		92						0.04		0.04	0.04	0.04	0.04
Dobbin-Plantersville WSC	Y	0.26	N	Muni	Y	N	N	3				5,249	8,193	8,740	13,660	27,682	47,326	38							0.24		0.54	0.94	1.38	1.81
Domestic Water Company	Y	0.13	N	Muni	Y	N	N	3				396	600	632	920	1,157	1,242	128							0.10		0.11	0.13	0.14	0.16
East Montgomery County Mud 3	Y	0.09	N	Muni	Y	Y	Y	7	11	327	0.90	17	22	23	33	319	529	128	128						0.07	0.12	0.12	0.12	0.12	0.12
Everett Square Inc. (Windcrest Est., Honea Egypt, Part of 1488 System)	Y	0.04	N	Muni	Y	Y	Y	2	74	13	0.04	67	184	184	185	221	376		128						0.04		0.04	0.04	0.04	0.04
Everett Square, Inc. (Shady Oaks)	Y	0.07	N	Muni	Y	Y	Y	2	191	14	0.04	110	135	135	136	137	138		58						0.03		0.03	0.04	0.04	0.04
Far Hills Utility District	Y	0.18	N	Muni	Y	Y	Y	2	399	189	0.52	328	374	380	428	594	656		126						0.17		0.23	0.32	0.42	0.52
Gallant GP, LLC (Wedgewood Golf Course) (fka Wedgewood Golf Course)	Y	0.21	N	LU	Y	N	N	7																	0.13	0.13	0.13	0.13	0.13	0.13
H.H.J., Inc / Decker Utilities	Y	0.16	N	Muni	Y	Y	N	3	545			84	182	185	214	240	254		53						0.16		0.16	0.16	0.16	0.16
Johnston's Utilities,Inc.	Y	0.43	N	Muni	Y	Y	Y	2	510	245	0.67	610	820	865	1,270	2,402	3,201		128						0.34		0.41	0.49	0.58	0.67
Keenan Water Supply Corp.	Y	0.07	N	Muni	Y	Y	N	3	274			1,020	1,347	1,413	2,007	2,785	4,024	77	77						0.06		0.11	0.17	0.24	0.31
Kings Manor MUD	Y	0.42	N	Muni	Y	Y	Y	2	1,655	136	0.37	840	1,099	1,128	1,386	1,411	1,413		66						0.33		0.34	0.35	0.36	0.37
Lake Bonanza Water Supply Corp.	Y	0.16	N	Muni	Y	Y	N	3	621			1,604	1,853	1,871	2,034	2,690	3,685		61						0.13		0.13	0.13	0.13	0.13
Lake Conroe Hills MUD	Y	0.15	N	Muni	Y	N	N	3				426	557	557	559	635	849	128							0.12		0.12	0.12	0.12	0.12
Lake South Water Supply	Y	0.07	N	Muni	Y	N	N	3				285	443	504	1,058	1,105	1,158	128							0.06		0.08	0.10	0.12	0.15
Lakeland Section 4 Civic Club	Y	0.06	N	LU	Y	N	N	7																	0.03	0.03	0.03	0.03	0.03	0.03
Lazy River Improvement District	Y	0.14	N	Muni	Y	N	N	3				1,086	1,230	1,229	1,224	1,307	1,327	93							0.10		0.10	0.11	0.12	0.12
MC Fresh Water Supply (Dist #6)	Y	0.04	N	Muni	Y	N	N	3				177	203	227	443	489	589	128							0.03		0.04	0.05	0.06	0.08
MC MUD No. 112	Y	0.14	N	Muni	Y	Y	Y	2	45	169	0.46	86	212	218	272	425	490		108						0.06		0.14	0.24	0.35	0.46
MC MUD No. 119	Y	0.22	N	Muni	Y	N	Y	2		229	0.63	114	380	416	739	927	1,652	128							0.12		0.22	0.35	0.49	0.63
MC MUD No. 15	Y	0.35	N	Muni	Y	Y	N	3	702			1,397	1,851	1,873	2,064	2,436	2,886		82						0.27		0.27	0.27	0.27	0.27
MC MUD No. 16	Y	0.06	N	Muni	Y	Y	Y	2	186	207	0.57	278	428	431	462	546	643		92						0.05		0.15	0.28	0.42	0.57
MC MUD No. 24	Y	0.07	N	Muni	Y	Y	N	3	216			352	438	439	442	477	539		83						0.05		0.05	0.05	0.05	0.05
MC MUD No. 83 (Also MUD No. 84)	Y	0.55	N	Muni	Y	Y	N	3	613			349	419	504	808	865	1,223		119						0.41		0.41	0.41	0.41	0.41
MC MUD No. 89 (Also MUD No. 88)	Y	0.98	N	Muni	Y	Y	Y	2	2,462	288	0.79	37	189	199	284	741	1,601		62						0.82		0.82	0.82	0.82	0.82
MC MUD No. 94	Y	0.49	N	Muni	Y	Y	Y	2	1,049	308	0.84	208	740	815	1,496	2,430	4,745		75						0.33		0.43	0.56	0.70	0.84
MC MUD No. 99	Y	0.22	N	Muni	Y	N	Y	5		260	0.71	103	536	596	1,136	1,329	1,686	128							0.15		0.08	0.12	0.17	0.22
MSEC Enterprises (Crown Ranch)	Y	0.06	N	Muni	Y	N	Y	2		726	1.99	11	25	39	167	386	1,159	128							0.03		0.41	0.90	1.45	1.99
MSEC Enterprises (Highland Ranch/Lake Forest/Shoreline)	Y	0.08	N	Muni	Y	Y	Y	2	159	71	0.19	17	18	18	18	22	27		95						0.05		0.08	0.11	0.15	0.19
MSEC Enterprises (Montgomery Trace WS/Crown Oaks)	Y	0.63	N	Muni	Y	Y	Y	2	1,026	2,022	5.54	1,463	2,222	2,290	2,903	8,827	12,855		127						0.48		1.47	2.73	4.13	5.54
North Woods Water Supply Corp.	Y	0.04	N	Muni	Y	N	N	3				307	491	491	491	602	607	111							0.04		0.04	0.05	0.06	0.07
Northwest Water System (White Oak Valley)	Y	0.05	N	Muni	Y	Y	N	3	195			582	899	912	1,030	1,238	1,486		60						0.03		0.03	0.03	0.03	0.03
Northwest Water Systems (Hazy Hallow East Estates)	Y	0.14	N	Muni	Y	Y	N	3	662			1,494	1,780	1,782	1,799	1,796	1,792		62						0.12		0.12	0.12	0.12	0.12
Pinedale Mobile Home Community	Y	0.05	N	Muni	Y	N	N	3				253	325	325	325	342	375	128							0.04		0.04	0.04	0.05	0.05
Pinehurst Decker Prairie	Y	0.11	N	Muni	Y	N	N	6																	0.08		0.08	0.08	0.08	0.08
Piney Shores Utility	Y	0.06	N	Muni	Y	Y	Y	2	186	22	0.06	33	74	116	490	538	566		90						0.05		0.05	0.06	0.06	0.06
Quadvest, LP. (Benders Landing)	Y	0.74	N	Muni	Y	Y	Y	2	627	358	0.98	303	1,647	1,918	4,361	7,408	11,415		128						0.47		0.57	0.70	0.84	0.98
Quadvest, LP. (Creekside Village)	Y	0.18	N	Muni	Y	Y	Y	2	347	40	0.11	5	28	49	240	325	375		43						0.10		0.10	0.10	0.11	0.11
Quadvest, LP. (Indigo Lakes)	Y	0.37	N	Muni	Y	Y	N	3	759			1,732	2,190	2,192	2,210	2,473	3,008		121						0.30		0.30	0.30	0.30	0.30
Quadvest, LP. (Lakes of Magnolia)	Y	0.05	N	Muni	Y	Y	Y	2	126	2	0.00	29	32	32	33	51	58		32						0.04		0.04	0.04	0.04	0.04
Quadvest, LP. 1 (Lake Windcrest WS)	Y	0.66	N	Muni	Y	Y	Y	2	843	165	0.45	1,089	1,412	1,505	2,346	3,449	3,705		128						0.50		0.50	0.50	0.50	0.50
Quadvest, LP. 1 (Mostyn Manor)	Y	0.10	N	Muni	Y	Y	Y	2	116	59	0.16	54	114	114	114	137	168		128						0.06		0.08	0.10	0.13	0.16
Quadvest, LP. 1 (Red Oak Ranch WS)	Y	0.06	N	Muni	Y	Y	Y	2	107	23	0.06	175	203	206	233	388	690		128						0.05		0.05	0.06	0.06	0.06

APPENDIX B

MONTGOMERY COUNTY WATER DEMAND PROJECTIONS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
						WRAP II Questionnaire			WRAP II Questionnaire			H-GAC Population						Unit Demand (gpcd)			Region H WUGs 2011 (MGD)						Joint SJRA GRP Projected Demands (mgd)			
Large Volume Groundwater User (LVGU)	SJRA Joint GRP Participants	2009 Total Qualifying Demand (MGD)	Region H WUG	Demand Basis	LSGCD 2007 - 2009 Pumpage	2007 Connect's	2045 Demand	Water Demand Projection Method	2007 Connect's	Estimate (mgy 2045)	2045 Demand (mgd)	Average 2005 - 2007	2015	2016	2025	2035	2045	Based on Population (gpcd)	Based on Connections (gpcd)	WUG Breakout (2007-2009)	2016	2025	2035	2045	LSGCD Average Pumpage 2007-2009 (MGD)	Special Values	2016	2025	2035	2045
Quadvest, LP. 1 (Sendera Ranch)	Y	0.17	N	Muni	Y	Y	Y	2	331	83	0.23	736	1,220	1,240	1,419	1,703	1,967		99						0.13		0.15	0.17	0.20	0.23
Quadvest, LP. 2 (Lonestar Ranch)	Y	0.18	N	Muni	Y	Y	Y	2	842	59	0.16	103	115	114	112	184	279		96						0.15		0.15	0.15	0.16	0.16
Quadvest, LP. 2 (Northcrest Ranch 1,2 &3)	Y	0.14	N	Muni	Y	Y	Y	2	352	74	0.20	40	110	154	555	1,244	1,951		74						0.11		0.12	0.15	0.18	0.20
Quadvest, LP. 2 (Stonecrest Ranch)	Y	0.04	N	Muni	Y	Y	Y	2	71	20	0.06	115	232	235	268	314	636		120						0.03		0.04	0.04	0.05	0.06
Ranch Utilities (Caddo Village)	Y	0.11	N	Muni	Y	Y	Y	2	339	67	0.18	60	66	66	67	200	213		43						0.08		0.10	0.12	0.15	0.18
San Jo Utilities	Y	0.03	N	Muni	Y	Y	N	3	201			9	14	15	18	22	23		53						0.03		0.03	0.03	0.03	0.03
Sequoia Golf Woodlands LLC (Lake Windcrest)(fka Lake Windcrest Golf Club)	Y	0.18	N	LU	Y	Y	Y	7	1	75	0.21														0.12	0.14	0.14	0.14	0.14	0.14
Sequoia Golf Woodlands LLC (Palmer)	Y	0.35	N	LU	Y	Y	Y	7	2	109	0.30														0.25	0.25	0.25	0.25	0.25	0.25
Sequoia Golf Woodlands LLC (Panther Trails)	Y		N	LU	Y	Y	Y	2	2	65	0.18														0.00		0.03	0.08	0.13	0.18
Sequoia Golf Woodlands LLC (Player)	Y	0.16	N	LU	Y	Y	Y	7	1	50	0.14														0.11	0.12	0.12	0.12	0.12	0.12
Sequoia Golf Woodlands LLC (TPC)	Y	0.31	N	LU	Y	Y	Y	7	1	150	0.41														0.17	0.20	0.20	0.20	0.20	0.20
Southwest Water Co.-Decker Hills/Park Place (fka Monarch)	Y	0.25	N	Muni	Y	Y	Y	2	1,089	93	0.25	1,395	1,722	1,739	1,897	1,964	2,208		63						0.22		0.23	0.24	0.25	0.25
Southwest Water Co.-Hulon Lake/Woodcreek Valley (fka Monarch)	Y	0.07	N	Muni	Y	Y	Y	2	246	14	0.04	395	449	449	451	474	516		68						0.05		0.05	0.05	0.05	0.05
Southwest Water Co.-Serenity Woods, Pine (fka Monarch)	Y	0.04	N	Muni	Y	Y	Y	2	135	12	0.03	416	472	472	475	637	810		78						0.03		0.03	0.03	0.03	0.03
T & I Taylor, Inc. (River Club/River Ridge)	Y	0.03	N	Muni	Y	N	N	3				288	469	476	536	656	724	95							0.03		0.03	0.04	0.06	0.07
T & W Water Services (Deer Run)	Y	0.04	N	Muni	Y	Y	Y	2	134	12	0.03	46	100	100	100	133	171		69						0.03		0.03	0.03	0.03	0.03
T & W Water Services (Grand Harbor/Gemstone)	Y	0.30	N	Muni	Y	Y	Y	2	433	139	0.38	230	382	438	941	1,871	1,979		128						0.25		0.27	0.31	0.34	0.38
T & W Water Services (Harborside)	Y	0.07	N	Muni	Y	Y	Y	2	96	22	0.06	9	10	10	10	10	10		128						0.05		0.05	0.06	0.06	0.06
T & W Water Services (Hidden Springs Ranch)	Y	0.03	N	Muni	Y	N	N	6																	0.03		0.03	0.03	0.03	0.03
T & W Water Services (Old Mill Lake)	Y	0.09	N	Muni	Y	Y	Y	2	105	28	0.08	27	32	32	34	52	75		128						0.08		0.08	0.08	0.08	0.08
T & W Water Services (Riverwalk)	Y	0.18	N	Muni	Y	Y	Y	2	492	96	0.26	375	1,209	1,269	1,803	2,400	3,004		128						0.14		0.16	0.20	0.23	0.26
T & W Water Services (Thousand Oaks)	Y	0.20	N	Muni	Y	Y	Y	2	378	94	0.26	37	50	50	49	166	418		128						0.18		0.20	0.21	0.24	0.26
Texaba Water System	Y	0.07	N	Muni	Y	N	N	3				3	4	4	3	3	4	128							0.03		0.03	0.03	0.03	0.03
Texas National MUD	Y	0.16	N	Muni	Y	Y	Y	2	112	149	0.41	257	483	483	482	634	1,045		128						0.08		0.15	0.23	0.32	0.41
Walnut Cove Water Supply Corp.	Y	0.11	N	Muni	Y	Y	N	3	536			811	934	933	931	1,015	1,148		47						0.10		0.10	0.10	0.10	0.10
Washington County Railroad	Y	0.06	N	LU	Y	Y	Y	2	196	15	0.04														0.04		0.04	0.04	0.04	0.04
Westwood North Water Supply	Y	0.28	N	Muni	Y	Y	N	3	812			798	1,057	1,061	1,099	1,127	1,152		87						0.23		0.23	0.23	0.23	0.23
White Oak Utilities, Inc.	Y	0.21	N	Muni	Y	Y	Y	2	259	53	0.14	265	895	899	940	971	967		74						0.07		0.08	0.10	0.12	0.14
White Oak Water Supply Corporation	Y	0.13	N	Muni	Y	Y	N	3	209			498	794	852	1,377	1,948	2,583		107						0.08		0.08	0.08	0.08	0.08
Woodland Oaks Utility Co. Inc.	Y	0.23	N	Muni	Y	N	Y	2		462	1.27	190	243	247	283	434	480	128							0.19		0.40	0.67	0.97	1.27
City of Houston	N		Y	Muni		N	N	1													0.21	0.28	0.40	0.54			0.21	0.28	0.40	0.54
City of Montgomery	N	0.19	Y	Muni	Y	N	N	1				508	648	720	1,364	3,010	3,618	128			0.62	1.12	1.55	1.97	0.15		0.62	1.12	1.55	1.97
City of Panorama Village	N	0.55	Y	Muni	Y	Y	Y	1	1,069	245	0.67	1,910	2,561	2,598	2,933	3,187	3,451		128		0.60	0.62	0.65	0.68	0.39		0.60	0.62	0.65	0.68
City of Shenandoah	N	0.95	Y	Muni	Y	N	N	1				1,737	2,039	2,243	4,087	4,522	5,588	128			1.71	1.96	2.27	2.65	0.78		1.71	1.96	2.27	2.65
City of Stagecoach	N		Y	Muni	N	N	N	1													0.09	0.11	0.15	0.20			0.09	0.11	0.15	0.20
Crystal Springs Water Co. (Bennett Woods)	N	0.03	Y	Muni	Y	N	N	1				105	126	132	192	219	385	128		5.67%	0.03	0.04	0.05	0.07	0.02		0.03	0.04	0.05	0.07
Crystal Springs Water Co. (Country West/Western Hills)	N	0.11	Y	Muni	Y	N	N	1				797	1,106	1,120	1,254	1,327	1,382	71		22.01%	0.13	0.16	0.21	0.28	0.09		0.13	0.16	0.21	0.28
Crystal Springs Water Co. (Deer Glenn)	N	0.16	Y	Muni	Y	N	N	1				1,356	1,929	1,962	2,252	2,426	2,668	94		34.43%	0.21	0.25	0.33	0.43	0.14		0.21	0.25	0.33	0.43
Crystal Springs Water Co. (Live Oak Estates)	N	0.05	Y	Muni	Y	N	N	1				9	10	10	10	20	21	128		11.77%	0.07	0.09	0.11	0.15	0.05		0.07	0.09	0.11	0.15
Crystal Springs Water Co. (Timberland Estates)	N	0.09	Y	Muni	Y	N	N	1				62	101	116	244	336	470	128		15.44%	0.09	0.11	0.15	0.19	0.06		0.09	0.11	0.15	0.19
Crystal Springs Water Co. (Western Hills)	N		Y	Muni	Y	N	N	1				1,356	1,929	1,962	2,252	2,426	2,668	32		3.78%	0.02	0.03	0.04	0.05	0.04		0.02	0.03	0.04	0.05
Crystal Springs Water Co. (Whispering Pines)	N	0.03	Y	Muni	Y	N	N	1				210	265	280	415	454	614	128		6.90%	0.04	0.05	0.07	0.09	0.03		0.04	0.05	0.07	0.09
East Plantation UD	N	0.30	Y	Muni	Y	N	N	1				1,280	1,798	1,817	1,986	1,995	2,028	103			0.47	0.57	0.75	0.98	0.21		0.47	0.57	0.75	0.98
~~Entergy Texas/ Lewis Creek Plant fka Entergy Gulf States/Lewis Creek Plant~~	N	0.69	Y	LU	Y	N	N	8																	0.57	7.00	7.00	7.00	7.00	7.00
HMW SUD (Rimwick Forest)	N	0.01	Y	Muni	Y	N	N	1				156	196	196	196	215	628	94		2.05%	0.03	0.04	0.05	0.06	0.01		0.03	0.04	0.05	0.06
MC MUD No. 18	N	1.58	Y	Muni	Y	N	N	1				1,783	2,702	2,784	3,516	4,829	5,127	128			1.97	2.63	3.74	5.14	1.07		1.97	2.63	3.74	5.14
MC MUD No. 8	N	0.91	Y	Muni	Y	N	N	1				1,182	1,359	1,371	1,473	2,515	2,991	128			0.89	1.08	1.21	1.24	0.63		0.89	1.08	1.21	1.24
MC MUD No. 9	N	0.75	Y	Muni	Y	Y	N	1	1,335			1,649	2,099	2,157	2,680	3,230	3,355		128		0.86	1.09	1.28	1.35	0.59		0.86	1.09	1.28	1.35
MC UD No. 3	N	0.52	Y	Muni	Y	Y	N	1	1,210	*		2,025	2,408	2,435	2,673	2,791	3,074		112		0.44	0.47	0.53	0.61	0.69		0.44	0.47	0.53	0.61
MC UD No. 4	N	0.69	Y	Muni	Y	Y	Y	1	1,399	365	1.00	2,639	3,172	3,225	3,705	3,861	4,107		128		0.87	0.86	0.85	0.85	0.50		0.87	0.86	0.85	0.85
Porter Special Utility District	N	1.41	Y	Muni	Y	Y	N	1	3,390			13,472	22,953	23,919	32,612	39,410	46,828		120		1.86	2.17	2.70	3.12	1.31		1.86	2.17	2.70	3.12
River Plantation MUD	N	0.62	Y	Muni	Y	Y	Y	1	949	225	0.62	2,780	3,525	3,553	3,797	4,101	4,515		128		0.74	0.73	0.72	0.71	0.44		0.74	0.73	0.72	0.71
Stanley Lake MUD	N	0.63	Y	Muni	Y	Y	Y	1	1,138	396	1.09	167	403	502	1,399	1,457	1,449		119		0.74	0.80	0.80	0.80	0.46		0.74	0.80	0.80	0.80
Affiliated Crown Development, Ltd	N		N	Muni	N	N	N	7																		0.13	0.13	0.13	0.13	0.20
April Sound Country Club	N	0.18	N	LU	Y	Y	Y	2	1	45	0.12														0.12		0.12	0.12	0.12	0.12

APPENDIX B

MONTGOMERY COUNTY WATER DEMAND PROJECTIONS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
						WRAP II Questionnaire			WRAP II Questionnaire			H-GAC Population						Unit Demand (gpcd)			Region H WUGs 2011 (MGD)						Joint SJRA GRP Projected Demands (mgd)			
Large Volume Groundwater User (LVGU)	SJRA Joint GRP Participants	2009 Total Qualifying Demand (MGD)	Region H WUG	Demand Basis	LSGCD 2007 - 2009 Pumpage	2007 Connect's	2045 Demand	Water Demand Projection Method	2007 Connect's	Estimate (mgy 2045)	2045 Demand (mgd)	Average 2005 - 2007	2015	2016	2025	2035	2045	Based on Population (gpcd)	Based on Connections (gpcd)	WUG Breakout (2007-2009)	2016	2025	2035	2045	LSGCD Average Pumpage 2007-2009 (MGD)	Special Values	2016	2025	2035	2045
Austin/Texas Golf Ventures, LP	N	0.22	N	LU	Y	Y	Y	7	3	61	0.17														0.12	0.14	0.14	0.14	0.14	0.14
Benders Landing POA (Lexington) fka Lipar Group	N	0.12	N	LU	Y	N	N	7																	0.03	0.03	0.03	0.03	0.03	0.03
Bentwater Yacht & Country Club (Miller #4)	N	0.21	N	LU	Y	N	N	7																	0.15	0.15	0.15	0.15	0.15	0.15
Chateau Woods MUD	N	0.19	N	Muni	Y	Y	Y	2	725	88	0.24	1,074	1,739	1,760	1,944	2,235	2,681		76						0.18		0.19	0.21	0.22	0.24
Crown Oaks P.O.A. Inc.	N	0.04	N	LU	Y	N	N	7																	0.03	0.03	0.03	0.03	0.03	0.03
E.B.J.V., Inc. (FM 1488)	N	0.03	N	LU	Y	N	N	6																	0.03		0.03	0.03	0.03	0.03
E.B.J.V., Inc. (JFP Yard)	N	0.01	N	LU	Y	N	N	6																	0.01		0.01	0.01	0.01	0.01
Eastwood Hills Mobile Home Park	N	0.03	N	Muni	Y	N	N	6																	0.03		0.03	0.03	0.03	0.03
Fellowship of the Woodlands	N	0.04	N	LU	Y	N	N	6																	0.03		0.03	0.03	0.03	0.03
HMRG3 LLC	N	0.18	N	LU	Y	Y	N	6	1																0.14		0.14	0.14	0.14	0.14
Huntsman Petrochemical Corp.	N	0.87	N	LU	Y	Y	Y	2	3	230	0.63														0.50		0.52	0.56	0.59	0.63
Lake Forest Falls	N	0.05	N	Muni	Y	N	N	3				358	412	412	414	433	481	116							0.05		0.05	0.05	0.05	0.06
Lake Windcrest POA, Inc.	N	0.14	N	LU	Y	N	N	7																	0.02	0.02	0.02	0.02	0.02	0.02
Legends Holding Company, L.P.	N		N	LU	N	N	N	7																						
Legends Trace Interests, Ltd	N		N	LU	N	N	N	7																						
Magnolia ISD (Magnolia High School)	N	0.08	N	LU	Y	Y	N	6	4																0.04		0.04	0.04	0.04	0.04
Magnolia ISD (West High School)	N	0.08	N	LU	Y	Y	N	6	4																0.05		0.05	0.05	0.05	0.05
Maverick Tube, LLC dba Tenaris Conroe	N	0.06	N	LU	Y	Y	N	6	2																0.05		0.05	0.05	0.05	0.05
MC MUD No. 56	N	0.11	N	Muni	Y	Y	N	3	306			56	115	116	119	141	187		79						0.08		0.08	0.09	0.09	0.10
Montgomery I S D (Montgomery High School, Irrg)	N	0.03	N	LU	Y	Y	N	6	1																0.01		0.01	0.01	0.01	0.01
Montgomery Place Water System	N	0.03	N	Muni	Y	Y	Y	2	59	7	0.02	77	87	87	87	90	154		111						0.02		0.02	0.02	0.02	0.02
Montgomery Trace POA	N	0.09	N	LU	Y	N	Y	7		25	0.07														0.03	0.03	0.03	0.03	0.03	0.03
Panorama Village Golf Management, LLC fka Panorama Village Country Club	N	0.10	N	LU	Y	Y	Y	7	1	20	0.05														0.02	0.02	0.02	0.02	0.02	0.02
Portofino Shopping Center (Select Strategies Brokerage -OZ Division, Inc)	N	0.04	N	LU	Y	N	N	6																	0.03		0.03	0.03	0.03	0.03
Quadvest, LP. (McCall Sound)	N	0.02	N	Muni	Y	Y	Y	2	15	12	0.03	8	9	9	9	10	11		36						0.01		0.01	0.02	0.03	0.03
Ridge Lake Shores POA	N	0.24	N	LU	Y	N	Y	7		20	0.05														0.09	0.09	0.09	0.09	0.09	0.10
River Plantation Mgt LLC (fka River Plantation Country Club)	N	0.14	N	LU	Y	N	N	7																	0.05	0.05	0.05	0.05	0.05	0.05
Splendora ISD	N	0.03	N	LU	Y	N	N	6																	0.01		0.01	0.01	0.01	0.01
SR Superior, LLC (fka New Millennium Farms)	N	0.21	N	LU	Y	N	N	6																	0.16		0.16	0.16	0.16	0.16
Texas National Golf Club	N	0.12	N	LU	Y	N	N	7																	0.10	0.10	0.10	0.10	0.10	0.10
The Woodlands Land Development Company, LP	N	0.51	N	LU	Y	N	N	6																	0.30		0.30	0.30	0.30	0.30
Town of Woodloch	N	0.10	N	Muni	Y	N	N	3				167	189	189	189	191	199	128							0.07		0.07	0.07	0.07	0.07
W. W. Webber, LLC (FM 242)	N	0.01	N	LU	Y	N	N	7																	0.01					
Westmont Mobile Home Park	N	0.04	N	Muni	Y	Y	N	3	103			82	119	127	194	198	201		71						0.02		0.02	0.02	0.02	0.02
Williams Brothers Construction Co., Inc	N	0.04	N	LU	N	N	N	7																						
Woodforest Golf Club LLC	N	0.36	N	LU	Y	N	N	7																	0.23	0.23	0.23	0.23	0.23	0.23
Woodland Lakes WSC	N	0.06	N	Muni	Y	N	N	3				561	634	636	654	746	876	45							0.03		0.03	0.03	0.04	0.04
Region H Total Water																					88.91	110.15	133.28	161.20			88.91	110.15	133.28	161.20
LVGU Total (GRP Participants and non-GRP Participants)		69.98																									82.39	99.11	113.97	129.81
Region H Exemptions																					3.02	3.29	3.59	3.69			3.02	3.29	3.59	3.69
Safe Harbor County Other																												7.75	15.72	27.70
GRP Demand		54.92																									59.67	73.77	85.21	97.37
GRP Participant Total & County Other	140	54.92																									59.67	81.51	100.93	125.07
Surface Water Required																											21.2	43.1	62.5	86.6

Water Demand Projection Methods (Column 9)

1. Demand was input from the Region H 2011 Water Plan (except for Entergy, see method projection 8). The data was interpolated from the Water Plan to project the years required by DRP Phase II(B).
2. Demand was determined by taking the greater of the average pumpage (2007 – 2009) or an interpolation between the average pumpage (2007 – 2009)and the 2045 demand projections based on questionnaires responses.
3. Demand was determined by taking the greater of the average pumpage (2007 – 2009) or an interpolation between the pumpage data and Unit Demand calculated times the HGAC population in 2045.
4. Demand was calculated using 128 gallons per capita per day (gpcd) times the HGAC population. (128 gpcd is the Region H Unit Demand for County Other).
5. Demand was calculated using 128 gpcd times the HGAC population in 2016 then years 2025 and 2035 were interpolated between the calculated 2016 and 2045 demands.
6. Demand equals the average pumpage (2007 – 2009) for all years. Demand remains constant through the planning period.
7. Demand was based on a "Special Value" entered into the table. Special values were based on comparison with similar entities.
8. Special consideration for Entergy.

Appendix C

Water Supply Potential Source Study

Water Supply
Potential Source Study

Montgomery County
Alternative Water Supply Program

Ronald D. Kelling

Ronald D. Kelling, P.E.

January 26, 2009

Date

January 2009

Table of Contents

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Executive Summary

ES.1 Background and Purpose

The Lone Star Groundwater Conservation District (LSGCD) established a regulatory target in its District Regulatory Plan (DRP) Phase I to reduce groundwater withdrawals from the aquifer in Montgomery County to 64,000 acre-feet per year by January 2015. The LSGCD DRP Phase II (A) requires certain large volume groundwater users (LVGU) to submit a Water Resources Assessment Plan (WRAP) which includes identification of new water supply sources to meet projected water demands. The purpose of this study is to identify potential alternative water sources available to Montgomery County to reduce groundwater use and meet projected water demands, evaluate those potential sources, and select a source to be used as the basis for the SJRA Joint WRAP Part II.

The identification and evaluation of potential alternative water sources began in 2007 and was completed in 2008. Data was collected throughout the study period. A baseline was established based on that data for which all alternatives were equitably evaluated for the purpose of this study.

ES.2 Water Sources

For purposes of this Potential Source Study, a broad range of water supply sources were considered. Available water sources include groundwater and surface water in both the San Jacinto and Trinity River Basins.

ES.3 Water Demands

Projected countywide water demand based on long-term water planning conducted by Region H and the Texas Water Development Board is as follows.

Table ES-1. Water Demands

Year	Demand (afpy)
2015	90,000
2025	114,000
2035	137,000
2045	165,000
2055	201,000
2060	220,000

ES.4 Alternatives

Various alternatives identified and screened include the following.

1. SJRA trade its Trinity River Basin water rights for the City of Houston's Lake Conroe water rights
2. SJRA trade its San Jacinto Basin water rights for the City of Houston's Lake Conroe water rights
3. SJRA purchase the City of Houston's Lake Conroe water rights
4. SJRA participate in Luce Bayou project in exchange for use of the City of Houston's Lake Conroe water rights
5. SJRA enters into a Long-Term Contract with the NHCRWA for treated surface water
6. SJRA enters into a Long-Term Contract with the City of Houston for Lake Conroe raw surface water
7. SJRA enters into a Long-Term Contract with the Trinity River Authority for raw surface water diverted from the Trinity River near Huntsville
8. SJRA enters into a Long-Term Contract with the City of Houston for Lake Conroe raw surface water plus a Long-Term Contract with the Trinity River Authority for raw surface "replacement" water diverted from the Trinity River near Huntsville
9. SJRA enters into a Long-Term Contract for imported groundwater

ES.5 Comparison of Alternatives

Initial screening of alternatives resulted in four scenarios carried forth for further evaluation. These four scenarios included the long-term water supply contracts for surface water with the City of Houston and Trinity River Authority and for imported groundwater (Alternative Nos. 6, 7, 8, and 9). For the purpose of comparing water sources, preliminary diversion locations, water treatment, finished water storage and pumping, and transmission size and routing were identified. Costs related to the implementation of each alternative were developed and are shown in Table ES-2. These costs were spread over the projected countywide water demands (excluding exempt demands), resulting in equivalent unit costs as shown in Exhibit ES-1.

Table ES-2. Costs

	Current SJRA Conroe Rights (Beginning 2015) + Contract COH Water In Conroe (Beginning 2025)+ SJRA's Trinity River Rights Via Luce Bayou (2055)	Current SJRA Conroe Rights (Beginning 2015) + Contract TRA Water From Trinty U/S of Livingston (Beginning 2025) + SJRA's Trinity River Rights Via Luce Bayou (2055)	Current SJRA Conroe Rights (Beginning 2015) + Contract COH Water In Lake Conroe and TRA Water From Trinty U/S of Livingston (Beginning 2025) + SJRA's Trinity River Rights Via Luce Bayou (2055)	Contract Imported Groundwater (Beginning 2015) + Current SJRA Conroe Rights (Beginning 2045) + SJRA's Trinity River Rights Via Luce Bayou (2055)
	Capital Costs (2008 Dollars)	Capital Costs (2008 Dollars)	Capital Costs (2008 Dollars)	Capital Costs (2008 Dollars)
Phase				
2009-2014 Planning	$100,088,000	$100,088,000	$100,088,000	$80,510,000
2015	$313,002,000	$313,002,000	$313,002,000	$246,547,000
2025	$63,690,900	$321,172,950	$346,192,350	$68,652,150
2035	$252,913,500	$252,913,500	$252,913,500	$269,415,300
2045	$154,747,950	$154,747,950	$154,747,950	$209,321,700
2055	$594,922,650	$594,922,650	$594,922,650	$594,922,650
Total	$1,479,365,000	$1,736,847,050	$1,761,866,450	$1,469,368,800
	Capital Costs (Dollars in Year Constructed)	Capital Costs (Dollars in Year Constructed)	Capital Costs (Dollars in Year Constructed)	Capital Costs (Dollars in Year Constructed)
Phase				
2009-2014 Planning	$110,347,000	$110,347,000	$110,347,000	$88,762,000
2015	$399,479,000	$399,479,000	$399,479,000	$314,664,000
2025	$132,409,000	$667,696,000	$719,709,000	$142,723,000
2035	$856,455,000	$856,455,000	$856,455,000	$912,336,000
2045	$853,592,000	$853,592,000	$853,592,000	$1,154,622,000
2055	$5,345,385,000	$5,345,385,000	$5,345,385,000	$5,345,385,000
	Present Worth Value (2015 thru 2060) (2008 Dollars)	Present Worth Value (2015 thru 2060) (2008 Dollars)	Present Worth Value (2015 thru 2060) (2008 Dollars)	Present Worth Value (2015 thru 2060) (2007 Dollars)
	$2,996,691,827	$3,461,237,563	$3,900,374,038	$5,481,265,502

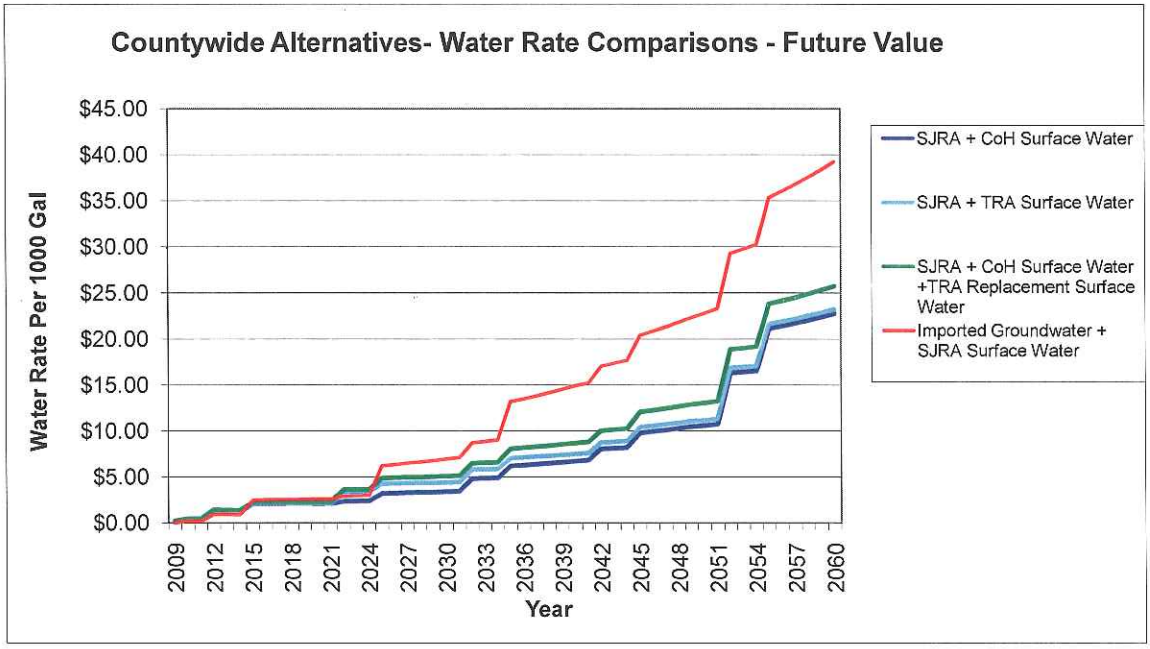

Exhibit ES-1. Unit Cost Comparisons

ES.6 Recommendation and Conclusion

The most cost-effective source-water supply alternative is the use of SJRA water rights in Lake Conroe plus a long-term water supply contract with the City of Houston for its water in Lake Conroe. While it is anticipated that the final diversion locations and amounts, and infrastructure size and location will vary from the baseline developed in this study, the final conclusion will remain the same. Therefore it is recommended that all of the permitted yield of Lake Conroe be utilized to supply treated surface water in Montgomery County prior to the conveyance of water from additional sources into the county and that a long-term water supply contract with the City of Houston be executed in a timely manner.

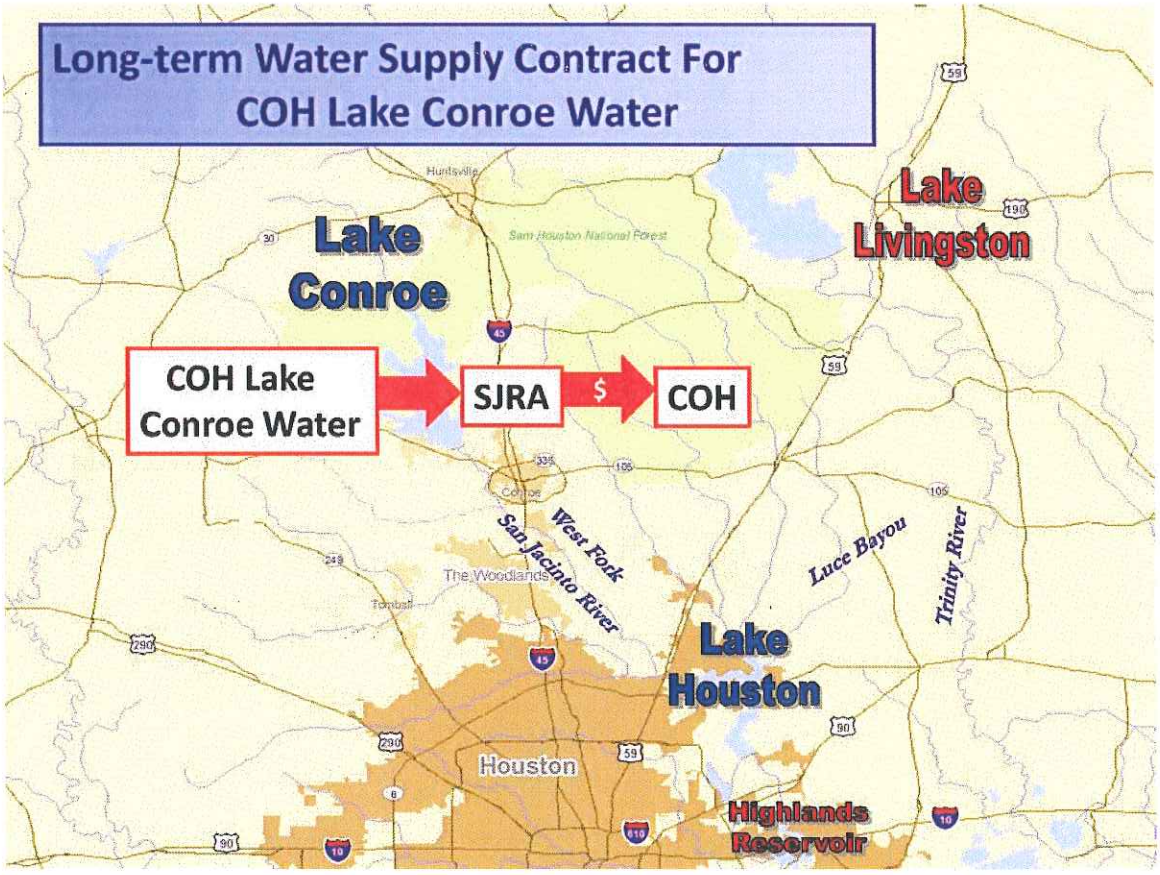

Exhibit ES-2. Recommended Water Supply

Section 1 Introduction

1.1 Background

The Lone Star Groundwater Conservation District (LSGCD) was created by the Texas Legislature in 2001 to conserve, protect, and enhance the groundwater resources of Montgomery County. Scientific studies conducted by the LSGCD quickly confirmed what many water suppliers in Montgomery County were already seeing, which is that the demand for groundwater in many places within the county was exceeding what the aquifers could sustainably yield, and water levels were declining at an alarming rate. Modeling of future population and water demand showed that the projected impacts of continued reliance on groundwater would soon create significant water-level declines and severe problems for water suppliers in every area of Montgomery County.

In an effort to begin reducing groundwater demands and encourage the conjunctive use of surface water and groundwater supplies, the LSGCD recently adopted regulations that require certain groundwater users to conduct long-term planning to assess their future water needs and describe how they will obtain alternative water supplies to meet their future demands in light of the reduction requirements adopted by the LSGCD. The specific requirements for this planning are set forth in the LSGCD's District Regulatory Plan (DRP) Phase II (A) and are based on the regulatory target established in the DRP Phase I to reduce groundwater withdrawals in Montgomery County to 64,000 acre-feet per year by January 2015.

The LSGCD DRP Phase II (A) requires certain large volume groundwater users (LVGU) to submit a Water Resources Assessment Plan (WRAP), which is divided into two major parts. Part I includes information about current and projected water demands; identification of current water supplies; and description of current well capacities. Part II includes identification of new water supply sources to meet projected water demands; description of infrastructure needed to deliver new supplies; timeline and cost estimate for development of new supplies; and a letter from the supplier confirming the availability of the new supplies.

The SJRA submitted a Joint WRAP Part I to the LSGCD in August 2008. The Joint WRAP included 198 of the LVGUs in Montgomery County.

1.2 Purpose

The purpose of this study is to identify potential alternative water sources available to Montgomery County to reduce groundwater use and meet projected water demands, evaluate those potential sources, and select a source to be used as the basis for the SJRA Joint WRAP Part II study.

Section 2 Water Sources

2.1 Groundwater

The Northern Gulf Coast Aquifer System consists of the Chicot and Evangeline aquifers, the Burkeville confining layer, and the Jasper aquifer. In Montgomery County, the Chicot aquifer is shallow and is used primarily by single family and agricultural interests on individual wells. The primary groundwater sources for public water supply systems in Montgomery County are the Evangeline and Jasper aquifers.

The sustainable yield from the Evangeline and Jasper aquifers is based on the recharge rate of the aquifer. The amount of recharge varies with the amount of rainfall that infiltrates into each aquifer. The recharge zones are shown in Exhibit 2-1 below.

Exhibit 2-1. North Gulf Coast Aquifer System

The LSGCD Groundwater Management Plan (GMP), adopted in 2003, assumed the sustainable groundwater yield for Montgomery County is 64,000 acre-feet per year (afpy) based on an annual deep recharge to the Northern Gulf Coast Aquifer System of approximately 1.1 inches per year applied to the entire surface area of the county in acres (697,600 acres). As seen in Exhibit 2-1, the outcropping of the three aquifers, and particularly the Evangeline and Jasper aquifers do not coincide with the county boundary.

The Texas Water Development Board (TWDB) has recently released preliminary results of the Northern Gulf Coast Aquifer Groundwater Availability Model (GAM) which indicate the recharge rate could be considerably less than 64,000 afpy. The LSGCD has contracted with the US Geological Survey (USGS) to conduct a three-year study of the recharge rate. Preliminary results of that study will not be available until late 2009 and final results will not be available until 2010. The LSGCD has chosen not to adopt the TWDB GAM data at this time, but rather wait until the USGS study results are available. Regardless of the results of these studies, it is clear that the existing groundwater supply cannot meet the growing water demands of Montgomery County.

2.2 Imported Groundwater

LSGCD DRP Phase II (A) does not allow consideration of groundwater imported from adjacent counties as an alternative water supply source. Therefore any groundwater imported into Montgomery County must be conveyed across at least one county. The major aquifers of Texas are shown in Exhibit 2-2 below.

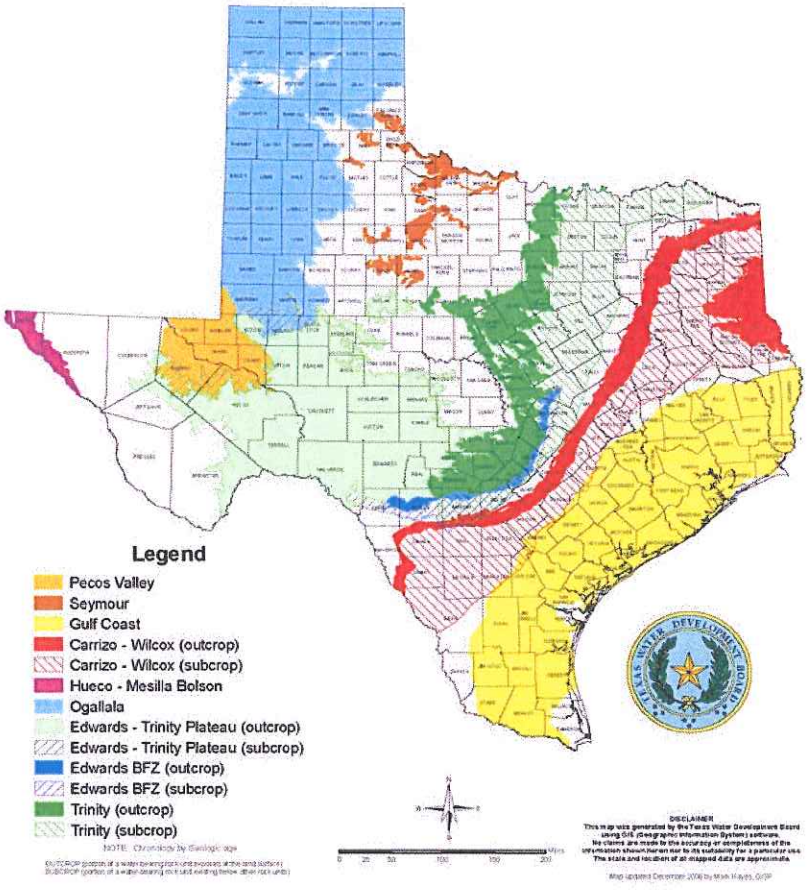

Exhibit 2-2. Major Aquifers (TWDB, Dec. 2006)

It should be noted, however, that the option of importing groundwater from other nearby counties triggers additional legal and policy issues. The state of Texas has been divided into groundwater management areas (GMAs), which are essentially regional planning areas established over common aquifers. Montgomery County is within GMA 14. The various groundwater conservation districts (GCDs) in each GMA are responsible for defining a desired future condition for each aquifer within their planning area. Each GCD then develops a groundwater management plan and regulations that are intended to meet the desired future condition for the aquifer within its GMA. It is anticipated that some GCDs may not allow the exportation of groundwater from their district, therefore limiting or eliminating the option to import groundwater from that GCD into Montgomery County.

2.3 Surface Water

As shown in Exhibit 2-3, Montgomery County is located in the San Jacinto River basin. The Trinity River is located to the north and east of Montgomery County. The Brazos River is located to the west of Montgomery County.

Exhibit 2-3. Major River Basins of Texas (TWDB, Jan. 2003)

2.4 SJRA Surface Water Rights

Surface water in Texas lakes and rivers is owned by the State of Texas. Entities and individuals who want to divert and use surface water are required to hold a water right granted by the state to do so. Each right is based on a priority system as reflected by a date attached to each water right. The SJRA holds surface water rights granted by the State of Texas shown in Table 2-1 and Exhibit 2-4.

Table 2-1. SJRA Surface Water Rights

Location	Permitted Diversion (afpy)	Permitted Use	Priority
Lake Conroe	22,000	Municipal	1959, 1965
	9,500	Industrial	1959, 1965
	1,833	Mining	1959, 1965
Run-of-River at Lake Houston	55,000	Municipal, Industrial, Irrigation	1942
Run-of-River at CWA Pump Station on Trinity River	56,000	Multiple Use	1917 thru 1936
Run-of-River at CWA Pump Station on Trinity River	30,000	Multiple Use	1914, 2004
Reuse at Lake Houston from Wastewater Effluent from SJRA's three Woodlands WWTPs	14,944	Multiple Use	2004
Lake Houston	14,000	Multiple Use	2003
Run-of-River at Lake Houston (Pending)	40,000	Multiple Use	2003

In addition to data provided in the table, the water rights are also defined by diversion location, diversion rate, reliability, and other permit provisions. Some water rights in the Trinity River basin and San Jacinto River basin also contain environmental flow restrictions which may limit diversions under specified flow conditions in the respective rivers.

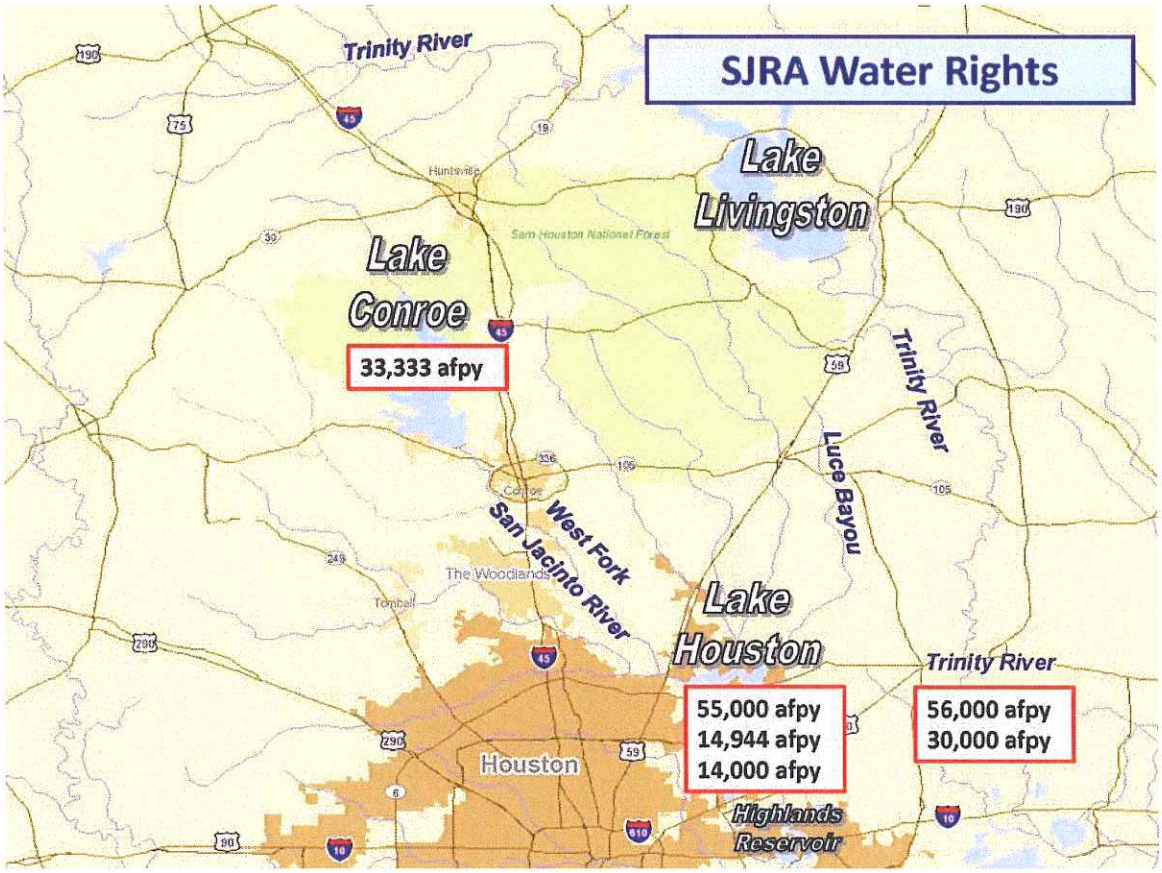

Exhibit 2-4. SJRA Existing Water Rights

2.5 Other Surface Water Sources

City of Houston

The City of Houston holds considerable water rights in the Trinity River Basin, including Lake Livingston, and the San Jacinto River basin, including Lake Houston. The City of Houston's water rights in Lake Conroe total 66,667 afpy and are shown in Table 2-2 below.

Table 2-2. City of Houston Water Rights in Lake Conroe

Permitted Diversion Amount (afpy)	Permitted Use	Priority
44,000	Municipal	1959, 1965
19,000	Industrial	1959, 1965
3,667	Mining	1959, 1965

Trinity River

Various entities hold water rights in the Trinity River, including the Trinity River Authority.

Brazos River

Various entities hold water rights in the Brazos River, including the Brazos River Authority.

2.6 Treated Surface Water

The North Harris County Regional Water Authority (NHCRWA) is located in Harris County immediately south of Montgomery County. The NHCRWA purchases treated surface water from the City of Houston which diverts the water from Lake Houston, treats it at the City's Northeast Water Purification Plant, and conveys it to NHCRWA through a pipeline. The NHCRWA is in the process of constructing a treated surface water transmission system within its boundaries as shown in Exhibit 2-5.

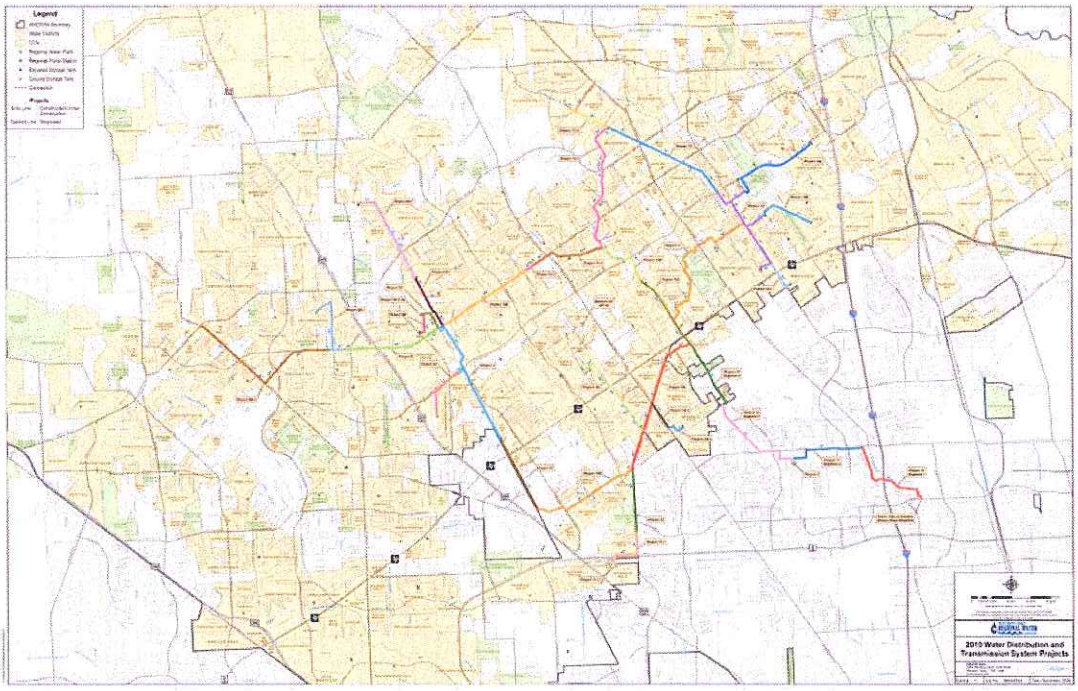

Exhibit 2-5. NHCRWA Surface Water Supply System

2.7 Treated Wastewater Effluent

As cheap, sustainable groundwater is limited and readily available surface water is expensive to treat and transmit, treated wastewater effluent becomes a viable source of water for some uses. Many public entities are permitted by the State of Texas to collect, treat and discharge

wastewater throughout Montgomery County. Effluent reuse is considered a water supply management strategy and will be addressed further in the SJRA Joint WRAP Part II.

2.8 Water Conservation

Water conservation is recognized as one of the most efficient methods to address future water supply issues. Simply reducing the overall water demand delays the need for the development of future water supplies. Water conservation is considered a demand management strategy and will be addressed further in the SJRA Joint WRAP Part II.

2.9 Drought Management

Management strategies implemented during periods of drought or other historically high water demand periods, reduces the peak demands thereby potentially reducing the amount of additional water supplies and size of water infrastructure required. Drought management is also considered a demand management strategy and will be considered further in the SJRA Joint WRAP Part II.

Section 3 Water Demands

3.1 Highlands

The SJRA currently provides raw surface water to various customers in the Highlands. Some of these customers have depended on and paid for this reliable water supply since the 1940s. The water is primarily used for industrial purposes with relatively minor amounts for irrigation and municipal purposes. The projected surface water demands for the Highlands is approximately 80,000 afpy as shown in Exhibit 3-1.

3.2 Montgomery County

Based on data provided by the Texas Water Development Board and utilized in the development of the 2006 Region H Plan and the 2007 State Water Plan, projected water demands for Montgomery County are as shown in Table 3-1.

Table 3-1. Water Demand

Year	Demand (afpy)
2015	90,000
2025	114,000
2035	137,000
2045	165,000
2055	201,000
2060	220,000

The LSGCD DRP Phase II (A) requires the development of a Water Resources Assessment Plan (WRAP) through the planning period ending 2045. The SJRA chose to initially review water supply requirements to 2060. This coincides with statewide water planning efforts coordinated by the Texas Water Development Board.

Planning out this far into the future also forces the identification of potential water supplies in addition to Lake Conroe. The total surface water demand for Montgomery County is projected to be approximately 165,000 afpy in 2045. Since the combined sustainable groundwater available is 64,000 afpy and the permitted yield of Lake Conroe is 100,000 afpy, additional water supplies will be required to meet the needs beyond 2045. The projected surface water demands for Montgomery County are shown on Exhibit 3-1. Identifying water supplies to meet Montgomery County water demands greater than those

available from Lake Conroe and the aquifers provides a different perspective for long range planning.

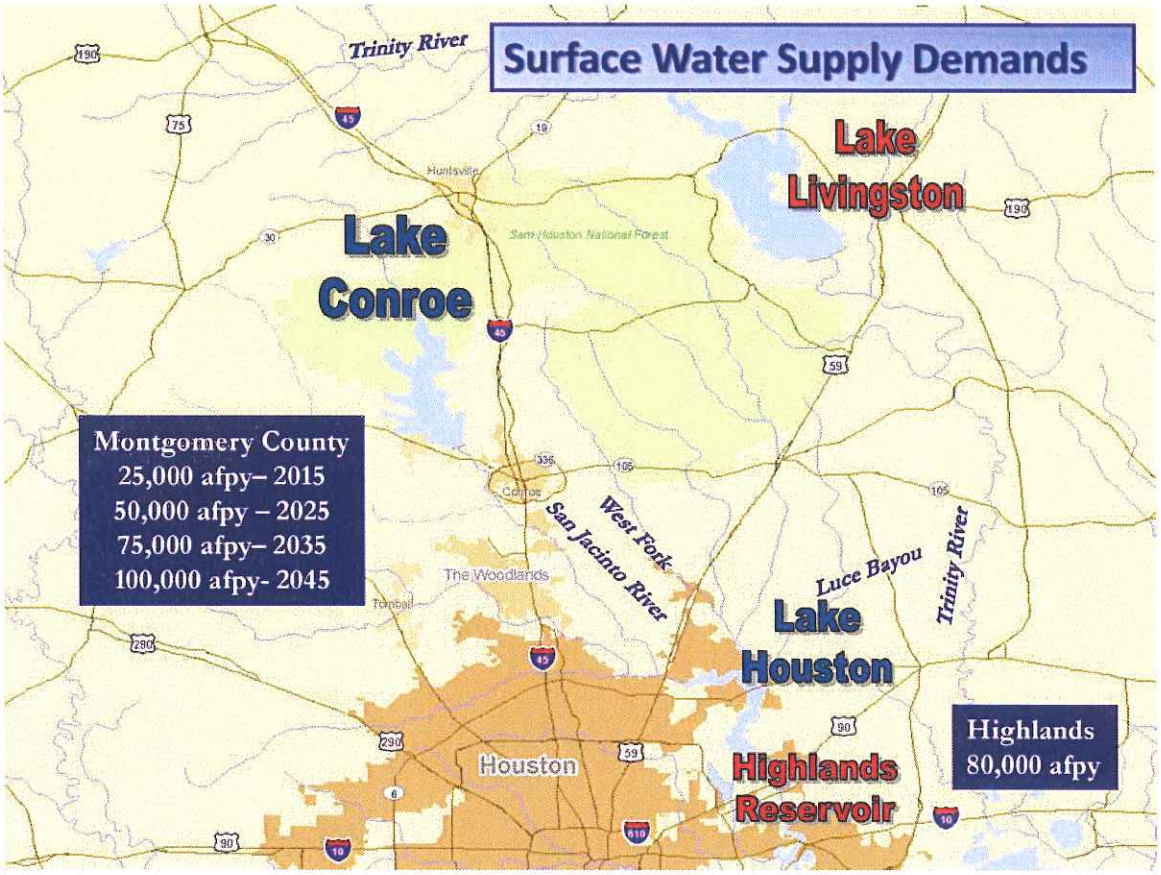

Exhibit 3-1. Surface Water Supply Demands

Section 4 Alternatives

4.1 Water Rights Trade

The SJRA initiated and has pursued a potential water rights trade with the City of Houston for several years. The discussions included various scenarios offered by the SJRA including the following:

- trade SJRA's surface water rights in the Trinity River for the City's surface water rights in Lake Conroe (Exhibit 4-1)
- trade SJRA's surface water rights in the San Jacinto River Basin (including Lake Houston) for the City's surface water rights in Lake Conroe (Exhibit 4-2)

Exhibit 4-1. SJRA Trinity Rights for COH Lake Conroe Rights

Currently the SJRA serves its Highlands customers with surface water in Lake Houston and the Trinity River. Therefore a trade of a portion of these rights would require a reapportionment of surface water to assure the water demands of these long-term customers are met. A significant investment in infrastructure would be required to meet the reapportionment of surface water.

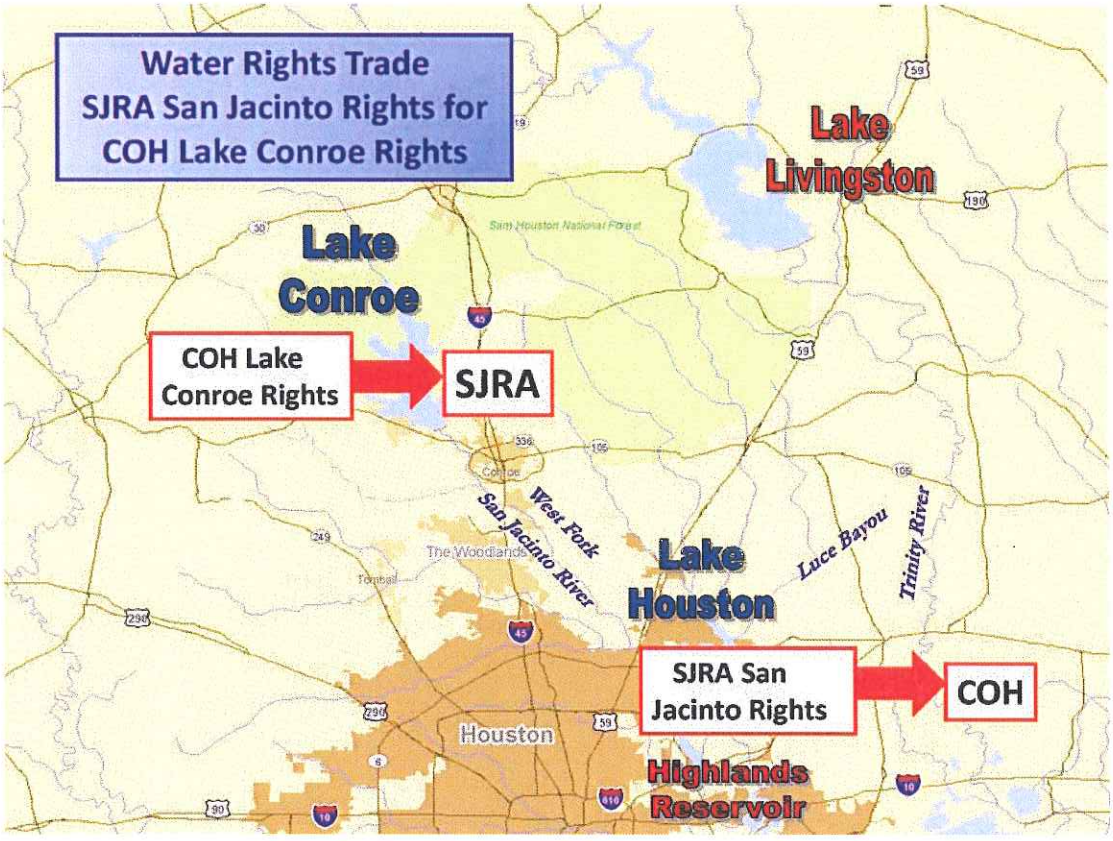

Exhibit 4-2. SJRA San Jacinto Rights for COH Lake Conroe Rights

Each surface water right is defined by limits and restrictions placed in the permit such as the following:

- diversion location, amount and rate
- type of use
- priority
- environmental flow restrictions

For each potential combination of surface water rights included in a potential trade, each component of the trade was evaluated based on the criteria noted above, along with the impact on the SJRA's ability to continue to meet its current customer needs. Results from Water Availability Models (WAMs) -- including reliability analysis, consideration for conveyance losses, and infrastructure required in the Highlands to convey alternative sources of water to existing customers -- were also included in the analysis of each combination.

After considerable effort directed toward this effort, including numerous meetings and proposals, *the City of Houston ultimately informed the SJRA that it was not interested in furthering discussions regarding a water rights trade and this alternative was eliminated from further review.*

4.2 Water Rights Purchase

The SJRA has discussed an outright purchase of the City of Houston's surface water rights in Lake Conroe as shown in Exhibit 4-3. A purchase of this size is not common in the state of Texas and therefore there is no market pricing available. Instead, the value of a surface water right is strictly limited to a common value placed on it by a willing seller and a willing buyer. The sale would require the SJRA to issue a bond to purchase the water rights.

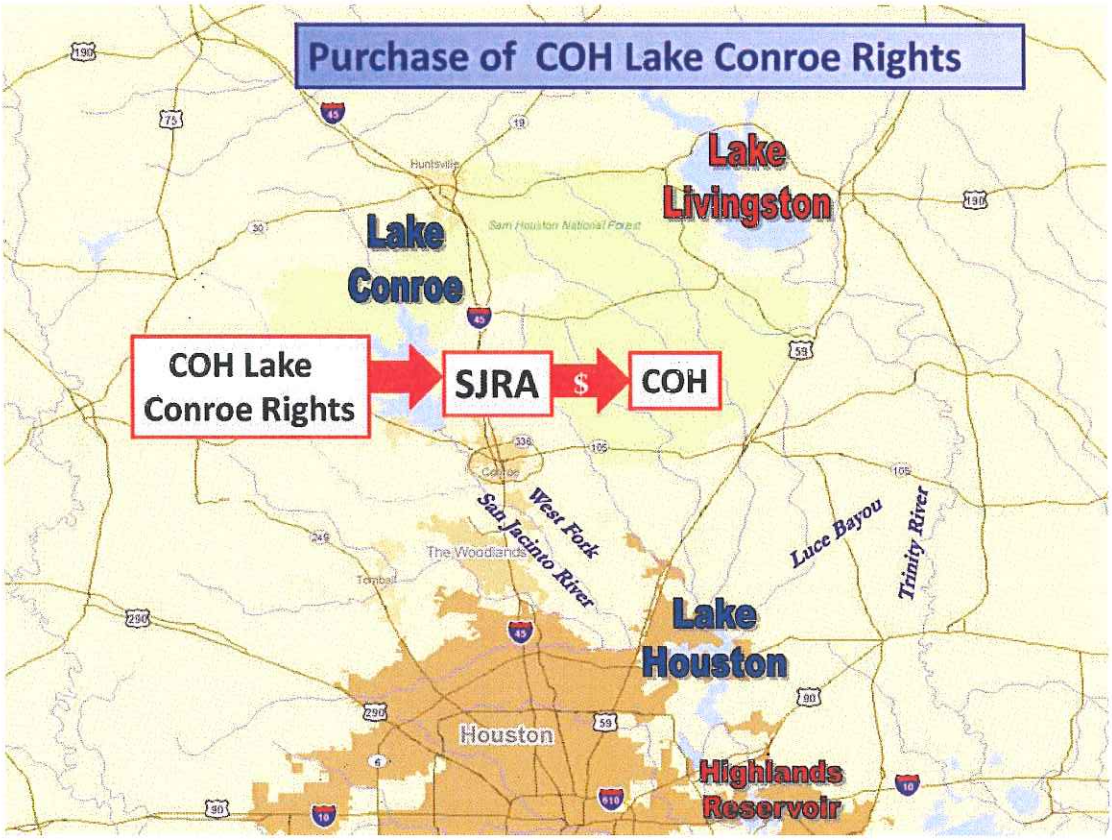

Exhibit 4-3. Purchase of COH Lake Conroe Rights

The City of Houston initially considered the idea; however it *ultimately informed the SJRA that it was not interested in further discussions regarding a sale of its water rights*. Therefore this alternative was eliminated from further review.

4.3 Participation in Luce Bayou

The City of Houston is participating in an agreement with the North Harris County Regional Water Authority (NHCRWA), West Harris County Regional Water Authority (WHCRWA), North Fort Bend Water Authority (NFBWA) and Central Harris County Regional Water Authority (CHCRWA) to construct the Luce Bayou Interbasin Transfer Project which would

convey raw surface water from the Trinity River near Capers Ridge to Lake Houston. The raw water will ultimately be diverted from Lake Houston and treated at the City of Houston Northeast Water Purification Plant and the East Water Purification Plant. The Coastal Water Authority (CWA) is responsible for implementing the project with a target completion date of 2020.

Participation in the Luce Bayou Interbasin Transfer Project was offered by the City of Houston as a method for the SJRA to utilize the City of Houston's surface water in Lake Conroe as represented in Exhibit 4-4. Participation would require a substantial initial payment to the City of Houston plus monthly payments as surface water is diverted. The City of Houston would retain ownership of the surface water rights.

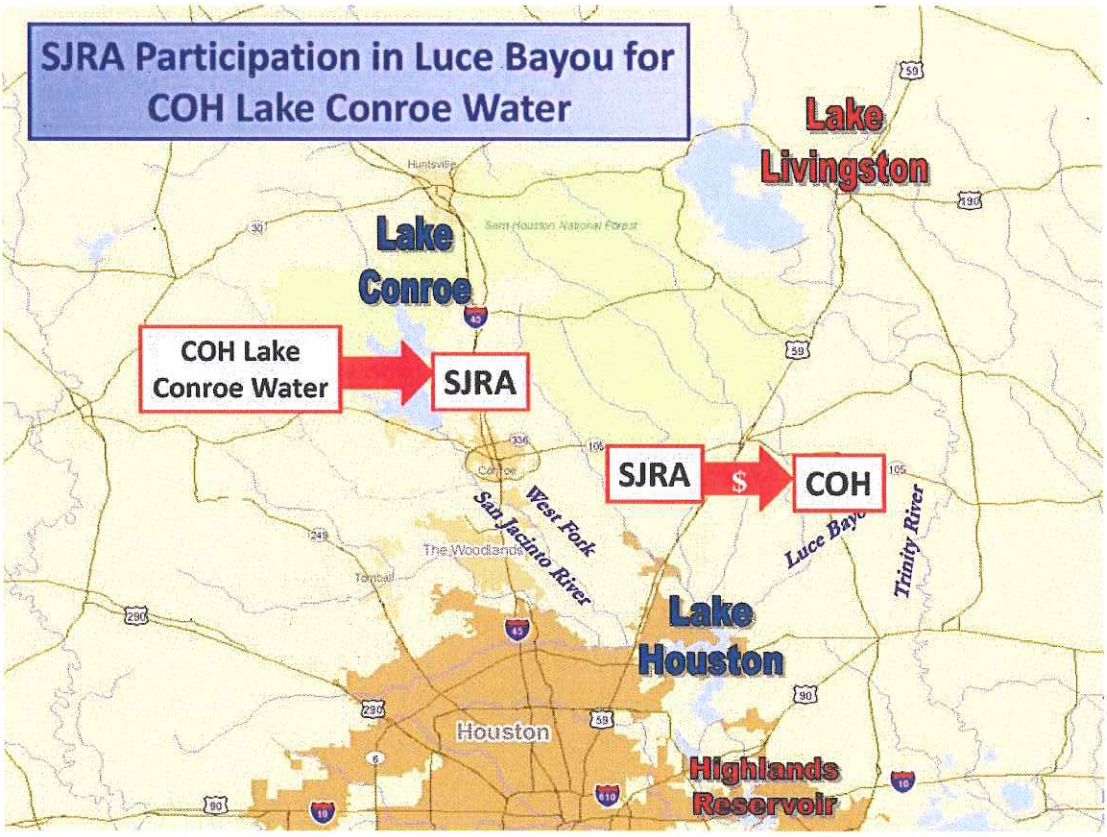

Exhibit 4-4. Participation in Luce Bayou For COH Lake Conroe Water

The SJRA evaluated the contractual arrangement and financial conditions of participation in the Luce Bayou Interbasin Transfer Project. *After review, the SJRA determined participation was not fiscally prudent and this alternative was eliminated from further review.*

4.4 North Harris County Regional Water Authority Long-Term Water Contract

The surface water supply pipeline from the Northeast Water Purification Plant to portions of northwest Harris County constructed by the City of Houston with participation by the NHCRWA contains approximately 10 MGD of additional capacity that has not been allocated. Potentially this surface water could be transmitted through the existing NHCRWA surface water supply system to southern Montgomery County as represented in Exhibit 4-5. The existing pipeline does not have adequate capacity to meet the entire needs of Montgomery County, therefore participation in additional treatment and transmission capacity with the NHCRWA and/or City of Houston would be required. In addition, a water transmission system would be required from the NHCRWA system to Montgomery County. *The anticipated cost of the water at the NHCRWA system delivery point plus the costs to convey to Montgomery County were not considered to be cost-effective and therefore this alternative was eliminated from further study.*

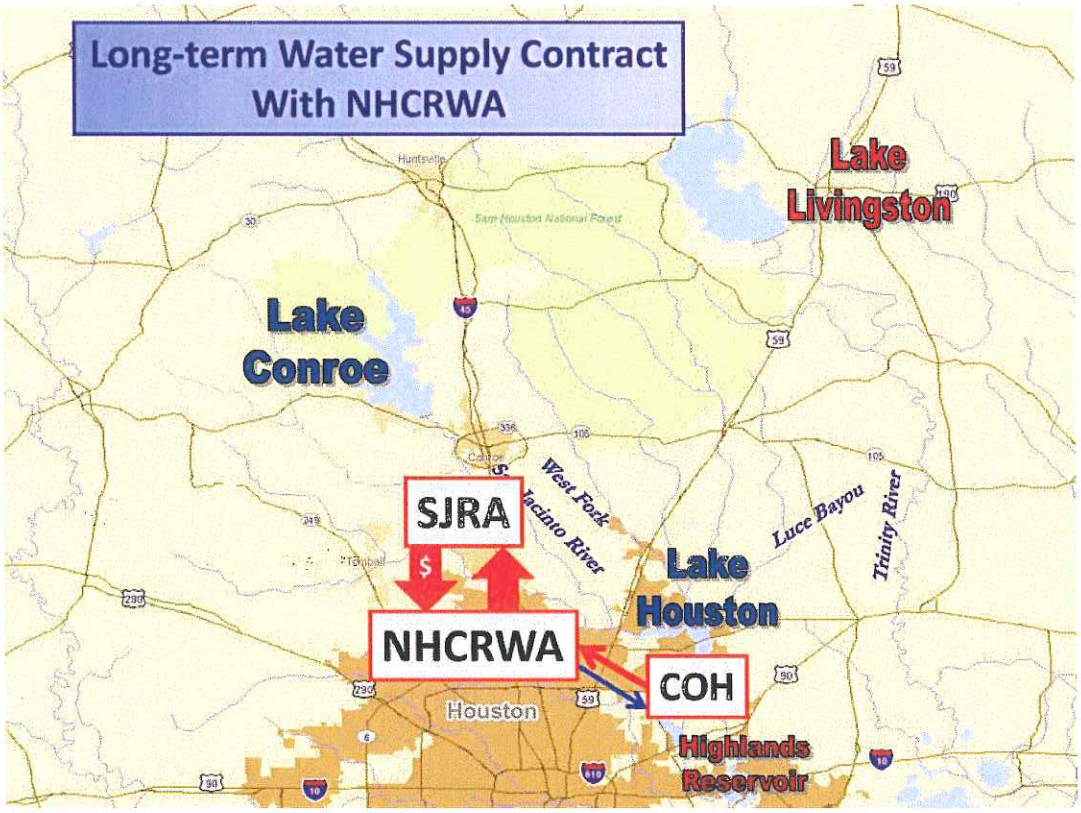

Exhibit 4-5. Long-Term Water Supply Contract with NHCRWA

4.5 City of Houston Long-Term Water Supply Contract

After the City of Houston indicated it was no longer interested in further discussions of either a water rights trade or sale, the SJRA initiated discussions regarding a long-term water

supply contract with the City of Houston to supplement the surface water in Lake Conroe currently owned by the SJRA as represented in Exhibit 4-6. The contract would include terms by which the SJRA would reserve and purchase surface water in Lake Conroe from the City's portion of water in the lake. The City of Houston would retain its surface water rights in Lake Conroe.

Typically long-term raw water supply contracts include a provision termed a "reservation fee" or a "ready to serve fee". The seller of the water places the amount of water desired by the purchaser in reserve. Once the purchaser begins use of the water, it must pay an agreed-upon volumetric rate for the water used. The reservation assures the purchaser that the seller will not sell the reserved water to any other entity. The purchaser usually pays a "reservation fee" or "ready to serve fee" for this provision. Once the contract is executed, the purchaser begins paying the reservation fee. *This alternative remains viable and since negotiations with the City of Houston remain ongoing, potential terms of such a contract are not presented.*

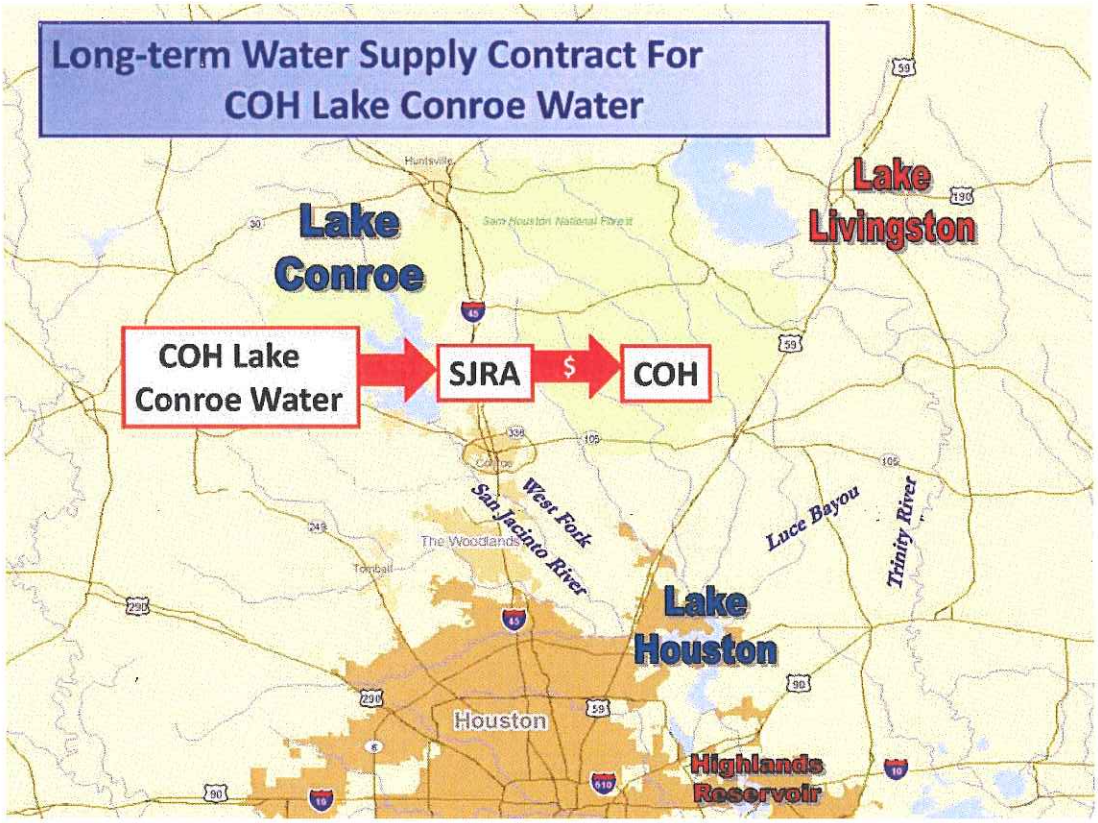

Exhibit 4-6. Long-Term Water Supply Contract for COH Lake Conroe Water

4.6 Trinity River Authority Long-Term Water Supply Contract

The SJRA has also discussed a long-term water contract with the Trinity River Authority (TRA) to purchase water from the TRA on a long-term contract basis to supplement the surface water in Lake Conroe currently owned by the SJRA. The TRA proposes to divert surface water from the Trinity River at the same diversion point used to supply raw surface water to the water treatment plant serving the City of Huntsville. A raw water transmission system would be required to convey the water from this discharge point to the upper reaches of Lake Conroe.

Preliminary planning included identification of potential delivery points at Lake Conroe, alternative corridors, potential transmission line sizing, environmental issues and project costs.

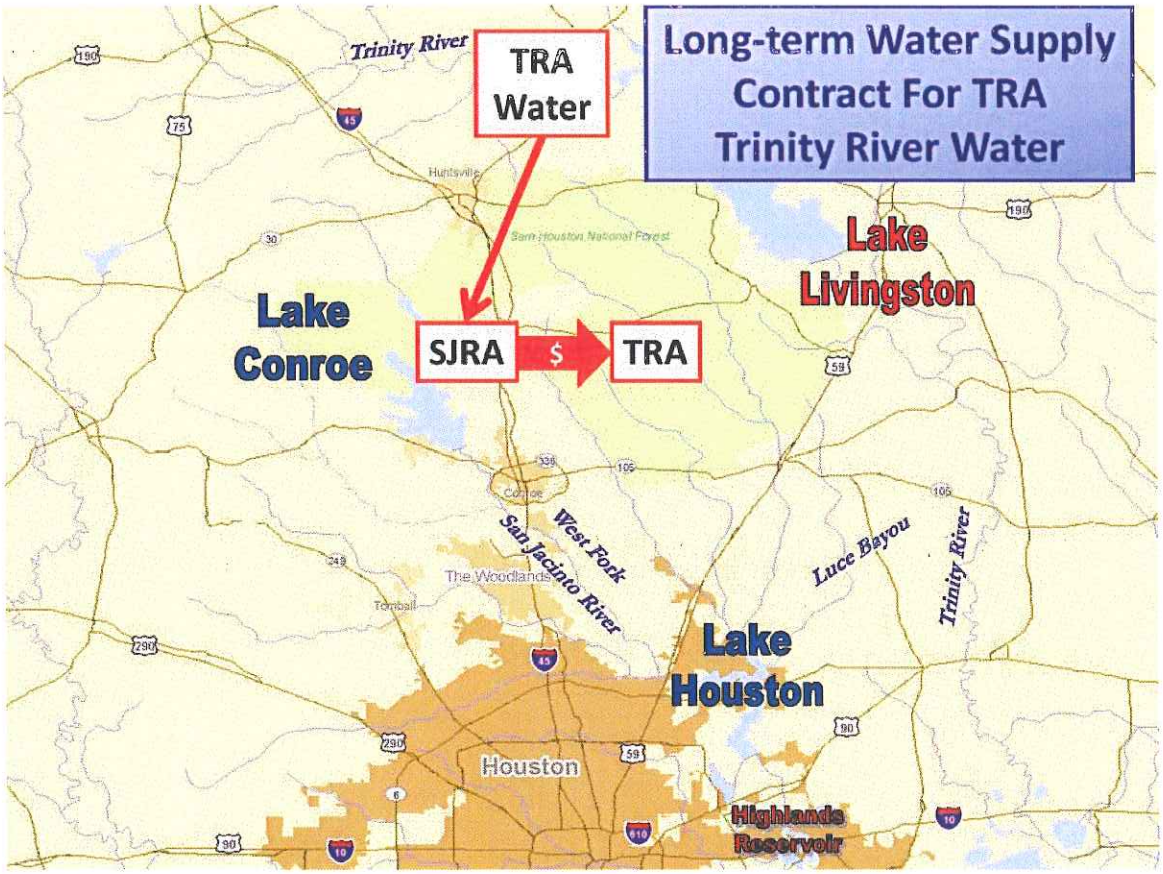

Exhibit 4-7. Long-Term Water Supply Contract for TRA Water

Discussions were conducted and remain open with the Trinity River Authority regarding potential contractual requirements for a long-term water contract including amount of surface water available, reservation fees, contract water rates and other requirements.

4.7 City of Houston Long-Term Water Supply Contract and Trinity River Authority Long-Term Replacement Water Supply Contract

Some residents, primarily owners of property adjacent to or very near Lake Conroe, have raised a concern about varying lake levels due to diversions of surface water from the lake. Therefore a combination of the two previously identified alternatives was considered to supplement the volume of surface water in Lake Conroe currently owned by the SJRA. This alternative included a long-term water supply contract with the City of Houston to purchase water in Lake Conroe, and a long-term water contract with the Trinity River Authority to purchase "replacement" water in the Trinity River. The concept would include conveying water from the Trinity River via the Huntsville transmission system described above solely to replace water diverted from Lake Conroe that is either water currently held by the SJRA and/or water purchased from the City of Houston.

Under this approach lake level would not vary due to diversions to meet the demands within Montgomery County, but would fluctuate as it does now with varying rainfall, required releases, watershed drainage, seepage, evaporation, etc.

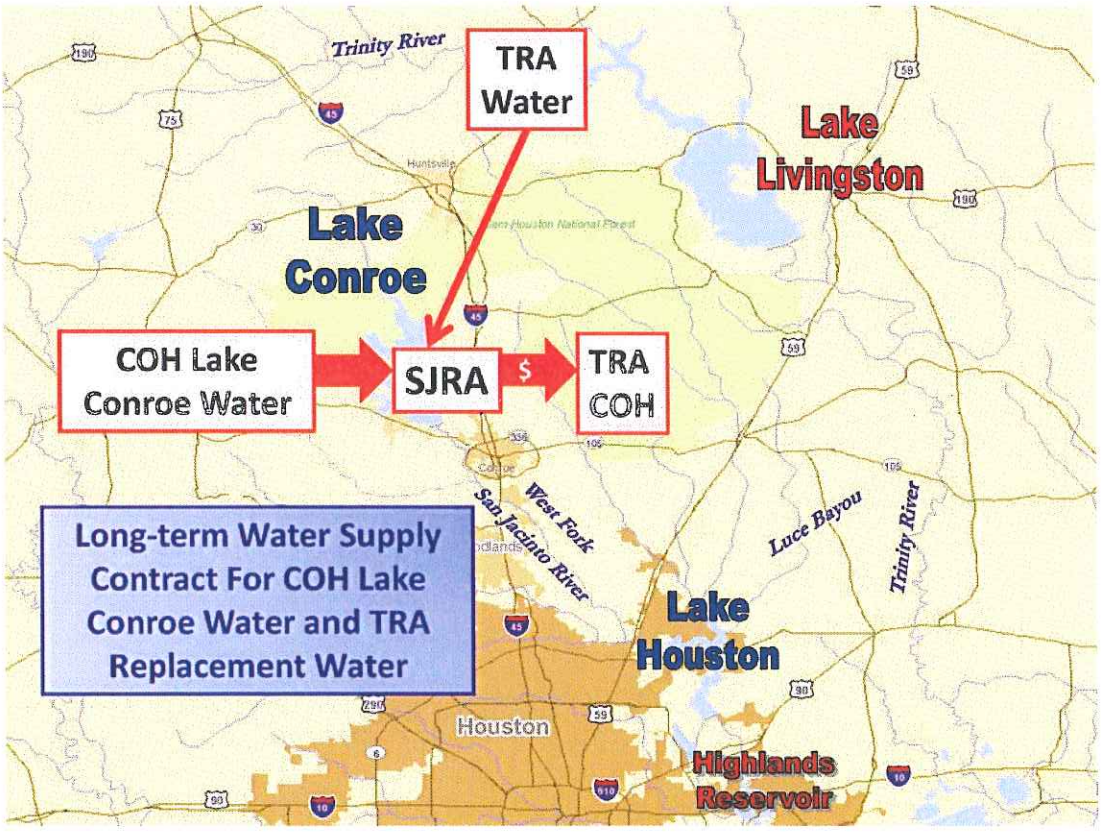

Exhibit 4-8. Long-Term Water Supply Contract for COH Lake Conroe Water and TRA Replacement Water

This alternative offers the same challenges contained with the two previous alternatives in addition to the following. Typically water supply reservoirs are developed for supplying water for municipal, industrial and agricultural needs thus resulting in varying water levels. *Importing water from another river basin solely to reduce the impact on reservoir levels is unusual and does not comply with the current 2007 State Water Plan.*

However, as previously noted, at some point in the future all of the available water in Lake Conroe will be allocated and additional water will be required to meet water demands greater than the aquifer and Lake Conroe can meet. At that time additional surface water will be required and this alternative could be reconsidered to increase the yield of Lake Conroe to meet the larger water demands, but not as "replacement" water to reduce impacts of varying water levels.

4.8 Imported Groundwater from Burleson County

The SJRA has discussed importing groundwater from Burleson County with a private water purveyor. The plan reviewed included importation of groundwater with a potential delivery system from west of Montgomery County generally parallel to Highway 105 to Conroe and generally from Dobbin to the west side of The Woodlands. Discussions included the amount of groundwater available, contract water rates and other requirements. *Due to the projected cost and potential regulatory issues related to exportation of groundwater this alternative was eliminated from further consideration for the WRAP.*

4.9 Bedias Reservoir

The SJRA reviewed the potential to develop additional water supplies at Bedias Reservoir in Madison County. An analysis of the Bedias Reservoir was included in the 2001 Region H Water Plan. *Due to the projected cost, time, property rights, and environmental issues to overcome, this alternative was eliminated from further consideration for the WRAP.*

4.10 SJRA Trinity River Water Rights

The diversion point of SJRA's water rights in the Trinity River is located in Liberty County. The water would be conveyed to Montgomery County via Luce Bayou or another large conveyance system.

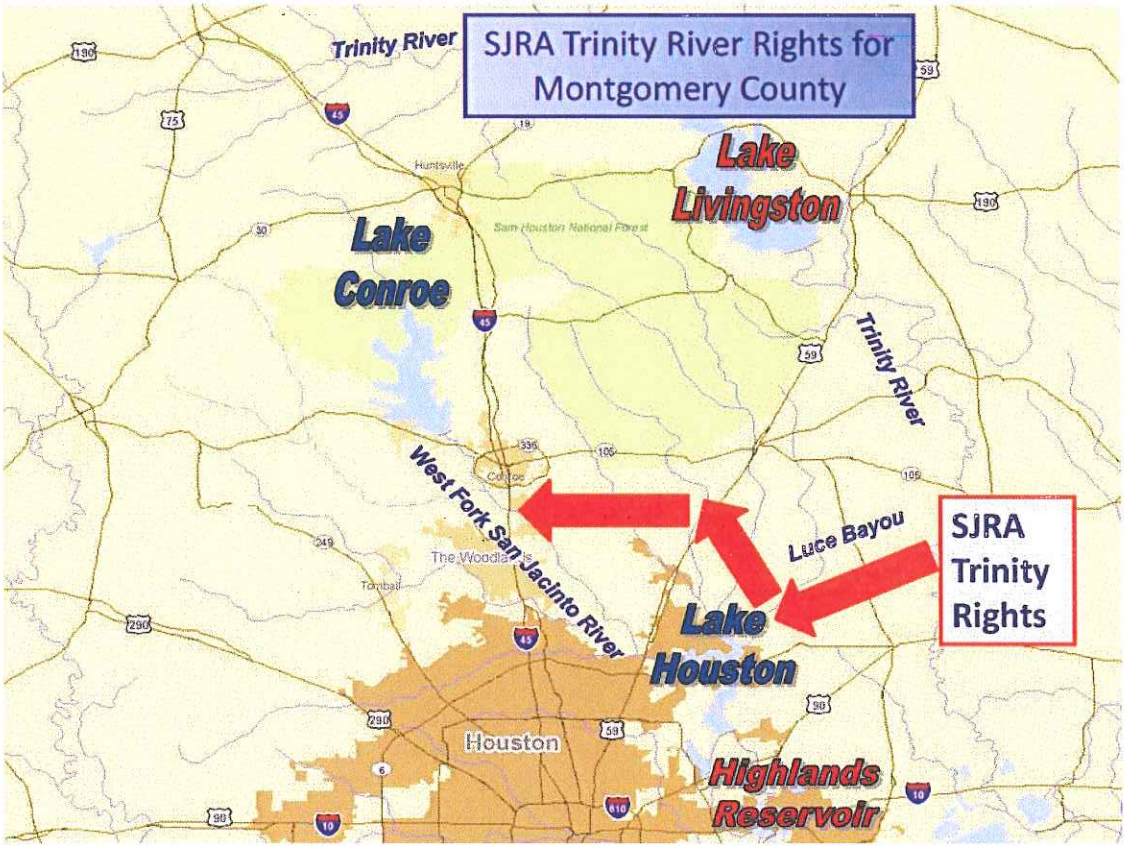

Exhibit 4-9. SJRA Trinity River Water Rights

Section 5 Evaluation of Alternatives

5.1 Comparison of Alternatives Countywide

A quantitative evaluation of water supply alternatives requires the identification of preliminary conveyance, treatment, storage, pumping and transmission system for which costs can be identified. Assumptions are required for the following:

- Diversion locations
- Treatment process and location
- Finished water storage location and size
- Finished water pumping location and size
- Pipeline routes and sizes
- Utility Conflict Resolution
- Surface Disruption Mitigation
- Environmental Mitigation
- Land/Easement Acquisition
- Inflation
- Bond Term and Interest Rate
- Initial $21.5M in Planning Costs via TWDB WIF Differed Funds
- Planning Costs Financing Method

Preliminary infrastructure location used for the purpose of this study was identified as shown in Exhibit 5-1. Many of these assumptions will change as the program develops. Since these preliminary routes were identified over a year ago, numerous issues identified in the WRAP will impact the route locations. Since the routes shown in Exhibit 5-1 were used in the evaluation of all alternatives, any changes to these routes will not impact the ranking/rating of one alternative against another. Various alternatives were analyzed and evaluated in further detail.

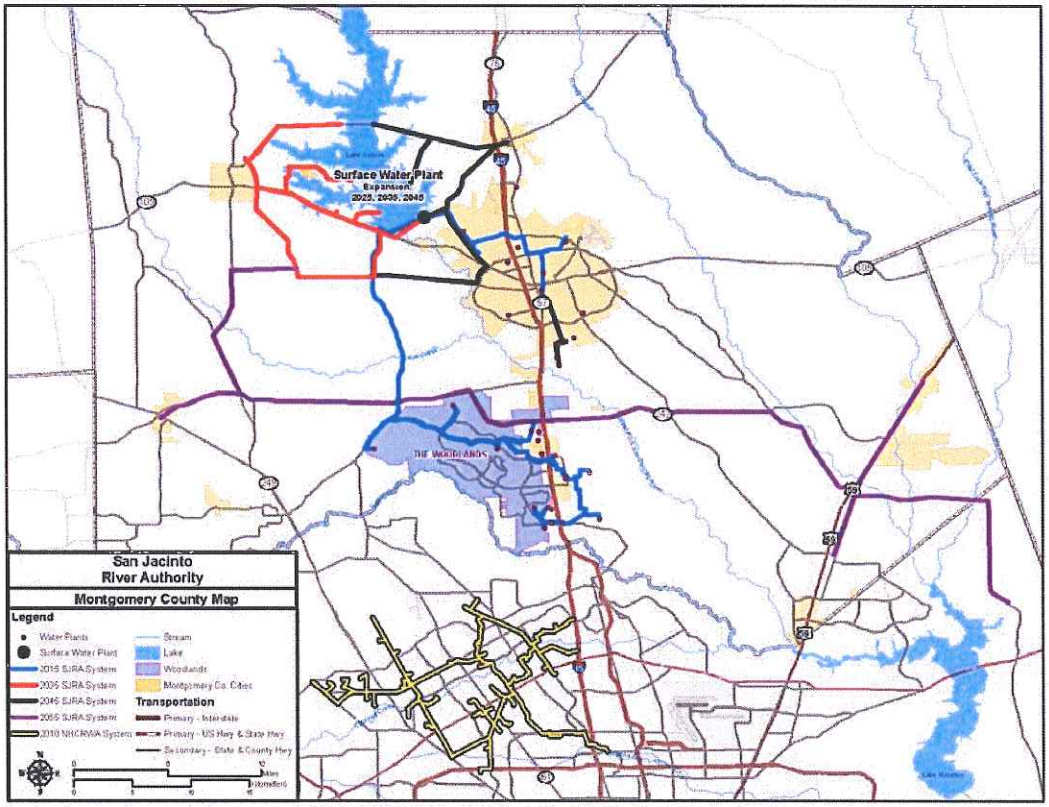

Exhibit 5-1. Preliminary Routes

5.2 SJRA Lake Conroe Water Plus City of Houston Long-Term Water Supply Contract

This alternative includes the following:

- **Prior to 2015** – SJRA executes a long-term raw water supply contract with City of Houston and begins payment of a reservation fee. Initiate and complete planning, environmental permitting, design, land/easement acquisition and construction of raw water intake; surface water treatment plant; and finished water storage, pumping and transmission system.

- **2015** – Divert surface water from Lake Conroe using water rights owned by the SJRA, treat the water at a surface water plant located at Lake Conroe and transmit the treated surface water to the high water demand areas including the City of Conroe and The Woodlands.

- **Prior to each Subsequent Phase** – Initiate and complete planning, environmental permitting, design, land/easement acquisition for required facilities.

- **2025** – Divert surface water from Lake Conroe using remaining water rights owned by the SJRA and begin diversion of City of Houston's water from Lake Conroe, treat the water at the surface water plant located at Lake Conroe and transmit the treated surface water via the transmission system.

- **2035** – Divert surface water from Lake Conroe using water rights owned by the SJRA and City of Houston water, treat the water at the surface water plant located at Lake Conroe and transmit the treated surface water through an expanded transmission system.

- **2045** – Divert surface water from Lake Conroe using water rights owned by the SJRA and City of Houston, treat the water at the surface water plant located at Lake Conroe and transmit the treated surface water through an expanded transmission system.

- **2055** – Utilize system described for 2045 plus divert water from Trinity River in Liberty County using water rights owned by the SJRA; convey raw water to far southeastern Montgomery County; treat the water at a surface water plant located in far southeastern Montgomery County; and transmit the treated surface water through a transmission system to Montgomery County.

5.3 SJRA Lake Conroe Water Plus TRA Long-Term Water Supply Contract

This alternative includes the following:

- **Prior to 2015** – SJRA executes a long-term raw water supply contract with the Trinity River Authority and begins payment of a reservation fee. Initiate and complete planning, environmental permitting, design, land/easement acquisition and construction of raw water intake; surface water treatment plant; and finished water storage, pumping and transmission system.

- **2015** – Divert surface water from Lake Conroe using water rights owned by the SJRA, treat the water at a surface water plant located at Lake Conroe and transmit the treated surface water to the high water demand areas including the City of Conroe and The Woodlands.

- **Prior to 2025** – Initiate and complete planning, environmental permitting, design, land/easement acquisition and construction of: raw water intake in the Trinity River; pump station at the Trinity River north of Huntsville; and a transmission line to the upper end of Lake Conroe as shown in Exhibit 5-2.

- **2025** – Divert surface water from Lake Conroe using remaining water rights owned by the SJRA and begin diversion of Trinity River Authority's water from the Trinity River to Lake Conroe, treat the water at the surface water plant located at Lake Conroe and transmit the treated surface water via the transmission system.

- **Prior to each Subsequent Phase** – Initiate and complete planning, environmental permitting, design, land/easement acquisition for required facilities.

- **2035** – Divert surface water from Lake Conroe using water rights owned by the SJRA and Trinity River Authority's water from the Trinity River to Lake Conroe; treat the water at the surface water plant located at Lake Conroe; and transmit the treated surface water through an expanded transmission system.

- **2045** – Divert surface water from Lake Conroe using water rights owned by the SJRA and Trinity River Authority water in the Trinity River to Lake Conroe, treat the water at the surface water plant located at Lake Conroe and transmit the treated surface water through an expanded transmission system.

- **2055** – Utilize system described for 2045 *plus* divert water from Trinity River in Liberty County using water rights owned by the SJRA; convey raw water to far southeastern Montgomery County; treat the water at a surface water plant located in far southeastern Montgomery County; and transmit the treated surface water through a transmission system to Montgomery County.

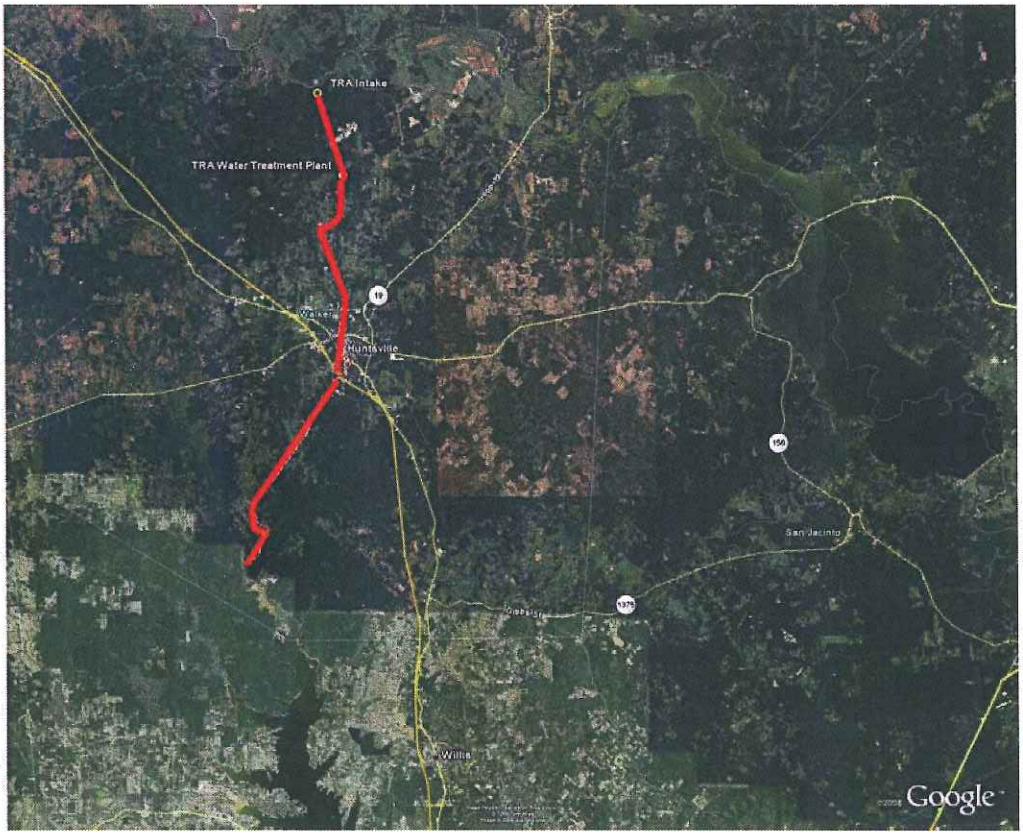

Exhibit 5 – 2. Preliminary TRA Transfer Route

5.4 SJRA Lake Conroe Water Plus City of Houston Long-Term Water Supply Contract and Trinity River Long-Term Replacement Water Supply Contract

This alternative includes the following:

- **Prior to 2015** – SJRA executes a long-term raw water supply contract with City of Houston and begins payment of a reservation fee and executes a long-term raw water supply contract with the Trinity River Authority and begins payment of a reservation fee. Initiate and complete planning, environmental permitting, design, land/easement acquisition and construction of raw water intake; surface water treatment plant; and finished water storage, pumping and transmission system.

- **2015** – Divert surface water from Lake Conroe using water rights owned by the SJRA, treat the water at a surface water plant located at Lake Conroe and transmit the treated surface water to the high water demand areas including the City of Conroe and The Woodlands.

- **Prior to 2025** – Initiate and complete planning, environmental permitting, design, land/easement acquisition and construction of raw water intake in the Trinity River, pump station at the Trinity River north of Huntsville, and transmission line to the upper end of Lake Conroe.

- **2025** – Divert surface water from Lake Conroe using remaining water rights owned by the SJRA and begin diversion of City of Houston's water from Lake Conroe; treat the water at the surface water plant located at Lake Conroe; and transmit the treated surface water via the transmission system. Begin diversion of Trinity River Authority's water from the Trinity River to Lake Conroe to replace water diverted from Lake Conroe to meet the needs of Montgomery County.

- **Prior to each Subsequent Phase** – Initiate and complete planning, environmental permitting, design, land/easement acquisition for required facilities.

- **2035** – Divert surface water from Lake Conroe using water rights owned by the SJRA and City of Houston water in Lake Conroe; treat the water at the surface water plant located at Lake Conroe; and transmit the treated surface water through an expanded transmission system. Divert Trinity River Authority's water from the Trinity River to Lake Conroe to replace water diverted from Lake Conroe to meet the needs of Montgomery County.

- **2045** – Divert surface water from Lake Conroe using water rights owned by the SJRA and City of Houston water in Lake Conroe, treat the water at the surface water plant located at Lake Conroe and transmit the treated surface water through an expanded transmission system. Divert Trinity River Authority's water from the Trinity River to Lake Conroe to replace water diverted from Lake Conroe to meet the needs of Montgomery County.

- **2055** – Utilize system described for 2045 *plus* divert water from Trinity River in Liberty County using water rights owned by the SJRA; convey raw water to far southeastern Montgomery County; treat the water at a surface water plant located in far southeastern Montgomery County; and transmit the treated surface water through a transmission system to Montgomery County.

5.5 Imported Groundwater

This alternative includes the following:

- **Prior to 2015** – SJRA executes a long-term raw water supply contract with purveyor of groundwater and begins payment of a reservation fee. Initiate and complete planning, environmental permitting, design, land/easement acquisition and construction of finished water storage, pumping and transmission system.

- **2015** – Accept delivery of groundwater from purveyor and transmit the treated water to the high water demand areas including the City of Conroe and The Woodlands.

- **Prior to each Subsequent Phase** – Initiate and complete planning, environmental permitting, design, land/easement acquisition for required facilities.

- **2025** – Accept delivery of additional groundwater from purveyor and transmit the treated water via the transmission system.

- **2035** – Accept delivery of additional groundwater from purveyor and transmit the treated water through an expanded transmission system.

- **2045** – Accept delivery of additional groundwater from purveyor and transmit the treated water through an expanded transmission system.

- **2055** – Utilize system described for 2045 *plus* divert water from Trinity River in Liberty County using water rights owned by the SJRA; convey raw water to far southeastern Montgomery County; treat the water at a surface water plant located in far southeastern Montgomery County; and transmit the treated surface water through a transmission system to Montgomery County.

5.6 Cost Analysis

Costs (both future value and 2008 dollars) and present worth value for implementation of the four alternatives evaluated are shown in Table 5-1.

Table 5-1. Implementation Costs

	Current SJRA Conroe Rights (Beginning 2015) + Contract COH Water In Conroe (Beginning 2025)+ SJRA's Trinity River Rights Via Luce Bayou (2055)	Current SJRA Conroe Rights (Beginning 2015) + Contract TRA Water From Trinty U/S of Livingston (Beginning 2025) + SJRA's Trinity River Rights Via Luce Bayou (2055)	Current SJRA Conroe Rights (Beginning 2015) + Contract COH Water In Lake Conroe and TRA Water From Trinty U/S of Livingston (Beginning 2025) + SJRA's Trinity River Rights Via Luce Bayou (2055)	Contract Imported Groundwater (Beginning 2015) + Current SJRA Conroe Rights (Beginning 2045) + SJRA's Trinity River Rights Via Luce Bayou (2055)
	Capital Costs (2008 Dollars)	Capital Costs (2008 Dollars)	Capital Costs (2008 Dollars)	Capital Costs (2008 Dollars)
Phase				
2009-2014 Planning	$100,088,000	$100,088,000	$100,088,000	$80,510,000
2015	$313,002,000	$313,002,000	$313,002,000	$246,547,000
2025	$63,690,900	$321,172,950	$346,192,350	$68,652,150
2035	$252,913,500	$252,913,500	$252,913,500	$269,415,300
2045	$154,747,950	$154,747,950	$154,747,950	$209,321,700
2055	$594,922,650	$594,922,650	$594,922,650	$594,922,650
Total	$1,479,365,000	$1,736,847,050	$1,761,866,450	$1,469,368,800
	Capital Costs (Dollars in Year Constructed)	Capital Costs (Dollars in Year Constructed)	Capital Costs (Dollars in Year Constructed)	Capital Costs (Dollars in Year Constructed)
Phase				
2009-2014 Planning	$110,347,000	$110,347,000	$110,347,000	$88,762,000
2015	$399,479,000	$399,479,000	$399,479,000	$314,664,000
2025	$132,409,000	$667,696,000	$719,709,000	$142,723,000
2035	$856,455,000	$856,455,000	$856,455,000	$912,336,000
2045	$853,592,000	$853,592,000	$853,592,000	$1,154,622,000
2055	$5,345,385,000	$5,345,385,000	$5,345,385,000	$5,345,385,000
	Present Worth Value (2015 thru 2060) (2008 Dollars)	Present Worth Value (2015 thru 2060) (2008 Dollars)	Present Worth Value (2015 thru 2060) (2008 Dollars)	Present Worth Value (2015 thru 2060) (2007 Dollars)
	$2,996,691,827	$3,461,237,563	$3,900,374,038	$5,481,265,502

Unit cost comparisons are shown graphically in Exhibits 5-3 thru 5-6.

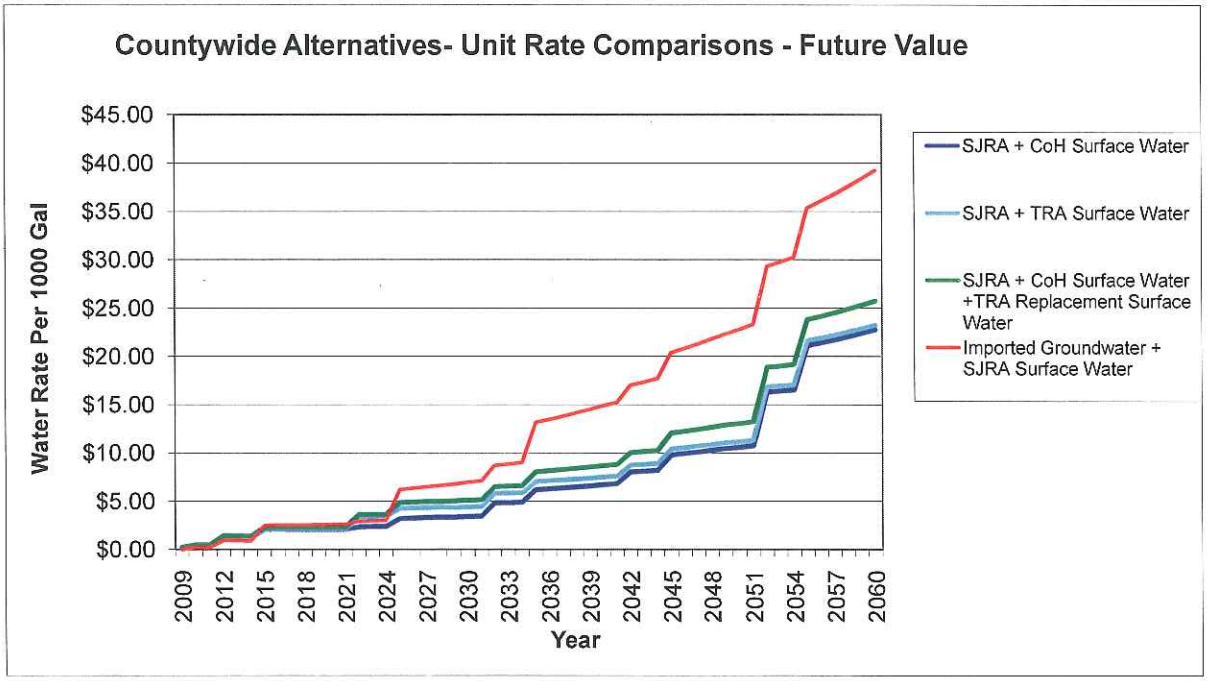

Exhibit 5-3. Comparison of Unit Costs thru 2060 (Future Value)

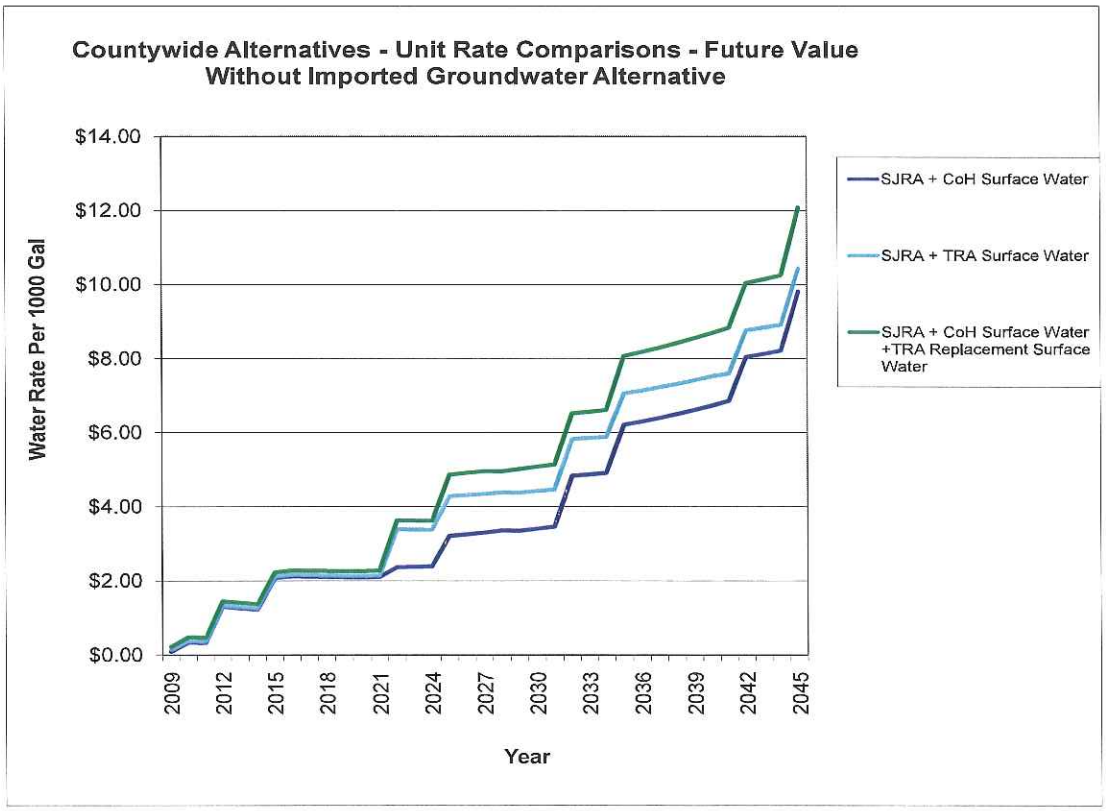

Exhibit 5-4. Comparison of Unit Costs thru 2045 (Future Value)

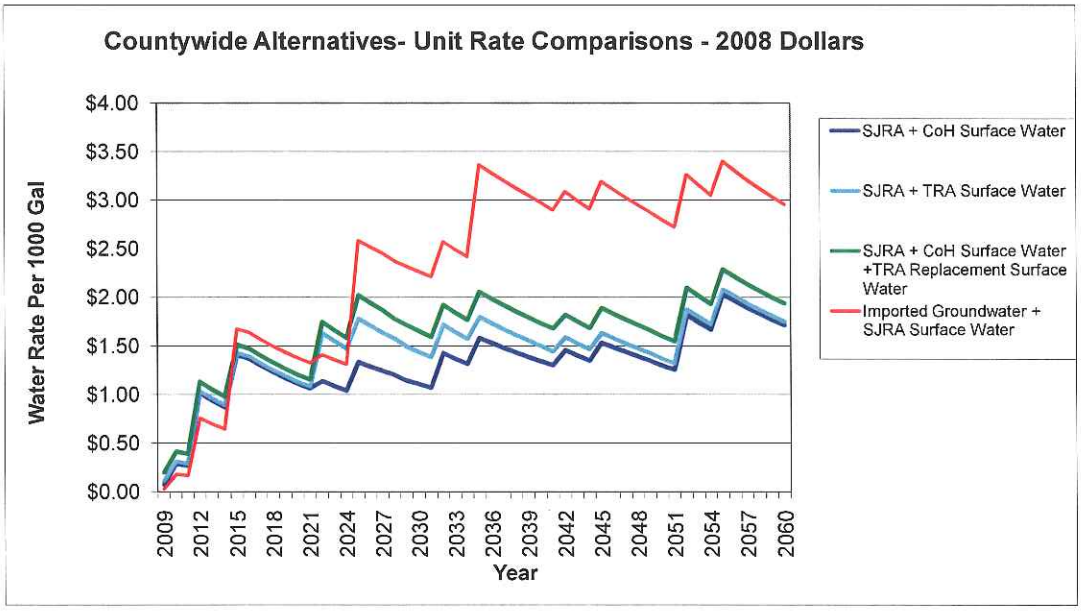

Exhibit 5-5. Comparison of Unit Costs thru 2060 (2008 Dollars)

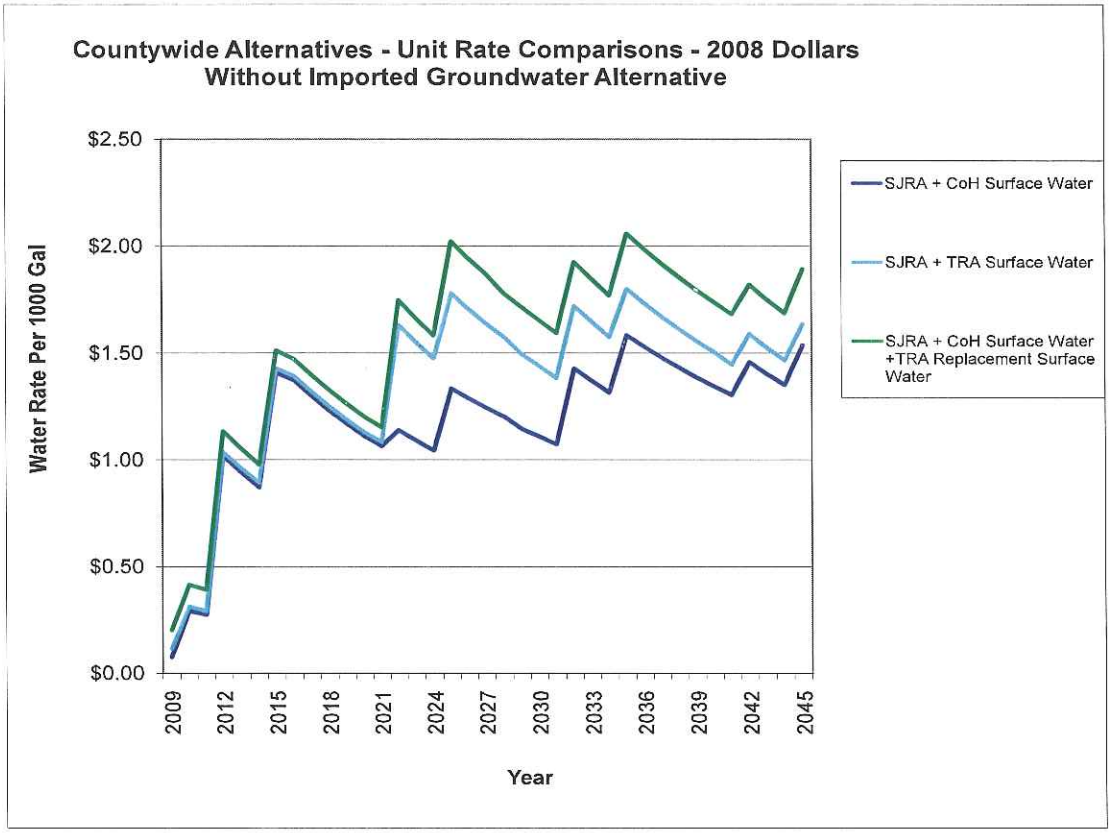

Exhibit 5-6. Comparison of Unit Costs thru 2045 (2008 Dollars)

Section 6 Conclusion and Recommendation

6.1 Conclusion

The most cost-effective source-water supply alternative is the use of SJRA water rights in Lake Conroe plus a long-term water supply contract with the City of Houston for its water in Lake Conroe. While it is anticipated that the final diversion locations and amounts, and infrastructure size and location will vary from the baseline developed in this study, the final conclusion will remain the same.

6.2 Recommendation

It is recommended that all of the permitted yield of Lake Conroe be utilized to supply treated surface water in Montgomery County prior to the conveyance of water from additional sources into the county and that a long-term water supply contract with the City of Houston be executed in a timely manner.

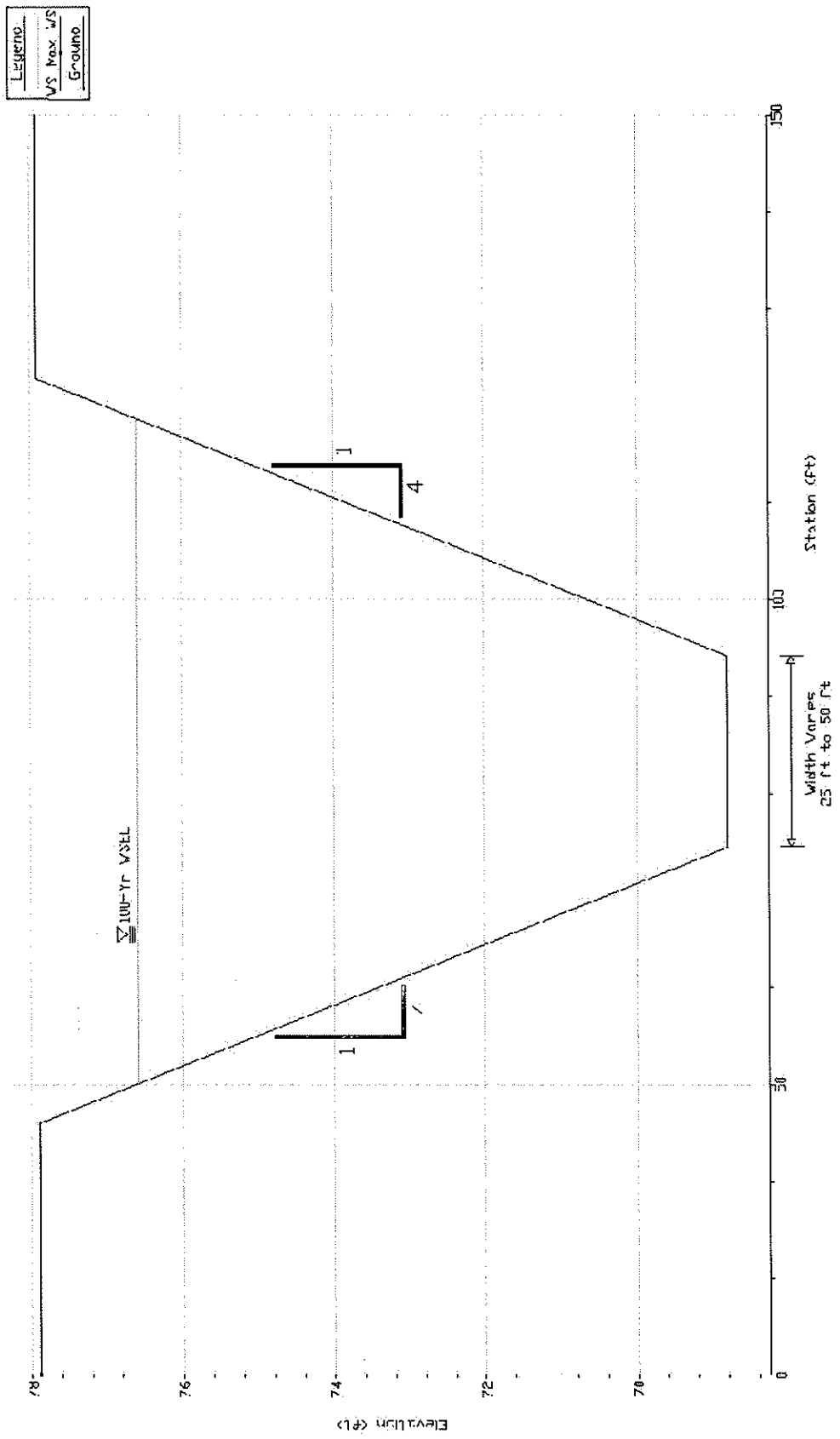

Figure 10 – Typical Diversion Channel Section

Appendix D

Water Supply Contract between the City of Houston and the San Jacinto River Authority

C73555
09-089

WATER SUPPLY CONTRACT
BETWEEN
THE CITY OF HOUSTON AND
THE SAN JACINTO RIVER AUTHORITY

THIS WATER SUPPLY CONTRACT ("Contract") is made and entered into by and between the City of Houston, Texas, a home-rule city which is principally situated and has its City Hall in Harris County, Texas (hereinafter called "Houston"), and the San Jacinto River Authority (hereinafter called "SJRA"), a conservation and reclamation district, body politic and corporate and a governmental agency of the State of Texas created and operating under the provisions of Chapter 426, Acts of the 45th Texas Legislature, Regular Session, 1937, as amended (compiled as Vernon's Annotated Texas Civil Statutes, Article 8280-121), enacted pursuant to the provisions of Section 59 of Article XVI of the Texas Constitution (such series of acts being hereinafter collectively referred to as the "Act").

WITNESSETH:

WHEREAS, Houston has an undivided two-thirds (2/3) interest in the Lake Conroe Dam and Reservoir ("Project") under the Lake Conroe Contract, defined below, executed between Houston and SJRA; and

WHEREAS, SJRA has an undivided one-third (1/3) interest in the Project under the Lake Conroe Contract; and

WHEREAS, the provisions of the Lake Conroe Contract, defined below, and Water Appropriation Permit No. 1962, relative to the respective obligations of Houston and SJRA to pay their proportionate share of the annual costs of maintaining, operating and repairing the Project during its useful life constitute covenants running with the Project lands and remain in effect; and

WHEREAS, water rights held by Houston and SJRA under Water Appropriation Permit No.1962 are recognized under Certificate of Adjudication No. 10-4963 (the "Certificate"); and

WHEREAS, Houston and SJRA are authorized to divert or release and use not to exceed 100,000 acre-feet in the Lake Conroe Reservoir ("Lake Conroe") under the Certificate; and

WHEREAS, SJRA will annually request in writing a certain quantity of Raw Water, defined below, out of Houston's Yield, also defined below, and Houston will sell SJRA such quantity of Raw Water under this Contract; and

WHEREAS, Houston is authorized to enter into this Contract pursuant to its City Charter and applicable general laws of the State of Texas, including Texas Water Code 49.068(b); and

WHEREAS, SJRA is authorized to enter into this Contract pursuant to Section 3 of the Act and Sections 49.068(b) and 49.213 of the Texas Water Code.

NOW, THEREFORE, for and in consideration of the premises and the mutual covenants and agreements herein contained, the parties hereto do hereby mutually agree as follows:

ARTICLE I

Definitions

As used in this Contract, the following terms are intended and used herein and shall be construed to have meanings as follows:

(1) The term "Actual Costs" shall mean Houston's actual share of operations, maintenance and certain other costs associated with Lake Conroe, as such costs are described in Sections 4.03, 4.04, and 4.05 of the Lake Conroe Contract.

(2) The term "Budgeted Costs" shall mean Houston's share of all budgeted costs for Lake Conroe, as such costs are described in Sections 4.03, 4.04, and 4.05 of the Lake Conroe Contract and as approved by Houston in accordance with the Lake Conroe Contract.

(3) The term "Contract Term" is defined in Section 6.1.

(4) The term "Director" shall mean the Director of the Department of Public Works and Engineering of the City of Houston, or any successor department, and all persons designated by the Director, to administer the sale and delivery of Raw Water to SJRA under this Contract.

(5) The term "Effective Date" shall mean the date this Contract is countersigned by the Houston City Controller.

(6) The term "Houston's Yield" shall mean Raw Water contained in Lake Conroe that Houston has the right to use and divert or release under the Lake Conroe Contract and the Certificate.

(7) The term "Lake Conroe Contract" shall mean that certain written Contract between SJRA and Houston, dated May 9, 1968, concerning Lake Conroe, and any subsequent legal rights, written amendments, renewals, continuations, consolidations or restatements of same as may be approved by SJRA and Houston from time to time.

(8) The term "LSGCD" means the Lone Star Groundwater Conservation District.

(9) The term "MGD" is an abbreviation for million gallons of water per day. As used in this Contract, "MGD" refers to a quantity of Raw Water during a period of time expressed for convenience in terms of an average daily quantity during a calendar month (unless a different period of time is specified).

(10) The term "Noticed Quantity" shall mean that quantity of Raw Water out of Houston's Yield that SJRA shall purchase and intends to use in the following calendar year as documented by SJRA's written notice under Section 2.2.

(11) The term "Point of Delivery" shall mean the location at which SJRA takes delivery of Raw Water from Houston under this Contract.

(12) The term "Point of Measurement" shall mean the location of Houston's meter at which Raw Water purchased by SJRA under this Contract is measured.

(13) The term "Purchased Quantity" shall mean the quantity of Raw Water out of Houston's Yield delivered to SJRA under this Contract in any given calendar year.

(14) The term "Raw Water" shall mean untreated surface water.

(15) The term "Raw Water Rate" shall mean the price per gallon fee assessed by Houston for Raw Water delivery as adopted and amended by Houston City Council and codified in the City of Houston Code of Ordinances.

(16) The term "Reservation Fee" is defined in Section 2.3 below.

(17) The term "Reserved Quantity" shall mean the entire quantity of Houston's Yield remaining after the Noticed Quantity is deducted from Houston's Yield for any given calendar year.

(18) The term "SJRA Diversion Point" shall mean a location from which SJRA or any authorized SJRA customer withdraws Raw Water from Lake Conroe other than at the Point of Delivery.

(19) The term "SJRA's Yield" shall mean Raw Water contained in Lake Conroe that SJRA has a right to use and divert or release under the Lake Conroe Contract and the Certificate. SJRA's Yield excludes any Raw Water that was originally part of Houston's Yield.

(20) The term "TCEQ" shall mean the Texas Commission on Environmental Quality and its successor(s).

(21) The term "Yield" shall mean the total of Houston's Yield and SJRA's Yield.

ARTICLE II

Sale and Delivery of Water

2.1 During the Contract Term, Houston shall sell SJRA and SJRA shall pay Houston for the Noticed Quantity, on an annual basis, subject to the terms and provisions of this Contract. SJRA shall additionally pay Houston for the Reserved Quantity on an annual basis, subject to the terms and provisions of this Contract to ensure that SJRA shall have an option to purchase a portion of Raw Water out of the Reserved Quantity during each calendar year of the Contract Term.

2.2 On or before November 1st of each whole or partial calendar year during the Contract Term, SJRA shall provide Houston a written statement of the Noticed Quantity and Reserved Quantity for the following calendar year. SJRA's written declaration of the Noticed Quantity and Reserved Quantity shall be subject to the following conditions:

(a) The Noticed Quantity shall be at least 33% of Houston's Yield by calendar year 2025 and each calendar year thereafter.

(b) SJRA agrees that Purchased Quantity shall be equal to or exceed the Noticed Quantity or SJRA shall pay Houston the difference between (i) the Noticed Quantity and (ii) the Purchased Quantity. This subsection shall prevail over any other provision concerning payment in this Contract.

(c) Houston may sell or otherwise commit for use all or any portion of the Reserved Quantity during the calendar year for which SJRA has provided the above notice; provided, however, that absent the written consent of SJRA, Houston agrees not to sell, commit or otherwise provide all or any portion of the Reserved Quantity (i) to a person or entity (other than Houston) subject to a groundwater reduction mandate imposed by the LSGCD, or (ii) to a person or entity for a period extending beyond the calendar year for which SJRA has provided the above statement of Noticed Quantity.

(d) SJRA may purchase all or a portion of the Reserved Quantity during the calendar year for which SJRA has provided the above statement of Noticed Quantity under the same terms and conditions outlined in this Contract, provided that same has not been previously sold or otherwise committed for use by Houston during such calendar year.

2.3 On or before February 1st of each whole or partial calendar year during the Contract Term, SJRA shall pay Houston a reservation fee for such calendar year ("Reservation Fee"). However, Houston shall waive the Reservation Fee during any calendar year in which the Noticed Quantity is at least 75% of Houston's Yield. The Reservation Fee will be equal to an amount calculated as follows:

$$Reservation\ Fee = 50\% \times Budgeted\ Costs \times \left(\frac{Reserved\ Quantity}{Houston's\ Yield} \right)$$

2.4 On or before February 1st of each calendar year during the Contract Term, the parties shall make a true-up of accounts, taking into consideration the Reservation Fee paid by SJRA and the Purchased Quantity for the prior calendar year, as well as the Actual Costs. The amount owed by SJRA to Houston ("Debit"), or by Houston to SJRA ("Credit"), will be equal to an amount calculated follows:

$$Debit\ or\ Credit = Reservation\ Fee - \left[50\% \times Actual\ Costs \times \left(\frac{Houston's\ Yield - Purchased\ Quantity}{Houston's\ Yield} \right) \right]$$

(a) Should the Reservation Fee be waived under Section 2.3 and the Purchased Quantity not exceed 75% of Houston's Yield, SJRA shall pay a Reservation Fee, in arrears, calculated as follows:

$$Reservation\ Fee_{arrears} = 50\% \times Actual\ Costs \times \left(\frac{Houston's\ Yield - Purchased\ Quantity}{Houston's\ Yield} \right)$$

(b) After 2025, if the Purchased Quantity ends up being less than 33% of Houston's Yield, the Purchased Quantity shall be assumed to equal 33% during the annual true-up of accounts, and in addition to any Credit or Debit calculated pursuant to the above, SJRA shall pay Houston an additional amount so that the Purchased Quantity equals 33% of Houston's Yield.

2.5 With respect to the Purchased Quantity and Raw Water (if any) deemed to have been purchased pursuant to this Contract, SJRA shall pay Houston's prevailing Raw Water Rate in accordance with Section 47-87 of the City of Houston Code of Ordinances or any successor ordinance.

2.6 The Director shall approve Points of Delivery and Points of Measurement prior any diversion of Houston's Yield.

ARTICLE III

Measuring Equipment

3.1 At SJRA's sole cost and expense, SJRA shall furnish and install, at the Point of Measurement, measuring equipment properly equipped with meters, totalizers, lines and devices for

electricity and telephony, transmission devices, and recording devices of a type specified by the Director for measuring and recording the quantity of Raw Water delivered through the Point of Delivery in accordance with Section 3.4. SJRA shall have no other responsibility for furnishing or installing any other infrastructure, such as repeater stations or towers, that may be necessary for Houston to receive a signal from transmission devices at the Point of Measurement. Houston shall own the measuring equipment in fee upon written approval of installation by the Director.

3.2 During all reasonable hours and subject to reasonable safety and security requirements of SJRA, Houston and SJRA and shall have access to the measuring equipment after providing notice to the other Party. SJRA may have access to all records pertinent to determining the measurement and quantity of Raw Water actually delivered through the Point of Delivery, but the reading of the measuring equipment for purposes of billing shall be done by Houston on a monthly basis.

3.3 Houston shall maintain the measuring equipment within the accuracy tolerance specified in Section 3.4 by periodic tests. Houston shall conduct accuracy tolerance tests at least once every 12 months and shall notify SJRA at least 48 hours in advance of the time and location at which tests are to be made. If SJRA requests an additional test within 12 months, Houston shall charge SJRA an amount equal to Houston's cost to perform such test unless the test reveals that the equipment registers more than 102% for a given flow rate. In addition, SJRA shall have the right to independently check, at its own cost, said measuring equipment at any time upon 48 hours notification to the Director, who shall have the opportunity to witness such tests. If SJRA adjusts the measuring equipment, SJRA shall pay for any tests, repairs, or corrections to the measuring equipment deemed necessary by the Director. Houston, at the Director's sole discretion, may ratify or provide written prior approval for certain adjustments to the measuring equipment by SJRA.

3.4 Should a test of the measuring equipment in question show that the equipment registers either more than 102% or less than 95% of the Raw Water delivered for a given flow rate, the total quantity of Raw Water delivered to SJRA will be deemed to be the average daily consumption, as measured by the measuring equipment when in working order, and the meter shall be calibrated to Houston standards manufacturer's specifications for meters then in use or to the American Water Works Association ("AWWA") specifications (for all other types of meters) for the given rate of flow, or shall be replaced or repaired by Houston at Houston's cost with accurate measuring equipment that is tested before it is placed in service. This adjustment shall be for a period extending back to the time when the inaccuracy began, if such time is ascertainable; and if such time is not ascertainable, (i) the adjustment shall be based on readings from SJRA check meters, if installed pursuant to Section 3.6, and if operating within the tolerances described above, for a period extending back to the last test of the measuring equipment, or (ii) the adjustment shall be based on average daily consumption, as described above, for a period extending back to the last test of the measuring equipment or 120 days, whichever is shorter, in the event that SJRA has not installed check meters or if such check meters are not operating within the tolerances described above.

As used in this paragraph, the expression "given rate of flow" means one of the following flow rates. The Director shall choose the "given rate of flow" based on the particular meter installation and consumption for each calibration or test:

(a) the total quantity of Raw Water delivered during the preceding period (usually a calendar month), as reflected by the totalizer, converted to gallons per minute;

(b) high, low and intermediate rates of flow in the flow range, as reflected by the flow recording devices;

(c) manufacturer's specified test flow rates for the size and type of meter.

3.5 SJRA and Houston may settle disputes over the accuracy of the metering equipment by employing an independent company suitable to both SJRA and the Director. The cost of such test will be at SJRA's sole expense. The Director may accept the test results of the independent measuring equipment company, but is not required to do so unless the refusal to accept such results would be arbitrary and capricious.

3.6 SJRA may install, at its own cost and expense, such check meters in SJRA's Raw Water piping as may be deemed appropriate, and subject to reasonable safety and security requirements of SJRA, Houston shall have the right of ingress and egress to such check meters during all reasonable hours; provided, however, that billing computations shall be on the basis of the results of the measuring equipment described in Sections 3.1 through 3.5 above unless such measuring equipment is not operating within required tolerances. SJRA shall perform annual tests, at its own cost and expense, of any metering equipment that it may install under this Section to ensure that such equipment conforms to the "given rate of flow" requirements described in Section 3.4.

3.7 As of January 1 of each calendar year during the Contract Term, any Raw Water passing through the Point of Measurement shall be considered part of the Purchased Quantity for such year until the cumulative amount of the Purchased Quantity for such year equals the Noticed Quantity for such year. After the cumulative amount of Raw Water passing through the Point of Measurement equals the Noticed Quantity for that calendar year, all Raw Water passing though the Point of Measurement shall be considered to be supplied out of SJRA's Yield. At the Director's sole discretion, SJRA may purchase additional Raw Water for use out of the Reserved Quantity after SJRA begins using SJRA's Yield pursuant to Section 2.2(d).

3.8 All Raw Water diverted through an SJRA Diversion Point shall be considered to be supplied by SJRA out of SJRA's Yield and shall be accounted for as provided in the Lake Conroe Contract. In the event of a dispute between the SJRA and Houston over the amount of Raw Water withdrawn from SJRA Diversion Points, SJRA shall have the burden of production and the burden of proof to show the amount of Raw Water withdrawn.

ARTICLE IV

Title to and Responsibility for Water

4.1 Only as between the parties, Houston shall be in exclusive control and possession of, and solely responsible for, all Raw Water deliverable hereunder and solely responsible for any damage or injury caused thereby until the same shall pass through the Point of Delivery, and thereafter, SJRA shall be in exclusive control and possession thereof and solely responsible for any injury or damage caused thereby.

4.2 HOUSTON MAKES NO WARRANTY, EXPRESS OR IMPLIED, REGARDING THE QUALITY OF RAW WATER TO BE DELIVERED UNDER THIS CONTRACT, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SJRA HEREBY RELEASES AND DISCHARGES HOUSTON FROM ANY AND ALL FINES, DEMANDS, JUDGEMENTS, LIABILITIES OR CLAIMS ARISING BY REASON OF OR IN CONNECTION WITH THE QUALITY OR DELIVERY OF RAW WATER UNDER THIS CONTRACT.

4.3 With respect to all Raw Water handling facilities (if any) located between the Point of Delivery and Point of Measurement, SJRA and Houston specifically agree:

(a) that all such facilities, other than the measurement equipment itself, shall be and remain the property of SJRA, subject to the terms of this Contract;

(b) that SJRA shall take all reasonable steps to maintain such facilities and to prevent leaks or discharges from such facilities;

(c) that SJRA shall repair any such leak or discharge at once upon receiving notice thereof and shall pay Houston the cost of any Raw Water lost by reason of such a leak or discharge; and

(d) that SJRA shall correct or repair any damage caused by any such leak or discharge and shall hold Houston harmless from and against any such damage and claims therefor.

4.4 SJRA SHALL DEFEND, HOLD HARMLESS AND INDEMNIFY HOUSTON AGAINST ANY THIRD-PARTY CLAIMS ARISING OUT OF SJRA'S NEGLIGENT, INTENTIONAL, OR STRICTLY LIABLE ACTS OR OMISSIONS ARISING OUT OF ITS PERFORMANCE UNDER THIS CONTRACT, EVEN IF IT IS IMMUNE BY VIRTUE OF APPLICABLE WORKERS COMPENSATION LAWS.

ARTICLE V

Reuse

5.1 Houston agrees to a one-time reuse by SJRA of treated wastewater effluent originating as Raw Water from Lake Conroe sold to SJRA under this Contract and discharged at wastewater treatment facilities owned and operated by (i) the SJRA, or (ii) any person or entity participating in SJRA's groundwater reduction plan or similar program implemented by SJRA to facilitate compliance with LSGCD'S groundwater reduction mandates; provided, however, that:

(a) SJRA provides Houston with written notice of such intended reuse prior to the filing of any necessary applications with the TCEQ, or any successor agency; and

(b) Such reuse is subject to Houston's reasonable determination that SJRA's proposed reuse will have no material and adverse effect, directly or indirectly, on Houston's water rights, its ability to obtain water rights, or Houston's obligations to dedicate and maintain flows as may be required by regulatory agencies to meet environmental or other regulatory requirements (e.g., environmental flow provisions in Senate Bill 3, enacted by the 80th Texas Legislature, R.S., 2007).

5.2 The parties agree to file joint application(s) with TCEQ regarding the reuse of treated wastewater effluent originating as Raw Water out of Houston's Yield sold to SJRA under this Contract to achieve SJRA's "one-time reuse" of such effluent consistent with subsection 5.1 above and, thereafter, to retain control of all such treated wastewater effluent in order to allow the parties to use the same for other mutually acceptable beneficial purposes, including, but not limited to, the protection of fresh water inflows into bays and estuaries downstream. If reasonably deemed necessary or expedient by SJRA and Houston, such application(s) may additionally include SJRA claims for reuse rights to treated wastewater effluent originating as Raw Water out of SJRA's Yield. The parties agree that further details regarding the preparation of such joint application(s) and the sharing of the costs therefor, the scope of the joint application(s) and intended beneficial uses of said effluent, and the obligations of the parties with respect to administering any permit(s) and sharing the costs therefor, shall be the subject of a supplemental written agreement.

ARTICLE VI

Term

6.1 The term of this Contract (the "Contract Term") shall be for 80 years from the Effective Date.

6.2 If SJRA desires to negotiate a new water supply contract for Houston's Yield ("New Contract"), then prior to noon on the day 70 years from the Effective Date, SJRA may provide Houston irrevocable, written notice of its desire to enter into a New Contract. Within one year of receiving such notice, Houston shall begin good-faith negotiations with SJRA for a New Contract.

This Contract shall continue until the end of the Contract Term or until the parties enter into a New Contract, whichever is sooner.

ARTICLE VII

Environmental Considerations

7.1 On or before the first anniversary of the effective date of this Contract, SJRA shall approve and implement, and throughout the term hereof shall remain in full compliance with, a water conservation plan in accordance with the requirements of the TCEQ. Such plan (and any amendments thereto) shall be submitted to the appropriate authority as required by state law, for review and approval. In the event that the TCEQ adopts new requirements, SJRA shall adopt an amended plan and submit same to the appropriate authority for review and approval.

7.2 SJRA agrees that in the event that SJRA furnishes or sells water to a third party, the requirements of this Contract relative to a water conservation plan shall be met through contractual agreements between the SJRA and the third party or shall be contained in rules of SJRA enacted pursuant to legislative authority providing for the implementation and continued compliance with a water conservation plan consistent with the requirements of the TCEQ.

ARTICLE VIII

Remedies Upon Default

8.1 In addition to other remedies available at law or equity, in the event of a monetary default by SJRA hereunder, including nonpayment on a timely basis of any amount due hereunder, which default shall continue for a period of thirty (30) days or more, then Houston shall give written notice to SJRA of such default and request that such default be remedied with all reasonable dispatch. In the event SJRA, within forty-five (45) days after the receipt of such notice, has failed to remedy such default in full, Houston may suspend delivery of Raw Water to SJRA hereunder, and in the event such default shall continue for an additional thirty (30) days after suspension of Raw Water delivery hereunder, Houston may, by additional written notice to SJRA, cancel and terminate this Contract, whereupon all rights of SJRA and all obligations of Houston hereunder shall terminate and be at an end.

8.2 In addition to the other remedies available at law or equity, in the event of a non-monetary default by SJRA hereunder, which default shall continue for a period of thirty (30) days or more, then Houston shall give notice to SJRA specifying the matter with respect to which SJRA is in default and requesting that the default be remedied with promptness and dispatch. In the event SJRA, within forty-five (45) days after receipt of such notice, has failed to remedy the matter in default, Houston may suspend further delivery of Raw Water to SJRA hereunder, unless (i) the Director reasonably determines that SJRA has begun within seventy-five (75) days of receipt of such notice and continues without cessation substantial good faith efforts to cure the matter in default, or

(ii) SJRA, within such forty-five day time period, shall have disputed such claimed default by written notice to Houston and shall have initiated in good faith proceedings for resolution of such dispute, including proceedings for arbitration, administrative appeal, declaratory judgment or similar judicial review, and in either case, suspension of delivery of Raw Water to SJRA hereunder and/or termination of this Contract shall not be available until such dispute resolution proceedings have been finally resolved in favor of Houston and are no longer subject to appeal by SJRA.

8.3 In the event of any default by Houston in the performance of any of Houston's obligations hereunder which shall continue for a period of thirty (30) days or more, then SJRA shall give written notice to Houston specifying the matter with respect to which Houston is in default and requesting that the default be remedied with promptness and dispatch.

8.4 The failure of either party to insist in any one or more instances upon performance of any of the terms, covenants or conditions of this Contract shall not be construed as a waiver or relinquishment of the future performance of any such term, covenant or condition by the other party hereto, but the obligation of such party with respect to future performance shall continue in full force and effect.

ARTICLE IX

Force Majeure

9.1 In the event either party is rendered unable, wholly or in part, by force majeure, to carry out any of its obligations under this Contract, or in the event SJRA is rendered unable, wholly or in part, by force majeure to operate SJRA's facilities to take or utilize Raw Water available for delivery hereunder, it is agreed that on such party's giving notice and full particulars of such force majeure to the other party as soon as practicable after occurrence of the cause relied upon, then the obligations of the party giving such notice, to the extent they are affected by force majeure and to the extent that due diligence is being used to resume performance at the earliest practicable time, shall be suspended during the continuance of any inability so caused as to the extent provided, but for no longer period. Such cause shall as far as possible be remedied with all reasonable dispatch.

9.2 The term "force majeure", as used herein, shall include, but not be limited to, acts of God, strikes, lockouts or other industrial disturbances, acts of the public enemy, war, blockades, insurrections, riots, epidemics, landslides, siltation, lightning, earthquakes, fires, storms, floods, washouts, droughts, tornadoes, hurricanes, arrests and restraints of government and people, governmental, regulatory, judicial or administrative restraint or order, acts of upstream appropriators, sabotage, terrorism, explosions, breakage or damage to machinery, equipment pipelines or canals and any other inabilities of either party, whether similar to those enumerated or otherwise and not within the control of the party claiming such inability, which by the exercise of due diligence and care such party could not have avoided.

9.3 It is understood and agreed that the settlement of strikes or lockouts shall be entirely within the discretion of the party having the difficulty and the above requirement that any force majeure be remedied with all reasonable dispatch shall not require the settlement of strikes or lockouts by acceding to the demands of the opposing party when such course is inadvisable in the discretion of the party having the difficulty.

9.4 Houston cannot and does not guarantee constant availability of Raw Water hereunder but does agree to use its best efforts to maintain such availability. In the event of a Raw Water shortage, Houston may reduce the supply of Raw Water to be delivered under this Contract only in accordance with the laws of the State of Texas, particularly Chapter 11 of the Texas Water Code, as amended. It is further agreed that the Houston may, without liability or default, interrupt its service hereunder to make necessary alterations to or repairs in its facilities, but only if such interruption cannot otherwise reasonably be avoided. The Houston shall give reasonable prior notice of any such interruption to SJRA and, to the extent possible, the Houston shall schedule interruptions in advance after consultation with SJRA.

ARTICLE X

Addresses and Notices

10.1 Until SJRA is otherwise notified in writing by Houston, the address of Houston for both notice and payments is and shall remain as follows:

City of Houston Utility Customer Service Division
Contract Water Accounting Section
4200 Leeland
Houston, Texas 77023
Phone: 713-371-1326
Telefax: 713-371-1327
E-mail: ucslegalnotices@cityofhouston.net

Until Houston is otherwise notified in writing by SJRA, the address of SJRA is and shall remain as follows:

General Manager
San Jacinto River Authority
1577 Dam Site Road
Conroe, Texas 77304
Telefax: (936) 588-3043
E-mail: legalnotices@sjra.net

10.2 All written notices required or permitted to be given under this Contract from one party to the other, except for billing and invoices from Houston, shall be given (i) by telefax or electronic mail to the other party at the telefax number or electronic mail address set forth

above, with a hard copy of same mailed within forty-eight (48) hours by certified mail (return receipt requested), with proper postage affixed thereto and addressed to the other party at the address set forth above or at such other address as the other party may designate by written notice, or (ii) by the mailing of same by certified mail (return receipt requested) with proper postage affixed thereto and addressed to the other party at the address set forth above or at such other address as the other party may designate by written notice. Notice by telefax or electronic mail shall be effective upon actual receipt, but not later than the date of actual delivery of same by registered mail, as reflected on the corresponding return receipt. Notice by certified mail shall be effective when actually received, as reflected on the corresponding return receipt. Section 47-87 of the City of Houston Code of Ordinances shall control notices concerning billing and invoices from Houston.

ARTICLE XII

Miscellaneous Provisions

11.1 This Contract shall bind and benefit the parties and their legal successors, shall not otherwise be assignable, in whole or in part, by SJRA without first obtaining the written consent of the Director, which consent shall not be unreasonably withheld with respect to a financially responsible, government-entity assignee of SJRA. Such consent shall be signed by both the Director and the assignee, who shall agree in writing to be bound by the requirements of the Contract. Assignment under this Section shall not relieve SJRA of liability incurred by SJRA under this Contract prior to assignment.

11.2 This Contract shall be for the sole and exclusive benefit of SJRA and its permitted assignees and Houston, and shall not be construed to confer any rights upon any third party. Houston shall never be subject to any liability in damages to any customer of SJRA for any failure to perform under this Contract.

11.3 This Contract shall be subject to all present and future valid laws, orders, rules and regulations of the United States of America, the State of Texas and of any regulatory body having jurisdiction.

11.4 This instrument contains all the agreements made between the parties concerning the sale and delivery of Raw Water by the Houston to SJRA at the Point of Delivery set out in this Contract.

11.5 The parties agree and acknowledge that it is the intent of SJRA to purchase and/or reserve the maximum quantity of the Yield of Lake Conroe available to Houston under the Certificate for SJRA's various purposes, and therefore Houston agrees to continue to pursue the amendment to the Certificate pending before the TCEQ, which amendment is intended to permit all of the Yield to be withdrawn for municipal or mixed uses, in addition to any other authorized uses. Houston further agrees that it will not seek an amendment to the Certificate during the Contract

Term which would result in a decrease in either the annual diversion quantity or the daily diversion rate currently authorized under the Certificate without the express written consent of SJRA.

11.6 Harris County is the exclusive and proper venue for all claims arising under this Contract.

11.7 The parties agree and acknowledge that with respect to calendar year 2009, the provisions of Article II shall be superseded as provided in this section. For calendar year 2009, the Noticed Quantity shall be zero (0) acre-feet, and the Reservation Fee shall be calculated accordingly; provided, however, the amount so calculated shall then be multiplied by the result of dividing the number of remaining calendar days in 2009 on and inclusive of the Effective Date by 365. Such pro-rated Reservation Fee for calendar year 2009 shall be due within 90 calendar days following the Effective Date and shall be considered the full amount due and payable for the 2009 Reservation Fee in conducting the true-up of accounts in 2010 under Section 2.4. With respect to calendar year 2010 and any calendar year thereafter during the Contract Term, the provisions of Article II shall control.

[SIGNATURES COMMENCE ON THE FOLLOWING PAGE]

IN WITNESS WHEREOF, the parties hereto to have signed this Contract in multiple copies, each of which shall be deemed to be an original, but all of which shall constitute but one and the same contract, as of the date of countersignature.

ATTEST/SEAL:

By: _____
Name: Lloyd B. Tisdale
Title: Secretary, Board of Directors

[SEAL]

SAN JACINTO RIVER AUTHORITY ("SJRA")

By: _____
Name: R. Gary Montgomery
Title: President, Board of Directors
Date: 9-24-2009

ATTEST/SEAL:

_____
City Secretary

CITY OF HOUSTON, TEXAS ("Houston")

By: _____ Amanda Wilson
Mayor of the City of Houston
Date:

APPROVED AS TO FORM:

_____
Assistant City Attorney
L.D. File No. 0800900082001

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APPROVED:

_____ 10/20/09
Director, Department of Public Works & Engineering

DATE OF COUNTERSIGNATURE:

10-16-09

Appendix E

Draft Water Reuse Policy

DRAFT POLICY REGARDING WATER REUSE

Policy Objective

The primary objective of all policies is to support the Groundwater Reduction Plan (SJRA GRP) Program and to benefit all SJRA GRP Participants. The objective of this water reuse policy is to encourage the ongoing use of reclaimed wastewater by the SJRA GRP Participants for the purpose of reducing irrigation and amenity lake maintenance and other applicable demands which have historically been provided by the potable water system or by groundwater wells. Water reuse will not impact the infrastructure required to meet the 2016 conversion. However, water reuse may have a significant future impact by delaying the need for future infrastructure and ultimately delaying the need for additional water supply sources.

Introduction

Reuse may be defined as the beneficial use of treated wastewater effluent for non-potable purposes. Reuse of treated municipal wastewater effluent is becoming an increasingly important source of water. Reuse will play an important role in meeting future water supply requirements for the SJRA GRP Program. Some benefits of reuse of treated wastewater effluent include:

1. Reducing the total potable water demand.

2. Reducing demand on water resources.

3. Trace nutrients in treated wastewater effluent (primarily phosphorus and nitrogen) can be beneficial for some plant growth.

4. Use of treated effluent for irrigation makes efficient use of a valuable commodity instead of discharging it to a receiving stream.

The two types of reuse are direct reuse and indirect reuse. Direct reuse occurs when treated wastewater is delivered from a wastewater treatment plant directly to a water user prior to discharge into a stream segment. Several potential applications where direct reuse could be used in lieu of other water supplies include:

- Golf course irrigation
- Green space irrigation (esplanades, green belts, and parks)
- Water to maintain levels in amenity lakes
- Sports / athletic field irrigation

Indirect reuse occurs when treated wastewater effluent is discharged to a stream or reservoir and is diverted downstream for reuse. Indirect reuse can provide water supplies for municipal use as

well as irrigation and industrial supplies. However, once discharged into a stream segment or reservoir, it becomes the property of the State of Texas. Additional water rights permits are required for indirect reuse.

The Groundwater Reduction Plan, March 2011 (Joint SJRA GRP) identified potential sources of reclaimed wastewater and identified potential users with the recommendation for additional analysis before specific projects are incorporated in future groundwater reduction plans. The greatest obstacle to implementing a reuse project is the cost of the project relative to the cost of existing water supplies. As the cost of compliance with existing regulations increases, the incentives for reuse increase. Any water reuse project developed by the SJRA for the SJRA GRP Program or any project developed by a SJRA GRP Participant will be evaluated on a case by case basis. This evaluation will consider at a minimum the cost effectiveness, the benefits to the SJRA GRP Program and the SJRA GRP Participants, and the long term feasibility and sustainability. The project proposer shall have an evaluation of the request prepared by a licensed Professional Engineer registered in the State of Texas and submitted to the SJRA for consideration.

Policy Elements

1. Evaluate all reuse projects on a case by case basis to determine benefits, feasibility, cost effectiveness and sustainability as discussed above. This will include the matter of SJRA GRP Participant importing/exporting reclaimed water from/to a non-SJRA GRP participant.

2. Implement an incentive program to owners of groundwater wells for which production of those wells is reduced by reuse of wastewater effluent. The incentive may or may not include funding of the project, reduction in pumpage fee, reuse credits, or some other form as may be developed and adopted.

3. Prohibit the resale or redistribution of non-potable water supplied by the SJRA (or a SJRA GRP participant) to other than the intended user without the written consent of the SJRA.

4. Ensure that such reuse:

    a. does not negatively impact the SJRA GRP or any Participant as a result;

    b. does not adversely impact the SJRA's storage, diversion, or other water rights; and

c. complies with applicable laws, rules and regulations of all governmental bodies with jurisdiction, and is subject and subordinate to any future changes in such laws, rules and regulations.

5. Refrain from endorsing or supporting water reuse projects, whether direct or indirect, that take advantage of Lake Conroe's storage and create a negative impact on the firmness of the SJRA's water rights.

The applicable portions of the SJRA GRP Contract Section 4.12 are reproduced below and included for reference only.

Section 4.12: Passing of Title to Water; Re-use. (a) Except as otherwise provided herein, if water is supplied to Participant under Section 4.04 or 4.05 hereof, then title to and possession and control of such Water shall remain with the Authority until it passes through the Point of Delivery, whereupon title to and possession and control of such Water shall pass from the Authority to Participant at the Point of Delivery. After title to such Water has passed to Participant at the Point of Delivery, Participant shall be responsible for storage, security, treatment, retreatment, disinfection, pressurization, distribution, and all other actions necessary to make use of such Water for Participant's purposes.

(b) Notwithstanding subsection (a) above, but subject to any limitations contained in any water rights permit or certificate, imposed by applicable laws, rules or regulations, or applicable under the Houston Contract or any future agreement between the Authority and a third party for the acquisition of water or water rights for the supply of water for the GRP or to be delivered through the Project, the Authority hereby consents to the direct re-use of Water by Participant; provided, however, that (i) unless specifically approved in writing by the Authority, any reduction in water demand of Participant resulting from such re-use of Water shall not serve to reduce the Contract Quantity, and (ii) the provisions of Section 3.04 hereof shall be applicable to such re-used Water. The Authority agrees that, other than as may be included in any future agreement between the Authority and a third party for the acquisition of water or water rights for the supply of water for the GRP or to be delivered through the Project, it will not impose limitations on the re-use of Water (or any other type of water) by Participant which are more restrictive than such limitations as may be applicable under the Houston Contract.

(c) Notwithstanding subsection (a) above, Water shall be subject to indirect re-use by Participant but only with the prior written consent of the Authority, which consent shall be given subject to the limitations and conditions in subsection (b) above and Section 3.04 hereof, and upon such terms and conditions as the Authority reasonably deems appropriate to ensure that such re-use:

(1) does not negatively impact the GRP or any particular Participant as a result;

(2) does not adversely impact the Authority's storage, diversion, or other water rights; and

(3) complies with applicable laws, rules and regulations of all governmental bodies with jurisdiction, and is subject and subordinate to any future changes in such laws, rules or regulations.

The Authority reserves the right to enter into additional agreements with a Participant whereby the Authority agrees to contribute Project funds to defray such Participant's costs of a re-use project, but only where the Auhtority determines that such use of Project funds would be cost effective and beneficial to the Participants as an Alternative Strategy.

(d) To the extent that the Authority or Participant utilizes, sells, or otherwise makes or has contracted for the beneficial re-use of its treated wastewater effluent as of the effective date of the Houston Contract, the continued beneficial re-use of such effluent shall be permitted for the purposes, to the extent, and on the terms existing as of the effective date of the Houston Contract, notwithstanding that a portion of such effluent may thereafter be derived from Water. After the Effective Date, any such re-use of effluent derived from Water shall require the consent of the Authority, if required under subsection (c) above, and Participant shall be responsible for (i) making appropriate provisions in any contracts for the sale of such effluent to the effect that

supply may be limited if the Participant connects to the Project, and (ii) securing the Authority's consent, if Authority consent is required under subsection (c) above, before making investments in re-use projects to address the potential that Participant may connect to the Project in the future and, as a result, be limited in the amount of effluent that is available for re-use.

(e) In order for the Authority to secure rights for the indirect re-use of Water that has been used by Participant, the Authority, and/or other Participants, Participant agrees to provide the Authority such documents and information and to execute such approvals related to Participant's use of Water and/or the discharge of wastewater effluent by Participant derived from Water as may be reasonably required by the Authority for such purposes. Participant hereby waives any objection or right of protest to the Authority's permit applications for such purposes. No provision of this Contract or the Rate Order shall give the Authority a separate right to regulate or control the quality of the wastewater effluent discharged by Participant; provided, however, the Authority reserves all rights under applicable laws, rules, or regulations to contest the quality of such wastewater effluent discharges.

(f) Notwithstanding any other provision of this Contract, the Authority shall not charge any import fees, or any other fees, rates or charges, to Participant in connection with or due to Participant's re-use of Water, water, or treated wastewater effluent allowed by this Contract, regardless of whether Participant implements such re-use individually or collectively with other Participants or non-Participants.

(g) Subject to the provisions of Section 3.04 hereof, the provisions of this section are not applicable to the direct or indirect re-use of water by Participant from any source other than the Project.

(h) For purposes of determining, for a given period of time, the amount of wastewater effluent of Participant that is derived from Water, the total amount of Participant's wastewater effluent during such time period will be multiplied by a fraction, the numerator of which is the total amount of Water taken by Participant during such time period and the denominator of which is the sum of Participants' total amount of water usage from all sources (including Water) during such time period.

End of the applicable portions of the SJRA GRP Contract.

Appendix F

Draft Water Conservation Policy

DRAFT POLICY REGARDING WATER CONSERVATION MEASURES

Policy Objective

The primary objective of all policies is to support the San Jacinto River Authority Groundwater Reduction Plan (SJRA GRP) Program and to benefit all SJRA GRP Participants. The objective of this water conservation measures policy is to establish and promote ongoing strategies for the SJRA GRP Participants to reduce the volume of water withdrawn from a water supply source, to reduce the loss or waste of water, and to maintain or improve the efficiency in the use of water. Water conservation measures will not impact the infrastructure required to meet the 2016 conversion. However, water conservation measures may have a significant future impact by delaying the need for future infrastructure and ultimately delaying the need for development of additional water supply sources.

Introduction

The goals of this Policy are to encourage participants to reduce water consumption, limit unaccounted for water, and extend the capacity of both existing and future water supplies. The potential results of a successfully implemented policy are reduced demands, prolonged capacity of existing facilities, delayed need for new facilities, and potential reduction, or downsizing of treatment and distribution facilities, which could result in economic benefits to the SJRA and the SJRA GRP Participants. The greatest obstacle to implementing any water conservation strategy is their cost relative to the cost of existing water supplies. As the cost of compliance with existing regulations increases, the incentive to conserve water will increase.

Policy Elements

1. Collect, read, review and understand existing water conservation plan (WCP) from all SJRA GRP Participants that currently have one in place. Assist the SJRA GRP Participants in developing, adopting and enforcing a water conservation plan at the retail level meeting the applicable minimum requirements of the SJRA and the TCEQ (30 T.A.C. Chapter 288; Subchapter A: Water Conservation Plans §§ 288.1-288.7, or any successor rules), as specified in the SJRA GRP Contract.

2. Prepare a Water Conservation study to identify potential reductions in water demand and develop water conservation strategies and goals at the retail level for reduction in water demand.

3. Develop a standard WCP and for the SJRA GRP Program that all SJRA GRP Participants can use as a guide at the retail level. Methods used to encourage

water conservation must be cost effective such that the cost to reduce demand is less than the cost to develop new/additional water supplies.

4. Implement a program requiring each SJRA GRP Participant to demonstrate compliance with the adopted WCP including established water conservation strategies and reduction goals of the GRP Program. This demonstrated compliance will include as a minimum:

    a. Dates and descriptions of the conservation methods implemented.
    b. Data about whether or not goals in the plan are being met.
    c. Actual amount of water saved.
    d. If the targets are not being met, an explanation as to why.

5. Evaluate/establish penalties for not meeting the goals.

The applicable portions of the SJRA GRP Contract Section 3.05 are reproduced below and included for reference only.

> Section 3.05: Water Conservation; Drought Contingency. Participant agrees to adopt and enforce a water conservation plan meeting the applicable minimum requirements of the Conservation District and the TCEQ (30 T.A.C. 95 288.1-288.7, or any successor rules), as well as a drought contingency plan meeting the applicable minimum requirements of the Conservation District and the TCEQ (30 T.A.C. §§ 288.20-288.22, or any successor rules). Participant may, but shall not be obligated, to include provisions in such plans that exceed or are more stringent than the minimum requirements described in the preceding sentence. Such plans must be completed and filed with the GRP Administrator at such times as may be reasonably required by the GRP Administrator, without regard to whether Participant will connect to the Project. In addition, after review by the Review Committee, the Authority may require Participant to adopt and enforce minimum requirements adopted by the Authority for such water conservation plans and drought contingency plans but only if: (i) such minimum requirements apply on an equal and uniform basis to all Participants and to all entities located in whole or in part in Montgomery County to which the Authority supplies wholesale groundwater or Water; and (ii) the Authority has the legal right to impose such minimum requirements on all such entities to which the Authority supplies wholesale groundwater or Water.

End of the applicable portions of the SJRA GRP Contract Section 3.05.

SUBCHAPTER A: WATER CONSERVATION PLANS

30 TAC §§288.1-288.6

§288.1. Definitions.

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise.

(1) **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.

(2) **Drought contingency plan** - A strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies. A drought contingency plan may be a separate document identified as such or may be contained within another water management document(s).

(3) **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, including commercial feedlot operations, commercial fish production, and the development of power by means other than hydroelectric.

(4) **Irrigation use** - The 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.

(5) **Irrigation water use efficiency** - The percentage of that amount of irrigation water which is beneficially used by agriculture crops or other vegetation relative to the amount of water diverted from the source(s) of supply. Beneficial uses of water for irrigation purposes include, but are not limited to, evapotranspiration needs for vegetative maintenance and growth, salinity management, and leaching requirements associated with irrigation.

(6) **Mining use** - The use of water for mining processes including hydraulic use, drilling, washing sand and gravel, and oil field repressuring.

(7) **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.

(8) **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 sue 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.

(9) **Pollution** - The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

(10) **Public Water Supplier** - an individual or entity that supplies water to the public for human consumption.

(11) **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.

(12) **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.

(13) **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.

(14) **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).

(15) **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.

§288.2. Water Conservation Plans for Municipal Uses by Public Water Suppliers.

(a) A water conservation plan for municipal water use by public water suppliers shall provide information, where applicable, in response to the following.

(1) **Minimum requirements.** All water conservation plans for municipal uses by public drinking water suppliers shall include the following elements:

(A) a utility profile including, but not limited to, information regarding population and customer data, water use data, water supply system data, and wastewater system data;

(B) specification of conservation goals including, but not limited to, municipal per capita water use goals, the basis for the development of such goals, and a time frame for achieving the specified goals;

(C) metering device(s), within an accuracy of plus or minus 5.0% in order to measure and account for the amount of water diverted from the source of supply;

(D) a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement;

(E) measures to determine and control unaccounted-for uses of water (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections, abandoned services, etc.);

(F) a program of continuing public education and information regarding water conservation;

(G) a water rate structure which is not "promotional," i.e., a rate structure which is cost-based and which does not encourage the excessive use of water;

(H) 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 in order to optimize available water supplies; and

(I) a means of implementation and enforcement which shall be evidenced by:

(i) a copy of the ordinance, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and

(ii) a description of the authority by which the water supplier will implement and enforce the conservation plan; and

(J) documentation of coordination with the Regional Water Planning Groups for the service area of the public water supplier in order to insure consistency with the appropriate approved regional water plans.

(2) Additional content requirements. Water conservation plans for municipal uses by public drinking water suppliers serving a current population of 5,000 or more and/or a projected population of 5,000 or more within the next ten years subsequent to the effective date of the plan shall include the following elements:

(A) a program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted-for uses of water;

(B) a record management system to record water pumped, water deliveries, water sales, and water losses which allows for the desegregation of water sales and uses into the following user classes:

(i) residential;

(ii) commercial;

(iii) public and institutional; and

(iv) industrial; and

(C) a requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), 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 in 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 applicable provisions of this chapter.

(3) Additional conservation strategies. Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements in paragraphs (1) and

(2) of this subsection, if they are necessary to achieve the stated water conservation goals of the plan. The commission may require that any of the following strategies be implemented by the water supplier if the commission determines that the strategy is necessary to achieve the goals of the water conservation plan:

(A) conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

(B) adoption of ordinances, plumbing codes, and/or rules requiring water-conserving plumbing fixtures to be installed in new structures and existing structures undergoing substantial modification or addition;

(C) a program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;

(D) reuse and/or recycling of wastewater and/or greywater;

(E) a program for pressure control and/or reduction in the distribution system and/or for customer connections;

(F) a program and/or ordinance(s) for landscape water management;

(G) a method for monitoring the effectiveness and efficiency of the water conservation plan; and

(H) any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

(b) A water conservation plan prepared in accordance with 31 TAC §363.15 (relating to Required Water Conservation Plan) of the Texas Water Development Board and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements pursuant to a memorandum of understanding between the commission and the Texas Water Development Board.

§288.3. Water Conservation Plans for Industrial or Mining Use.

A water conservation plan for industrial or mining uses of water shall provide information, where applicable, in response to each of the following elements:

(1) a description of the use of the water in the production process, including how the water is diverted and transported from the source(s) of supply, how the water is utilized in the production process, and the estimated quantity of water consumed in the production process and therefore unavailable for reuse, discharge, or other means of disposal;

(2) specification of conservation goals, the basis for the development of such goals, and a time frame for achieving the specified goals;

(3) a description of the device(s) and/or method(s) within an accuracy of plus or minus 5.0% to be used in order to measure and account for the amount of water diverted from the source of supply;

(4) leak-detection, repair, and accounting for water loss in the water distribution system;

(5) application of state-of-the-art equipment and/or process modifications to improve water use efficiency; and

(6) any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

§288.4. Water Conservation Plans for Irrigation Use.

(a) A water conservation plan for irrigation uses of water shall provide information shall provide information in response to the following applicable subsections.

(1) For an individual user:

(A) a description of the agricultural production process which shall include, but is not limited to, the type of crops and acreage of each crop to be irrigated, monthly irrigation diversions, any seasonal or annual crop rotation, and soil types of the land to be irrigated;

(B) a description of the irrigation method or system and equipment including pumps, flow rates, plans, and/or sketches of the system layout;

(C) a description of the device(s) and/or methods within an accuracy of plus or minus 5.0%, to be used in order to measure and account for the amount of water diverted from the source of supply;

(D) specification of conservation goals including, where appropriate, quantitative goals for irrigation water use efficiency and a pollution abatement and prevention plan;

(E) water-conserving irrigation equipment and application system or method including, but not limited to, surge irrigation, low pressure sprinkler, drip irrigation, and nonleaking pipe;

(F) leak-detection, repair, and water-loss control;

(G) scheduling the timing and/or measuring the amount of water applied (for example, soil moisture monitoring);

(H) land improvements for retaining or reducing runoff, and increasing the infiltration of rain and irrigation water including, but not limited to, land leveling, furrow diking, terracing, and weed control;

(I) tailwater recovery and reuse; and

(J) any other water conservation practice, method, or technique which the user shows to be appropriate for preventing waste and achieving conservation.

(2) For a system providing irrigation water to more than one user:

(A) a system inventory for the supplier's:

(i) structural facilities including the supplier’s water storage, conveyance, and delivery structures;

(ii) management practices, including the supplier's operating rules and regulations, water pricing policy, and a description of practices and/or devices used to account for water deliveries; and

(iii) a user profile including square miles of the service area, the number of customers taking delivery of water by the system, the types of crops, the types of irrigation systems, the types of drainage systems, and total acreage under irrigation, both historical and projected;

(B) specification of water conservation goals, including maximum allowable losses for the storage and distribution system;

(C) a description of the practice(s) and/or device(s) which will be utilized to measure and account for the amount of water diverted from the source(s) of supply;

(D) a monitoring and record management program of water deliveries, sales, and losses;

(E) a leak-detection, repair, and water loss control program;

(F) a program to assist customers in the development of on-farm water conservation and pollution prevention plans and/or measures;

(G) a requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), 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 in 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 applicable provisions of this chapter;

(H) official adoption of the water conservation plan and goals, by ordinance, rule, resolution, or tariff, indicating that the plan reflects official policy of the supplier;

(I) any other water conservation practice, method, or technique which the supplier shows to be appropriate for achieving conservation; and

(J) documentation of coordination with the Regional Water Planning Groups in order to insure consistency with the appropriate approved regional water plans.

(b) A water conservation plan prepared in accordance with the rules of the United States Department of Agriculture Natural Resource Conservation Service, the State Soil and Water Conservation Board, or other federal or state agency and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements pursuant to a memorandum of understanding between the commission and that agency.

§288.5. Water Conservation Plans for Wholesale Water Suppliers.

A water conservation plan for a wholesale water supplier shall provide information, where applicable, in response to each of the following paragraphs.

(1) Minimum requirements. All water conservation plans for wholesale water suppliers shall include the following elements:

(A) a description of the wholesaler's service area, including population and customer data, water use data, water supply system data, and wastewater data;

(B) specification of conservation goals including, where appropriate, target per capita water use goals for the wholesaler's service area, maximum acceptable unaccounted-for water, the basis for the development of said goals, and a time frame for achieving those goals;

(C) 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;

(D) a monitoring and record management program for determining water deliveries, sales, and losses;

(E) a program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system;

(F) 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 applicable provisions of this chapter;

(G) 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;

(H) 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; and

(I) documentation of coordination with the Regional Water Planning Groups for the service area of the wholesale water supplier in order to insure consistency with the appropriate approved regional water plans.

(2) Additional conservation strategies. Any combination of the following strategies shall be selected by the water wholesaler, in addition to the minimum requirements of paragraph (1) of this section, if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

(A) conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

(B) a program to assist customers in the development of conservation pollution prevention and abatement plans;

(C) a program for reuse and/or recycling of wastewater and/or greywater; and

(D) any other water conservation practice, method, or technique which the wholesaler shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

§288.6. Water Conservation Plans for Any Other Purpose or Use.

A water conservation plan for any other purpose or use not covered in this subchapter shall provide information where applicable about those practices, techniques, and technologies that will be used to reduce the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water.

Appendix G

Draft Drought Contingency Policy

DRAFT POLICY REGARDING DROUGHT CONTINGENCY MEASURES

Policy Objective

The primary objective of all policies is to support the San Jacinto River Authority Groundwater Reduction Plan (SJRA GRP) Program and to benefit all SJRA GRP Participants. The objective of this drought contingency measures policy is to establish and promote strategies for the SJRA GRP Participants to reduce peak water demands and to extend the water supplies.

Introduction

Drought is a frequent and inevitable factor in the climate of Montgomery County. Therefore it is vital to plan for the effect that drought will have on the use, allocation and conservation of water. The Texas Commission on Environmental Quality (TCEQ) requires retail water suppliers to prepare and adopt a drought contingency plan.

The goals of this Policy are to reduce peak water demands and extend water supplies. The potential results of a successfully implemented policy are reduced peak water demands and extending water supplies during drought conditions benefitting the SJRA and the SJRA GRP Participants. The key to any drought contingency plan is to identify drought conditions as early as possible and to begin reduction of water use immediately to minimize the impacts of the drought on water supplies, particularly surface water in Lake Conroe and groundwater in the Gulf Coast Aquifer.

Policy Elements

1. Prepare a Drought Contingency study to identify potential reductions in peak water demand and develop drought contingency strategies and goals for reduction in peak water demand and extension of water supplies during drought conditions.

2. Develop a standard Drought Contingency Plan (DCP) for the SJRA GRP Program that all SJRA GRP Participants can use as a guide. This standard plan will at a minimum include the following:

    a. Specific, quantified targets for water use reductions.
    b. Drought response stages.
    c. Triggers to begin and end each stage.
    d. Supply management measures.
    e. Demand management measures.
    f. Description of drought indicators.
    g. Notification procedures.
    h. Procedures for granting exceptions.

i. Public input to the plan.
j. Ongoing public education.
k. Adoption of plan.

3. Collect, read, review and understand existing drought contingency plans from all SJRA GRP Participants that currently have one in place. Assist the SJRA GRP Participants that do not currently have one in place to adopt and enforce a drought contingency plan meeting the applicable minimum requirements of the SJRA and the TCEQ (30 T.A.C. Subchapter B; Drought Contingency Plans §§ 288.20-288.22, or any successor rules) as specified in the SJRA GRP Contract.
4. Implement a program requiring each SJRA GRP Participant to demonstrate compliance with the established drought contingency goals. The program should evaluate/establish penalties for not meeting the DCP goals.

The applicable portions of the SJRA GRP Contract Section 3.05 are reproduced below and included for reference only.

> Section 3.05: Water Conservation; Drought Contingency. Participant agrees to adopt and enforce a water conservation plan meeting the applicable minimum requirements of the Conservation District and the TCEQ (30 T.A.C. 95 288.1-288.7, or any successor rules), as well as a drought contingency plan meeting the applicable minimum requirements of the Conservation District and the TCEQ (30 T.A.C. §§ 288.20-288.22, or any successor rules). Participant may, but shall not be obligated, to include provisions in such plans that exceed or are more stringent than the minimum requirements described in the preceding sentence. Such plans must be completed and filed with the SJRA GRP Administrator at such times as may be reasonably required by the SJRA GRP Administrator, without regard to whether Participant will connect to the Project. In addition, after review by the Review Committee, the SJRA may require Participant to adopt and enforce minimum requirements adopted by the SJRA for such water conservation plans and drought contingency plans but only if: (i) such minimum requirements apply on an equal and uniform basis to all Participants and to all entities located in whole or in part in Montgomery County to which the SJRA supplies wholesale groundwater or Water; and (ii) the SJRA has the legal right to impose such minimum requirements on all such entities to which the SJRA supplies wholesale groundwater or Water.

End of the applicable portions of the SJRA GRP Contract Section 3.05.

SUBCHAPTER B: DROUGHT CONTINGENCY PLANS

30 TAC §§288.20-288.22

STATUTORY AUTHORITY

The amendments are adopted under Texas Water Code, §5.103, which provides the commission with the authority to adopt and enforce rules necessary to carry out its powers and duties under the laws of this state; §5.120, which requires the commission to administer the law so as to promote the judicious use and maximum conservation of water; and §11.1272, which requires the commission by rule to require submission of certain drought contingency plans.

§288.20. Drought Contingency Plans for Municipal Uses by Public Water Suppliers.

(a) A drought contingency plan for a retail public water supplier, where applicable, shall provide information in response to each of the following.

(1) Minimum requirements. Drought contingency plans shall include the following minimum elements.

(A) Preparation of the plan shall include provisions to actively inform the public and affirmatively provide opportunity for public input. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the public and providing written notice to the public concerning the proposed plan and meeting.

(B) Provisions shall be made for a program of continuing public education and information regarding the drought contingency plan.

(C) The drought contingency plan must document coordination with the Regional Water Planning Groups for the service area of the retail public water supplier to insure consistency with the appropriate approved regional water plans.

(D) The drought contingency plan shall include a description of the information to be monitored by the water supplier, and specific criteria for the initiation and termination of drought response stages, accompanied by an explanation of the rationale or basis for such triggering criteria.

(E) The drought contingency plan must include drought or emergency response stages providing for the implementation of measures in response to at least the following situations:

(i) reduction in available water supply up to a repeat of the drought of record;

(ii) water production or distribution system limitations;

(iii) supply source contamination; or

(iv) system outage due to the failure or damage of major water system components (e.g., pumps).

(F) The drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:

(i) curtailment of non-essential water uses; and

(ii) utilization of alternative water sources and/or alternative delivery mechanisms with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).

(G) The drought contingency plan must include the procedures to be followed for the initiation or termination of each drought response stage, including procedures for notification of the public.

(H) The drought contingency plan must include procedures for granting variances to the plan.

(I) The drought contingency plan must include procedures for the enforcement of any mandatory water use restrictions, including specification of penalties (e.g., fines, water rate surcharges, discontinuation of service) for violations of such restrictions.

(2) Privately-owned water utilities. Privately-owned water utilities shall prepare a drought contingency plan in accordance with this section and shall incorporate such plan into their tariff.

(3) Wholesale water customers. Any water supplier that receives all or a portion of its water supply from another water supplier shall consult with that supplier and shall include in the drought contingency plan appropriate provisions for responding to reductions in that water supply.

(b) A wholesale or retail water supplier shall notify the executive director within five business days of the implementation of any mandatory provisions of the drought contingency plan.

(c) The retail public water supplier shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as the adoption or revision of the regional water plan.

§288.21. Drought Contingency Plans for Irrigation Use.

(a) A drought contingency plan for an irrigation use, where applicable, shall provide information in response to each of the following.

(1) Minimum requirements. Drought contingency plans for irrigation water suppliers shall include policies and procedures for the equitable and efficient allocation of water on a pro rata

basis during times of shortage in accordance with Texas Water Code, §11.039. Such plans shall include the following elements as a minimum.

(A) Preparation of the plan shall include provisions to actively inform and to affirmatively provide opportunity for users of water from the irrigation system to provide input into the preparation of the plan and to remain informed of the plan. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the water users and providing written notice to the water users concerning the proposed plan and meeting.

(B) The drought contingency plan must document coordination with the Regional Water Planning Groups to insure consistency with the appropriate approved regional water plans.

(C) The drought contingency plan shall include water supply criteria and other considerations for determining when to initiate or terminate water allocation procedures, accompanied by an explanation of the rationale or basis for such triggering criteria.

(D) The drought contingency plan shall include methods for determining the allocation of irrigation supplies to individual users.

(E) The drought contingency plan shall include a description of the information to be monitored by the water supplier and the procedures to be followed for the initiation or termination of water allocation policies.

(F) The drought contingency plan shall include procedures for use accounting during the implementation of water allocation policies.

(G) The drought contingency plan shall include policies and procedures, if any, for the transfer of water allocations among individual users within the water supply system or to users outside the water supply system.

(H) The drought contingency plan shall include procedures for the enforcement of water allocation policies, including specification of penalties for violations of such policies and for wasteful or excessive use of water.

(2) Wholesale water customers. Any irrigation water supplier that receives all or a portion of its water supply from another water supplier shall consult with that supplier and shall include in the drought contingency plan appropriate provisions for responding to reductions in that water supply.

(3) Protection of public water supplies. Any irrigation water supplier that also provides or delivers water to a public water supplier(s) shall consult with that public water supplier(s) and shall include in the plan mutually agreeable and appropriate provisions to ensure an uninterrupted supply of water necessary for essential uses relating to public health and safety. Nothing in this provision shall be construed as requiring the irrigation water supplier to transfer irrigation water supplies to non-irrigation use on a compulsory basis or without just compensation.

(b) Irrigation water users shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as adoption or revision of the regional water plan.

§288.22. Drought Contingency Plans for Wholesale Water Suppliers.

(a) A drought contingency plan for a wholesale water supplier shall include the following minimum elements.

(1) Preparation of the plan shall include provisions to actively inform the public and to affirmatively provide opportunity for user input in the preparation of the plan and for informing wholesale customers about the plan. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the public and providing written notice to the public concerning the proposed plan and meeting.

(2) The drought contingency plan must document coordination with the Regional Water Planning Groups for the service area of the wholesale public water supplier to insure consistency with the appropriate approved regional water plans.

(3) The drought contingency plan shall include a description of the information to be monitored by the water supplier and specific criteria for the initiation and termination of drought response stages, accompanied by an explanation of the rationale or basis for such triggering criteria.

(4) The drought contingency plan shall include a minimum of three drought or emergency response stages providing for the implementation of measures in response to water supply conditions during a repeat of the drought-of-record.

(5) The drought contingency plan shall include the procedures to be followed for the initiation or termination of drought response stages, including procedures for notification of wholesale customers regarding the initiation or termination of drought response stages.

(6) The drought contingency plan shall include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:

(A) pro rata curtailment of water deliveries to or diversions by wholesale water customers as provided in Texas Water Code, §11.039; and

(B) utilization of alternative water sources with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).

(7) The drought contingency plan shall include a provision in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that in case of a shortage of water resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code, §11.039.

(8) The drought contingency plan shall include procedures for granting variances to the plan.

(9) The drought contingency plan shall include procedures for the enforcement of any mandatory water use restrictions including specification of penalties (e.g., liquidated damages, water rate surcharges, discontinuation of service) for violations of such restrictions.

(b) The wholesale public water supplier shall notify the executive director within five business days of the implementation of any mandatory provisions of the drought contingency plan.

(c) The wholesale public water supplier shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as adoption or revision of the regional water plan.

SUBCHAPTER C: REQUIRED SUBMITTALS

30 TAC §288.30

STATUTORY AUTHORITY

The amendment is adopted under Texas Water Code, §5.103, which provides the commission the authority to adopt and enforce rules necessary to carry out its powers and duties under the laws of this state; §5.120, which requires the commission to administer the law so as to promote the judicious use and maximum conservation of water; §11.1271, which requires the commission by rule to require

Appendix H

Water Facility Site Plans

This document is released for interim planning purposes by authority of Stanley T. Williams, P.E. 51196 on September 30, 2010 and is not to be used for bidding or construction purposes.

LAKE CONROE

N

100 0 100 200
SCALE IN FEET

RESTRICTED FOR ACCESS TO S.J.R.A. PROPERTY RESERVE "H" 1,642 S.F.

50' NOISE & SITE BARRIER OR 8' WALL

MAINTENANCE AND FLEET STORAGE

ROADWAY

PLANT ENTRANCE

ADMIN BUILDING (FUTURE)

2 STORY ADMIN BUILDING

ELECTRICAL GENERATORS

ELECTRICAL SUBSTATION

100' BUFFER

CLARIFICATION

SLUDGE PUMP STATIONS

OZONE

FILTRATION

OZONE BLDG

FINISHED WATER TOC POLISHING

PHASE 3&4 CHEMICAL STORAGE

PHASE 1&2

BACKWASH EQ.

BACKWASH CLARIFIERS

BELT PRESS BUILDING

SLUDGE HOLDING TANKS

SLUDGE THICKENERS

SITE CORRIDOR PRESERVE

16 MG FINISHED WATER STORAGE

16 MG FINISHED WATER STORAGE

16 MG FINISHED WATER STORAGE

PROBABLE HIGH WATER MARK FOR JURISDICTIONAL WATER OF THE U.S.

POND WATER SURFACE

PROCESS WATER RECOVERY BASIN

EXISTING WWTP SITE 3.321 AC.

50' BUFFER

RAW WATER INTAKE AND PUMP STATION

7.5 MG FINISHED WATER STORAGE

7.5 MG FINISHED WATER STORAGE

HIGH SERVICE PUMP STATION

GENERATOR

50' BUFFER

500 FT. WWTP BUFFER

PROPOSED BUFFER LIMITS

POTENTIAL BUILDABLE BOUNDARIES

TWE TEXAS WATER ENGINEERING
Texas P.E. Firm Registration No. F-8492

HDR
HDR Engineering, Inc.
Texas P.E. Firm Registration No. F-754

ISSUE	DATE	DESCRIPTION
A	09/30/2010	PRELIMINARY SITE PLANNING

PROJECT MANAGER: STAN WILLIAMS, P.E.
PROJECT NUMBER: 000001318 43-0006

SAN JACINTO RIVER AUTHORITY

WATER TREATMENT PLANT SITE PLANNING

0 1" 2"

FILENAME –
SCALE 1" = 100'
SHEET

PROHIBITED PUBLIC BOAT LAUNCH (1000' RADIUS)

RESTRICTED ACCESS ZONE (200' RADIUS)

OPTION 5

OPTION 6

OPTION 3

OPTION 4

OPTIONS 1&2

CONTROL POINT FOR PAVING AND PIPING QUANTITIES

PROPOSED WTP

DREDGED MATERIAL DEGANT FACILITY (FOR OPTIONS 3, 4 AND 5)

50+00 60+00 65+00 70+00 75+00 80+00 85+00 90+00 95+00 100+00 105+00 110+00 115+00 120+00 125+00

N

0 250' 500'
HORIZONTAL

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

FREESE NICHOLS
3100 Wilcrest, Suite 200
Houston, Texas 77042-8029
Phone - (713) 600-6800
Fax - (713) 600-6801

F&N JOB NO. SJR10125
DATE AUGUST 2010
SCALE AS SHOWN
DESIGNED JVW
DRAFTED RCW
FILE CV-ALL-PL-EXBT.dwg

SAN JACINTO RIVER AUTHORITY
GRP PROGRAM

LAKE CONROE RAW WATER PUMP STATION

OVERALL

PROPOSED PUMP STATION OPTIONS 1 - 6

4.1
FIGURE

Date: Nov 17, 2010 - 12:09pm User: rcw File: N:\util\Drawings\CV-ALL-PL-EXBT.dwg
Nov 17, 2010 - 12:09 LTS: 1 TWIST: MCSRV2
REFERENCES: N:\Star 7REPORTBOR.dwg H:\PIPES_PUMPS\CAD\emigonlament.DWG

Appendix I

Template of GRP Contract – Contract for Groundwater Reduction Planning, Alternative Water Supply, and Related Goods and Services by and between the San Jacinto River Authority and [Participant]

CONTRACT
FOR GROUNDWATER REDUCTION PLANNING, ALTERNATIVE WATER SUPPLY, AND RELATED GOODS AND SERVICES
BY AND BETWEEN
THE SAN JACINTO RIVER AUTHORITY AND
1404 BLAKETREE, L.P.

TABLE OF CONTENTS

CONTRACT
FOR GROUNDWATER REDUCTION PLANNING,
ALTERNATIVE WATER SUPPLY, AND
RELATED GOODS AND SERVICES
BY AND BETWEEN
THE SAN JACINTO RIVER AUTHORITY AND
1404 BLAKETREE, L.P.

THIS CONTRACT FOR GROUNDWATER REDUCTION PLANNING, ALTERNATIVE WATER SUPPLY, AND RELATED GOODS AND SERVICES ("Contract") is made and entered into as of June 1, 2010, by and between the **SAN JACINTO RIVER AUTHORITY** ("Authority"), a conservation and reclamation district, body politic and corporate and a governmental agency of the State of Texas created and operating under the provisions of Chapter 426, Acts of the 45th Texas Legislature, Regular Session, 1937, as now or hereafter amended (the "Act"), enacted pursuant to the provisions of Section 59 of Article XVI of the Texas Constitution, and **1404 BLAKETREE, L.P.**, a Texas limited partnership ("Participant").

W I T N E S S E T H:

RECITALS

WHEREAS, the Lone Star Groundwater Conservation District (the "Conservation District") was created by the Texas Legislature to conserve and protect the groundwater aquifers beneath Montgomery County and, in that regard, the Conservation District has established a District Regulatory Plan (the "Plan") to reduce groundwater production from certain aquifers located within Montgomery County by its establishment of regulatory deadlines subject to enforcement; and

WHEREAS, the Authority provides wholesale water service to the territory shown on **Exhibit A** hereto through the Authority's pumpage of groundwater from wells operated pursuant to various permits issued by the Conservation District; and

WHEREAS, Participant utilizes groundwater to service the territory shown on **Exhibit B** hereto through Participant's pumpage of groundwater from wells operated pursuant to permits issued by the Conservation District listed and described on **Exhibit C** hereto; and

WHEREAS, the Authority and Participant are each a non-exempt large volume groundwater user subject to the Conservation District's groundwater reduction requirements under the Plan ("Regulated User"); and

WHEREAS, the Plan requires each Regulated User to submit to the Conservation District a groundwater reduction plan which sets forth, among other items, (a) a source for water supply, or water conservation methods in certain circumstances, that will effect a reduction in the

Regulated User's groundwater pumpage sufficient to meet the Conservation District's groundwater reduction requirements, (b) evidence, if and as necessary, that a current or proposed water supplier to the Regulated User has sufficient alternative water supplies and/or rights to effect the Regulated User's required reduction in groundwater pumpage under the Plan based on the Regulated User's present and projected total water demands, (c) a preliminary engineering feasibility report of the proposed facilities to be designed, permitted, constructed, operated, maintained, and administered in order for the Regulated User to meet the first phase of the Conservation District's groundwater reduction requirements; and (d) conceptual plans of the proposed facilities to be constructed in order for the Regulated User to meet the second and any subsequent phases of the Conservation District's groundwater reduction requirements; and

WHEREAS, the Plan allows two or more Regulated Users to (a) enter into contractual agreements to share costs or cooperate in ways that achieve orderly reductions in total groundwater usage and conversions to alternative water supplies, and/or (b) join with other Regulated Users for the purpose of reducing groundwater withdrawals and achieving orderly compliance with the Conservation District's groundwater reduction requirements; and

WHEREAS, the Authority has developed supplies of surface water that, when taken together with groundwater withdrawals to be permitted by the Conservation District under the Plan, are reasonably believed to be adequate to satisfy the present and projected total water demands of Montgomery County for the planning period extending through 2045, as established by the Conservation District under the Plan, and may hereafter further develop supplies of surface water in accordance with certain procedures set forth herein that, when taken together with groundwater withdrawals to be permitted by the Conservation District under the Plan, are adequate to satisfy the present and projected total water demands of Montgomery County through the Contract Term; and

WHEREAS, the Authority has heretofore prepared and submitted to the Conservation District a Water Resources Assessment Plan (the "WRAP") which preliminarily addressed many of the items to be included in a groundwater reduction plan sufficient to meet the Conservation District's requirements; and

WHEREAS, as set forth in the WRAP, a number of Regulated Users and the Authority have preliminarily developed a preliminary, collective solution in response to the Conservation District's groundwater reduction requirements whereby a surface water treatment and transmission system (the "Project") is proposed to be designed, permitted, constructed, operated, maintained, and administered by the Authority in order to provide phased treatment, transmission and delivery of the Authority's surface water supplies to certain Regulated Users serving densely populated areas of Montgomery County, for blending with the groundwater supplies of such Regulated Users, so that other Regulated Users may continue to pump groundwater; and

WHEREAS, the Authority and Participant deem it necessary and appropriate at this time to enter into a contract setting forth the terms and conditions under which the Authority, Participant, and any other Regulated User that executes a written agreement in a form substantially similar hereto (collectively, the "Participants"), will form a group to achieve overall compliance with the Plan in an efficient and cost effective manner, similar in concept to the

proposal in the WRAP, but subject to the further terms and conditions set forth herein, by and through the Authority's provision of certain goods and services to Participants, including: (a) the development and administration of a groundwater reduction plan ("GRP") by the Authority that includes all Participants, (b) the design, permitting, construction, operation, maintenance, and administration of the Project and related facilities, improvements, appurtenances, property, and interests in property by the Authority, (c) the sale of treated surface water by the Authority to certain Participants and, to the extent necessary and feasible, the development by the Authority of additional surface water supplies, (d) the delivery of treated surface water to certain Participants through the Project, (e) the administration of the GRP and the Project by the Authority in a manner that will over-convert certain Participants to treated surface water supplies (but not necessarily eliminate the need for groundwater usage by such Participants under certain conditions), such that other Participants and future Participants may continue to develop, produce, and utilize groundwater, (f) the financing by the Authority of design, permitting, construction, and other costs related to the Project, (g) the establishment and administration of the Project and of rules, regulations, policies, and procedures relating to the development, implementation, operation, maintenance, and enforcement of the Project and the GRP ("Rules"), and (h) the establishment, collection, enforcement, and application of fees, rates, and charges for treated surface water delivered to certain Participants through the Project, groundwater pumped by Participants, breach or violation of this Contract or any similar Participant contract, or any Rule, in order to timely and adequately fund the costs associated with the Project, and achieve and maintain compliance with the GRP and the groundwater reduction requirements under the Plan; and

WHEREAS, the Authority is authorized to enter into this Contract pursuant to the Act and Section 49.213 of the Texas Water Code; and

WHEREAS, Participant is authorized to enter into this Contract pursuant to its governing partnership agreement.

AGREEMENT

NOW, THEREFORE, for and in consideration of the premises and of the mutual covenants and agreements herein contained, and the goods and services to be provided and rendered by the Authority hereunder, and the payments to be made by the Authority and Participant hereunder, the Authority and Participant do mutually agree as follows:

ARTICLE I

Definitions; Interpretations; Consideration

Section 1.01: Definitions. In addition to terms defined elsewhere in this Contract, and unless the context requires otherwise, the following terms used in this Contract have the meanings set forth below and, to the extent applicable, supplement terms defined elsewhere in this Contract:

(a) "Applicable Interest Rate" means the highest net effective interest rate, as defined by Section 1204.005, Texas Government Code, on any outstanding issue or series of Bonds of the Authority sold in a public offering to finance or maintain all or any portion of the Project, or if none, an interest rate calculated by the Authority equal to one percent (1%) above the highest average interest rate reported by the Daily Bond Buyer in its weekly "20 Bond Index" during the one-month period preceding the date of such calculation.

(b) "Alternative Strategies" is defined in Section 2.02 hereof.

(c) "Authority" is defined in the Recitals hereto and means and includes the legal successors or assigns of the Authority.

(d) "Authority Meters" is defined in Section 5.02 hereof.

(e) "Bonds" is defined in Section 8.01 hereof.

(f) "Conservation District" is defined in the Recitals hereto and means and includes the legal successors or assigns of the Conservation District.

(g) "Contract" is defined in the Recitals hereto and means and includes any supplements or amendments to this Contract.

(h) "Contract Term" is defined in Section 12.01 hereof.

(i) "Contract Quantity" is defined in Section 4.09 hereof.

(j) "Days" means calendar days and not business days, unless otherwise expressly provided in this Contract.

(k) "Effective Date" means the date first written above.

(l) "Emergency Condition" means a condition that poses an unacceptable risk of a serious health hazard, an unreasonable risk of economic loss to the Project or GRP, or an unreasonable risk that Conservation District deadlines under the Plan will not be time met, and which requires immediate action.

(m) "GRP" is defined in the Recitals hereto and means and includes the groundwater reduction plan to be developed, filed, and amended as necessary, by the Authority pursuant to Article II hereof, and administered by the Authority hereunder, including any supplements, revisions, or amendments to the GRP.

(n) "GRP Administrator" means the General Manager of the Authority, or his or her designee, including any Deputy General Manager or other staff member of the Authority, a representative of an independent engineering firm engaged by the Authority to act as "Program Manager," or any other public or private entity or person who may hereafter by delegation from the Authority exercise the functions of the GRP Administrator.

(o) "Houston Contract" means that certain Water Supply Contract between the City of Houston, Texas, and the Authority, effective as of October 16, 2009.

(p) "Measuring Equipment" is defined in Section 4.06(a)(2) hereof.

(q) "On-Site Facilities" is defined in Section 4.06(a) hereof.

(r) "Participant" is defined in the Recitals hereto and means and includes the legal successors or assigns of Participant.

(s) "Participant Meters" is defined in Section 4.06(a)(1) hereof.

(t) "Participants" is defined in the Recitals hereto and means and includes the Authority, Participant, and any other Regulated User that enters into and remains subject to a written agreement with the Authority in a form substantially similar to this Contract.

(u) "Participant's System" means all Wells, pipelines, storage facilities, and other facilities comprising Participant's water supply and distribution system.

(v) "Participant System Site" means the water plant site, or water plant sites, upon which the facilities of Participant's System for receiving Water are principally located.

(w) "Party" means either the Authority or Participant.

(x) "Parties" means both the Authority and Participant.

(y) "Payment Commencement Date" means August 1, 2010.

(z) "Plan" is defined in the Recitals hereto and means and includes any amendments, revisions or supplements thereto as may be adopted by the Conservation District on or after the Effective Date.

(aa) "Point of Delivery" for Participant means the point or points (i.e., the downstream flange of the Authority Meter(s)) where Water from the Project is delivered to Participant's System.

(bb) "Private Well Owner" means a Participant that is a water supply corporation, private entity (including one that generates electricity, manufactures goods, or owns or operates a golf course), or an investor owned utility.

(cc) "Project" is defined in the Recitals hereto and means and includes the entire project to be developed by the Authority pursuant to this Contract to divert, treat, and supply potable water (whether derived from surface water, groundwater, or other sources) to the Point of Delivery, including all land, rights-of-way, easements, contract rights, plants, pipelines, machinery, equipment, appurtenances, and related tangible and intangible properties comprising same, and any water rights and related raw water facilities and conveyances acquired or

constructed for the benefit of the Participants with Project revenues pursuant to Section 9.01(b) hereof, save and except (i) On-Site Facilities; (ii) any surface water diversion, treatment, storage, pumping, transmission, transportation, or delivery facilities and equipment heretofore or hereafter developed, acquired, or constructed by the Authority out of revenues or resources other than Project revenues, unless otherwise intended for the benefit of the Participants pursuant to Section 9.01(b) hereof, and any related water rights, water supply contracts, or similar permits, certificates, or rights to divert, store, or appropriate surface water; (iii) all or any part of any water supply systems or facilities (whether or not physically connected to the Project) designed, permitted, financed, constructed, purchased, or otherwise acquired by the Authority, or by any customer of The Woodlands Division of the Authority, or the successors or assigns of any such customer, without the use of Project revenues (other than with respect to any On-Site Facilities), for producing, transporting, treating, and distributing water within or for providing service to the Authority's service area shown on **Exhibit A** hereto, as such Authority service area may be expanded, reduced, or otherwise modified from time to time, together with such improvements, extensions, enlargements, replacements, additions, modifications, or betterments thereto now or hereafter designed, permitted, constructed, purchased, or otherwise acquired by the Authority, and including all or any part of any such water supply system or systems from which water supply services are or will be furnished or made available to such Authority service area; and (iv) all works, facilities, improvements, interests in property, plants, equipment, contract rights, water rights, permits, and other assets and properties of the Authority needed for and used in connection with the conservation, storage, diversion, appropriation, use, transportation, distribution, treatment, or delivery of water, under or pursuant to the rights, powers, and authority granted under or evidenced by Certificate of Adjudication Nos. 10-4963, 10-4964, and 08-4279, and Water Permit Nos. 5271, 5807, 5808, and 5809, as amended, issued by the TCEQ, or its predecessor, as same may be now or hereafter amended, including, without limitation, any such permits and certificates relating to the Authority's undivided interest in and to the Lake Conroe Dam and Reservoir, located on the West Fork of the San Jacinto River near the City of Conroe, Texas, the Authority's Highlands Reservoir, located in southeast Harris County near the unincorporated community of Highlands, Texas, the Authority's Canal System, extending from Lake Houston to and beyond Highlands Reservoir in southeast Harris County, and all related pump stations, pipelines, canals, siphons and storage, control, diversion, measurement, distribution, and delivery facilities and all improvements, extensions, enlargements, replacements, additions or betterments thereto now existing or hereafter purchased, constructed or acquired by the Authority, or under or pursuant to any further or additional water rights, certificates, or permits hereafter acquired by the Authority, other than through the use of Project revenues.

(dd) "Rate Order" means the prevailing order or resolution duly adopted by the Board of Directors of the Authority, to the extent not contrary to, inconsistent with, or prohibited by the terms and provisions of this Contract, which sets forth (i) the groundwater pumpage fee established for purposes of Section 6.02(1) hereof and any related provisions of this Contract, and (ii) the rate for Water for purposes of Section 6.02(2) hereof and any related provisions of this Contract, and (iii) any other charges permitted to be established, charged, collected, or enforced hereunder.

(ee) "Regulated User" is defined in the Recitals hereto and means and includes any public or private entity or person that is or becomes subject to the Plan on or after the Effective Date.

(ff) "Review Committee" means the committee to be organized and established pursuant to Section 2.06 hereof.

(gg) "Rules" is defined in the Recitals hereto and means and includes any rules, regulations, policies, or procedures deemed necessary and proper and duly adopted by the Board of Directors of the Authority for or relating to the development, implementation, operation, maintenance, or enforcement of the Project and the GRP, to the extent not contrary to, inconsistent with, or prohibited by the terms and provisions of this Contract, and all related amendments, revisions or supplements thereto.

(hh) "TCEQ" means the Texas Commission on Environmental Quality and includes any board, agency, commission, or department of the State of Texas succeeding to the principal duties and responsibilities of the TCEQ.

(ii) "Water" means treated surface water delivered through the Project.

(jj) "Well" means any current or future groundwater well operated by Participant, whether currently in operation or, at Participant's discretion, placed into operation hereafter, and specifically including each groundwater well identified under **Exhibit C**, that is subject to the Conservation District's groundwater reduction requirements under the Plan.

(kk) "Wells" means each and every Well, collectively, whether one or more.

Section 1.02: Titles, Headings, and Exhibits. (a) The titles, heading, and captions appearing in the articles of this Contract and following each numbered section of this Contract are inserted and included solely for convenience and shall never be considered or given any effect in construing this Contract, or any provision hereof, or in connection with the duties, obligations, or liabilities of the respective Parties hereto or in ascertaining intent, if any questions of intent should arise.

(b) The exhibits attached hereto are incorporated as part of this Contract for all purposes.

Section 1.03: Interpretation of Contract. (a) This Contract and all the terms and provisions hereof shall be liberally construed to effectuate the purposes set forth herein and to sustain the validity of this Contract.

(b) Unless the context requires otherwise, words of the masculine gender shall be construed to include correlative words of the feminine and neuter genders and *vice versa*, and words of the singular number shall be construed to include correlative words of the plural number and *vice versa*. The word "include", and any of its derivatives, shall be interpreted as

language of example and not of limitation, and shall be deemed to be followed by the words "without limitation", unless otherwise expressly provided herein.

(c) The Parties agree that this Contract shall not be construed in favor of or against a Party on the basis that the Party did or did not author this Contract.

Section 1.04: Nature and Sufficiency of Consideration. By and through the execution of this Contract, the Authority agrees to provide certain goods and services to Participant, including: (a) the development and administration of a GRP that includes Participant, (b) the design, permitting, construction, operation, maintenance, and administration of the Project and related facilities, improvements, appurtenances, property, and interests in property by the Authority, as necessary to implement the GRP and thereby benefit Participant, (c) the sale of treated surface water by the Authority to certain Participants, as necessary to implement the GRP and thereby benefit Participant, (d) the administration of the GRP and the Project by the Authority, (e) the financing by the Authority of design, permitting, construction, and other costs related to the Project, (f) the establishment and administration of the Project, the GRP, and the Rules, and (g) the establishment, collection, enforcement, and application of fees, rates, and charges. The Authority acknowledges that an essential element of the consideration for Participant to enter into this Contract is that the Authority will adopt, implement and enforce the GRP in good faith and with due diligence for the purpose and objective of achieving and maintaining compliance with the Plan. In consideration of the foregoing, Participant agrees to pay the Authority certain fees, rates, and charges pursuant to the terms and provisions of this Contact, including Article VI hereof. The Parties acknowledge the sufficiency of such consideration.

ARTICLE II

Groundwater Reduction Plan; Review Committee

Section 2.01: Purposes of GRP. The purpose of the GRP is to set forth the general plan of the Authority to reduce groundwater withdrawals by certain Participants so that, collectively, all Participants will achieve and maintain compliance with the Conservation District's groundwater reduction requirements under the Plan, including information regarding (a) the Authority's development and procurement of all necessary contractual rights and agreements needed to reduce the groundwater withdrawals of the Participants, (b) the design, permitting, construction, operation, and maintenance of infrastructure necessary to reduce the groundwater withdrawals of the Participants, (c) the land, easements, rights-of-way, and other interests in real property needed in connection with such infrastructure, (d) any permits or regulatory authorizations required under federal, state, or local laws, and (e) the manner and methods by which the Authority proposes to finance the foregoing.

Section 2.02: Development of the GRP. (a) The Authority shall develop a single GRP for all Participants. In general, the intent of the Participants is that the GRP will be based upon the Project such that the Authority will design, permit, construct, own, operate, maintain, and administer certain infrastructure, in phases, that will withdraw raw surface water from Lake Conroe, and other sources that may be developed if necessary, for treatment and transmission to

certain Participants. As provided in this Contract, such Participants will be required by the Authority to utilize surface water and groundwater resources in a manner that will allow other Participants and new Participants to continue to develop and utilize groundwater resources and minimize the costs to all Participants to comply with the Conservation District's groundwater reduction requirements under the Plan. Further, the intent of the Participants is that the GRP will provide for an amount of surface water to be utilized by certain Participants that will be sufficient to allow for the continued development and use of groundwater resources by all Participants, including those utilizing surface water, in a manner that, to the greatest extent practicable, is unimpeded by the requirements of the Plan.

(b) In order to equitably distribute the costs of compliance among the Participants, all Participants will pay certain fees to the Authority for their groundwater usage, and those Participants that will be served by the Project will additionally pay the Authority the prevailing rate for Water. As provided in this Contract, the Authority's fees, rates, and charges will be established so that Participants are neither benefited nor penalized for being required to take Water from the Project, or for relying solely upon groundwater resources to meet their demands. The Authority's determination as to which Participants will receive Water will be made based upon factors (i) through (v) described in Section 4.02(a).

(c) The Authority reserves the right to include strategies in the GRP, in addition to the Project, that are reasonably determined by the Authority to be beneficial to all Participants, for the reduction in groundwater usage and compliance with the Conservation District's groundwater reduction requirements under the Plan, which strategies (collectively, "Alternative Strategies") may include (i) the re-use of treated wastewater effluent for beneficial purposes that would otherwise require the use of groundwater supplies, (ii) the sale of raw or untreated surface water for beneficial uses that would otherwise require the use of groundwater supplies, (iii) incentives to conserve water usage or implement water re-use, or (iv) other projects that confer a benefit to all Participants such that equity requires that the costs of same be shared among all Participants. The Parties acknowledge that this Contract is not intended, and shall not be deemed or construed, to authorize or permit the Authority to require Participant to undertake any Alternative Strategies nor to require Participant to take any water from the Authority other than Water. The Authority reserves the right to contract with Regulated Users and/or Participants relative to the implementation of Alternative Strategies for such purposes. If implemented by the Authority, Alternative Strategies shall be made available to all Participants, as reasonably practicable, on a uniform basis.

(d) The GRP Administrator shall make available (in digital format) one or more drafts of the proposed GRP for review by Participant. Participant agrees to review each draft and promptly provide any comments it may have to the GRP Administrator.

(e) The Authority may amend the proposed GRP, as it reasonably determines necessary or appropriate, to respond to comments it may receive from Participant, other Participants, the Conservation District or any state, federal, or other regulatory authority having jurisdiction, and it shall thereafter distribute (in digital format) the proposed GRP, as and if amended, to all Participants.

Section 2.03: Filing and Certification of the GRP. The Authority will use good faith and due diligence to (i) timely file a Declaration of Intent regarding the proposed GRP with the Conservation District, and Participant shall be included in such Declaration of Intent; (ii) timely file the proposed GRP for certification by the Conservation District to secure compliance with the Plan for the benefit of the Participants; and (iii) timely obtain approvals of the GRP in the time periods required by the Conservation District during the Contract Term so that the Participants, collectively, at all times during the Contract Term remain in compliance with the Plan and the groundwater reduction requirements imposed by the Conservation District. Upon certification of the GRP, the GRP Administrator shall provide written notice of same to the Participants and, if applicable, advise the Participants of any revisions to the GRP that were required in order to obtain such certification. The GRP Administrator shall provide a copy (in digital format) of the GRP, as certified, to the Participants if GRP Administrator determines that the latest copy provided under Section 2.02 hereof has been materially revised in order to obtain certification from the Conservation District.

Section 2.04: Amendment of the GRP. After certification of the GRP by the Conservation District, the Authority may amend the GRP only after providing all Participants with written notice of the proposed amendments, an explanation of the purpose of the proposed amendments, and a reasonable opportunity for the Participants to review and comment on the proposed amendments. The Authority may proceed with the proposed amendments, or may make modifications to same as it reasonably determines necessary or appropriate to respond to comments it may receive from Participant, other Participants, the Conservation District, or any state, federal, or other regulatory authority having jurisdiction, and it shall thereafter distribute (in digital format) the proposed GRP, as amended, to all Participants. If required, the Authority shall file the amended GRP with the Conservation District and seek certification of such amended GRP. Upon certification of the amended GRP, the GRP Administrator shall provide written notice of same to the Participants and, if applicable, advise the Participants of any revisions to the GRP that were required in order to obtain such certification. The GRP Administrator shall provide a copy (in digital format) of the amended GRP, as certified, to the Participants if the GRP Administrator determines that the latest copy provided under Sections 2.02, 2.03, or this Section 2.04, has been materially revised in order to obtain certification from the Conservation District.

Section 2.05: Implementation and Enforcement of GRP. The Authority covenants and agrees that it will diligently implement and enforce the GRP with the purpose that all Participants achieve and maintain compliance with the requirements of the Plan in a cost effective manner.

Section 2.06: Review Committee. (a) The GRP Administrator shall organize a Review Committee consisting of six (6) members for the purpose of advising the Authority as to the matters set forth in Section 2.10 hereof. The Review Committee shall be composed of the following:

(1) one member appointed by the Board of Trustees of The Woodlands Joint Powers Agency, or its successor;

(2) one member appointed by the City Council representing the City of Conroe;

(3) one member appointed pursuant to Section 2.07 hereof by Participants that are municipalities, exclusive of the City of Conroe;

(4) one member appointed pursuant to Section 2.07 hereof by Participants that are conservation and reclamation districts, other than members of The Woodlands Joint Powers Agency, or its successor, which are located primarily to the west of Interstate Highway 45;

(5) one member appointed pursuant to Section 2.07 hereof by Participants that are conservation and reclamation districts, other than members of The Woodlands Joint Powers Agency, or its successor, which are located primarily to the east of Interstate Highway 45; and

(6) one member appointed by the Conservation District who is an employee, director, or officer of a Private Well Owner.

(b) The members of the Review Committee shall be entitled to vote on all matters before the Review Committee. If the City of Conroe is not a Participant at the time the Review Committee is first organized, then the member to be appointed by the City Council for the City of Conroe shall be replaced by an at-large member appointed by the Conservation District. If the City of Conroe subsequently becomes a Participant, such at-large member shall be removed and replaced by a member appointed by the City of Conroe to serve for the remainder of the removed member's term.

(c) The Review Committee shall be constituted and organized by the GRP Administrator as soon as reasonably practicable. The Review Committee may be constituted and organized prior to the appointment of members pursuant to the provisions of Section 2.07 hereof, but no official actions of the Review Committee shall be taken or recognized prior to the initial appointment of the three (3) members identified in subdivisions (3) through (5) of subsection (a) hereof. In order to conduct the initial appointment of the members identified in subdivisions (3) through (5) of subsection (a) in an expedited fashion, the GRP Administrator is authorized to modify the dates described in Section 2.07 hereof.

Section 2.07: Appointment of Certain Review Committee Members by Vote. (a) The three (3) members identified in subdivisions (3) through (5) of Section 2.06(a) hereof shall be initially appointed, reappointed, or replaced pursuant to the provisions of this section.

(b) For each class of Participants to be represented by the Review Committee members identified in subdivisions (3) through (5) of Section 2.06(a) hereof, the GRP Administrator shall first determine the Participants comprising such class, and shall thereafter determine the number of votes each Participant within each such class may cast. The number of votes for a Participant is determined by dividing the total volume of water used by such Participant during the calendar year preceding the year in which the Review Committee member

is to be appointed, by the total volume of water used by all Participants within such Participant's class, multiplying that quotient by 100, and rounding that result to the nearest one-tenth. For purposes hereof, the GRP Administrator shall determine the amount of water used. The GRP Administrator shall provide the presiding officer of each Participant with written notice of the number of votes that may be cast by the governing body of such Participant.

(c) Pursuant to reasonable procedures established by the GRP Administrator, the governing body of a Participant by resolution may nominate one candidate for membership on the Review Committee representing such Participant's class. A Participant shall submit the name of its candidate, if any, to the GRP Administrator by July 1. If, by July 1, only one candidate's name is submitted by all Participants of the same class for such member position, the Review Committee may declare the unopposed candidate elected and may cancel the appointment procedures generally required by this section for that position. If more than one candidate's name is submitted for a position, before August 1, the GRP Administrator shall prepare a ballot listing all of the candidates for such position and shall provide copies to the presiding officer of the Participants of the class appointing such member.

(d) An individual may not be listed as a candidate on the ballot for more than one position. If a candidate is nominated for more than one position, the candidate must choose to be on the ballot for only one position.

(e) The governing body of each Participant shall cast its votes by resolution submitted to the GRP Administrator before November 1. In casting its ballot, the governing body of each Participant may vote for only one candidate on the ballot. For each member position being appointed, the GRP Administrator shall count the votes, and the Review Committee shall thereafter declare appointed the candidate who received the greatest number of votes for each member position. The GRP Administrator shall submit the results before December 1 to the governing body of each Participant.

(f) The GRP Administrator shall adopt all necessary procedural rules consistent with the provisions of this section.

Section 2.08: Terms of Office; Removal; Vacancies. (a) Members of the Review Committee shall serve staggered four-year terms. At the organizational meeting of the Review Committee, the members shall draw lots to select three (3) members that shall each initially serve a two-year term, and the remaining members shall each initially serve a four-year term. Members of the Review Committee may be reappointed without limitation.

(b) A member of the Review Committee may not be removed or recalled before the expiration of such member's term.

(c) A vacancy created by the death, incapacity, or resignation of a member of the Review Committee shall be filled by the appointing entity, entities, or person for the remaining term of such member, but if such member was appointed pursuant to the provisions of Section 2.07 hereof, the Review Committee shall promptly take all actions necessary to fill such vacancy

using the general procedures set forth in Section 2.07 hereof. In such event, the Review Committee is authorized to modify the dates described in Section 2.07 hereof.

Section 2.09: Compensation and Qualification. No member of the Review Committee may, while serving on the Review Committee, also serve on the governing body of the Conservation District or the Authority or be an employee of the Conservation District or the Authority. No member of the Review Committee shall receive compensation from the Authority for their service, nor shall membership on the Review Committee constitute a civil office of emolument. A member who is an employee of a Participant may be compensated by such Participant. A member who serves on the governing body of a Participant may be compensated by such Participant. Members of the Review Committee may: (i) be appointed without regard to the common law doctrines of conflict of interest or incompatibility of official duties; and/or (ii), be members of any governing bodies of any Participants, or employees thereof, except as provided in this Section 2.09.

Section 2.10: Activities of Review Committee. (a) The Review Committee shall be authorized to make recommendations to the GRP Administrator regarding the following matters pertaining to the GRP or the Project:

(1) conducting a review of (i) the initially proposed GRP, (ii) the then-current GRP not more frequently than annually, and (iii) any proposed amendments to the then-current GRP, including routing of the Project;

(2) the development of (i) policies regarding the implementation of Alternative Strategies, (ii) minimum standards for water conservation plans pursuant to Section 3.05 hereof, and (iii) minimum standards for drought contingency plans pursuant to Section 3.05 hereof;

(3) requests from Participants to make connections to the Project under Section 4.04 hereof;

(4) proposed mandatory connections to the Project under Section 4.05 hereof;

(5) requests from Participants to increase the Contract Quantity specified by the GRP Administrator under Section 4.09(b) hereof;

(6) participating in progress reviews with respect to Project infrastructure at the preliminary design and final design stages and making related recommendations to the GRP Administrator;

(7) the construction, maintenance, and operation of the Project;

(8) fees, rates, or charges adopted or to be adopted by the Authority under the Rate Order or pursuant to this Contract;

(9) the annual budget to be adopted by the Authority, pursuant to Section 9.03(a)(1)(i) hereof, and any amendments thereto;

(10) the terms of the Bonds pertaining to the Project or the GRP that are to be issued by the Authority;

(11) breaking a tie in the selection of a mediator, as provided in Section 11.03 hereof; and

(12) other matters pertaining to the GRP and its implementation that the GRP Administrator and/or the Authority may request from time to time;

provided, however, that the Review Committee shall not be authorized to review or make recommendations regarding (i) the hiring, engagement, compensation, supervision, management, discipline, discharge, or termination of any employees or third-party consultants, or contractors not directly performing services related to the Project and/or the GRP, (ii) the organizational structure of the Authority and the general and administrative services provided by the Authority in connection with the Project and/or the GRP, including accounting procedures or cost allocation methods utilized by the Authority, except to the extent that the costs for the Authority's general and administrative services are a component of the fees, rates, or charges adopted or to be adopted by the Authority under the Rate Order, or are a component of the annual budget to be adopted pursuant to Section 9.03(a)(1)(i) hereof, or (iii) the acquisition of real property or interests in real property in connection with the Project. Nothing herein shall be deemed or construed to limit the Review Committee's consideration, discussions or recommendations to the GRP Administrator regarding any other matters pertaining the GRP or the Project that are not listed in items (1) through (12) above; provided, however, that any recommendations on such other matters shall not be subject to or serve to initiate the procedures described in Section 2.11 hereof.

(b) The Review Committee shall adopt procedures not inconsistent with the provisions of this Contract applicable to the conduct of meetings and the procedures and the activities of the Review Committee. If any member should be absent at a meeting of the Review Committee, or in the event of a failure to appoint a member or a vacancy of a member on the Review Committee, a majority of the members of the Review Committee present shall be sufficient and required for any vote to be effective or to transact business except as provided in Section 2.12 hereof.

(c) The Review Committee shall be subject to the requirements of Chapters 551 (Open Meetings Act) and 552 (Public Information Act) of the Texas Government Code.

(d) The GRP Administrator shall provide necessary administrative support for the Review Committee including notices for meetings, meeting facilities, and clerical assistance for meeting notes, minutes, correspondence, and filing. The Authority shall provide the Review Committee with prompt access to, and a reasonable number of copies of, records, reports, and data pertaining to the Project, the GRP, and/or any fees, rates, and charges imposed or to be

imposed under this Contract which are not proprietary, confidential, or otherwise exempted from disclosure under Chapter 552, Texas Government Code.

(e) The Authority shall, as an expense of the GRP, maintain directors and officers liability insurance coverage with a responsible insurance company or companies for the benefit of the members of the Review Committee in an amount not less than the amount of insurance provided for members of the Board of Directors of the Authority. To the extent allowed by such insurance coverage, the Authority shall defend and indemnify the members of the Review Committee for any losses, damages, claims, expenses, costs, or judgments, including reasonable attorneys fee and court costs, incurred by any of them as a result of or in connection with their good faith discharge of their duties on the Review Committee. All reasonable costs and expenses of the Review Committee shall be costs of the GRP and will be paid directly by the Authority.

Section 2.11: Coordination with Review Committee. (a) Recommendations of the Review Committee made to the GRP Administrator or Board of Directors of the Authority are advisory only and shall not be binding upon the GRP Administrator and/or the Authority.

(b) Except in the event of an Emergency Condition, as reasonably determined by the GRP Administrator, the GRP Administrator and Authority, prior to taking any action on any matter identified in Section 2.10(a)(1) through (12) hereof, shall present the matter to the Review Committee, according to the procedure set forth herein, to review and comment on the matter. In the event of an Emergency Condition, the GRP Administrator or Authority may take any reasonable action deemed appropriate by them without first presenting the matter to the Review Committee. In such event, the GRP Administrator shall notify the Review Committee members in writing of the nature of the Emergency Condition and the action taken by the Authority related thereto within three (3) days after the action is taken.

(c) The Review Committee shall meet no more often than once per month on a date that is at least one week prior to the regular monthly meeting of the Board of Directors of the Authority for that month, at which time the Review Committee will conduct its business, including considering recommendations made by the GRP Administrator or making recommendations to the GRP Administrator for presentation to the Board of Directors of the Authority. The Review Committee may, upon formal request to and approval by the GRP Administrator, meet less often than once per month. At least one week prior to each Review Committee meeting, the GRP Administrator shall: (i) provide the Review Committee with written recommendations of the GRP Administrator regarding any matters on which the GRP Administrator or the Authority intend to take action during that month; (ii) make available reasonably necessary information, records, data, and reports to enable the Review Committee to analyze same or to analyze any recommendations made or to be made by the Review Committee; and (iii) identify any recommended actions which, if not approved or rejected by the Review Committee at such meeting, are likely to result in an Emergency Condition and the reasons therefor.

(d) If the Review Committee approves the GRP Administrator's recommendation, the matter then goes before the GRP Administrator or the Board of Directors of the Authority, as

appropriate, for action. If the Review Committee is unable or unwilling to approve or reject the GRP Administrator's recommendation, the Review Committee may request additional information, records, data, or reports to aid its evaluation, and will consider the matter again at its next monthly meeting. If the Review Committee then approves the GRP Administrator's recommendation, or is still unable or unwilling to approve or reject the GRP Administrator's recommendation, the matter then goes before the GRP Administrator or the Board of Directors of the Authority, as appropriate, for action. Notwithstanding the foregoing, the Review Committee may not defer to its next monthly meeting any action regarding the award of a construction contract, the payment of construction contract pay requests, or the issuance of change orders to construction contracts. If the GRP Administrator approves a recommendation of the Review Committee made pursuant to Section 2.10(a) hereof, the matter then goes before the GRP Administrator or the Board of Directors of the Authority, as appropriate, for final action.

(e) If the Review Committee rejects the recommendation of the GRP Administrator, or makes its own a recommendation that is rejected by the GRP Administrator, the Board of Directors of the Authority shall reasonably consider as soon as practicable, but not later than thirty (30) days thereafter, the Review Committee's rejection or its recommendation, as appropriate. The Board of Directors of the Authority shall be obligated to give reasonable consideration to all recommendations received from the Review Committee. If the Board of Directors of the Authority rejects a recommendation of the Review Committee, approves a recommendation of the GRP Administrator that was rejected by the Review Committee, or overrules a recommendation of the GRP Administrator that was approved by the Review Committee, the Board of Directors of the Authority shall prepare and deliver a written explanation to the members of the Review Committee and the reasons for the action of the Board of Directors of the Authority within fifteen (15) days of the date the Board of Directors of the Authority makes a final determination; and (ii) provide such written explanation to all Participants within the 15-day period by regular mail or by e-mail (if available), or by posting same within said 15-day period on the Authority's website. In no event is the GRP Administrator authorized to take action contrary to a recommendation of the Review Committee made pursuant to Section 2.10(a) hereof unless the GRP Administrator has submitted the matter to the Board of Directors of the Authority and the Board of Directors of the Authority has rejected the Review Committee's recommendation pursuant to this subsection (e).

Section 2.12: Review of Fees, Rates, and Charges. If requested by resolution or other written instrument adopted by an affirmative vote of a majority (but not less than three (3) members) of the Review Committee, the Board of Directors of the Authority shall engage an independent rate analyst to review and prepare a report regarding the fees, rates and charges adopted or to be adopted by the Authority pursuant to this Contract; provided, however, that such review shall not (i) be undertaken more frequently than annually, or (ii) unless authorized in writing by the Authority, encompass a review of the adopted and published rates of the Authority for the sale or reservation of raw water.

ARTICLE III

Participant's Permits and Water Demands; Co-Permitting; Conversion Credits; Water Conservation

Section 3.01: Participant's Permits, Contracts, and Service Area. (a) Participant represents that all of Participant's current Well permits issued by the Conservation District, and any applications pending with the Conservation District, are listed and described in **Exhibit C** attached hereto.

(b) Upon request by the GRP Administrator, Participant shall timely provide the Authority a copy of any contract entered into by Participant whereby (i) Participant has the right to purchase water from another person or entity that is not a Participant, including emergency water supply contracts; or (ii) Participant has the obligation to sell or deliver water or capacity in Participant's System to another person or entity, whether a Participant or a non-Participant.

(c) Participant agrees and acknowledges that the service area map attached hereto as **Exhibit B** depicts the geographic area served by Participant with reasonable accuracy, including any geographic area currently served under any contract entered into by Participant whereby Participant has the obligation to sell or deliver water (except for emergency water supply) or capacity in Participant's System to another person or entity, whether a Participant or a non-Participant. Participant shall amend such service area map, pursuant to the procedures set forth in Section 4.13 hereof, as necessary to keep such service area map accurate throughout the Contract Term.

Section 3.02: Participant's Historical Use and Demand Projections. (a) Participant represents that the annual amount of groundwater that has been pumped from each of its Wells for each of the past five years is as set forth in the table attached hereto as **Exhibit D**.

(b) Participant represents that its good faith projections of its total water demands through the year 2045 are set forth in the table attached hereto as **Exhibit E**. Participant agrees and acknowledges that such projections make reasonable allowance for any water that (i) Participant may purchase from another person or entity, and (ii) Participant has the obligation to sell or deliver to another person or entity. The Authority understands and agrees that such projections are merely estimates based on assumptions that will likely change over time and Participant does not warrant the accuracy thereof. Participant shall provide the Authority updated projections from time to time upon request by the GRP Administrator, or as Participant deems necessary from time to time in the absence of such a request by the GRP Administrator, and the GRP Administrator shall periodically review such updated projections for the purpose of establishing revisions to the Contract Quantity and/or the GRP as provided herein.

Section 3.03: Co-Permitting. Participant agrees to allow co-permitting of its Wells if co-permitting is required by the Plan or any other rules or regulations of the Conservation District. If co-permitting is undertaken by the Authority, the GRP Administrator shall prepare and submit co-permitting documents, if and as required, to the Conservation District, including renewal documentation, and the costs therefor shall be considered a cost of the Project.

Participant agrees to provide the GRP Administrator such data and information as may be necessary for the Authority to prepare and file such documents. The GRP Administrator shall provide a copy of the co-permit and any renewals to Participant. Notwithstanding any co-permitting pursuant to the foregoing, Participant shall maintain ownership of its Wells and operational responsibility therefor, and, subject to the terms of this Contract, the right to pump groundwater therefrom in accordance with such co-permit. In the event the Conservation District adopts rules or regulations requiring consolidated Well permits, the Authority shall develop policies and procedures to accomplish same in coordination with the Review Committee and by providing Participants the ability to review and comment upon such policies and procedures.

Section 3.04: Conversion Credits. Participant agrees that to the extent it earns any surface water conversion credits, groundwater reduction credits, or similar credits, as and if offered and issued by the Conservation District, that directly result from the delivery of Water to Participant or directly result from an Alternative Strategy project funded with Project revenues, such credits shall be transferred to the Authority for the benefit of all Participants at no cost. Notwithstanding any provision of this Contract, any Alternative Strategies, or brackish groundwater production pursuant to Section 6.04(j) hereof, implemented or constructed by Participant without use of Project revenues, which result in surface water conversion credits, groundwater reduction credits, or similar credits, as and if offered and issued by the Conservation District, are not required to be transferred to the Authority hereunder and may be used, transferred, or otherwise disposed of by Participant in Participant's sole discretion. The Authority reserves the right to revise or update Participant's projected groundwater requirements under the GRP from time to time, including revisions or updates necessary to address Participant's modifications to its service area, Participant's groundwater conservation efforts, or Participant's implementation of Alternative Strategies or brackish groundwater production pursuant to Section 6.04(j). In no event shall the Authority be obligated to make payment to Participant to so revise or update Participant's projected groundwater requirements under the GRP.

Section 3.05: Water Conservation; Drought Contingency. Participant agrees to adopt and enforce a water conservation plan meeting the applicable minimum requirements of the Conservation District and the TCEQ (30 T.A.C. §§ 288.1-288.7, or any successor rules), as well as a drought contingency plan meeting the applicable minimum requirements of the Conservation District and the TCEQ (30 T.A.C. §§ 288.20-288.22, or any successor rules). Participant may, but shall not be obligated, to include provisions in such plans that exceed or are more stringent than the minimum requirements described in the preceding sentence. Such plans must be completed and filed with the GRP Administrator at such times as may be reasonably required by the GRP Administrator, without regard to whether Participant will connect to the Project. In addition, after review by the Review Committee, the Authority may require Participant to adopt and enforce minimum requirements adopted by the Authority for such water conservation plans and drought contingency plans but only if: (i) such minimum requirements apply on an equal and uniform basis to all Participants and to all entities located in whole or in part in Montgomery County to which the Authority supplies wholesale groundwater or Water; and (ii) the Authority has the legal right to impose such minimum requirements on all such entities to which the Authority supplies wholesale groundwater or Water.

ARTICLE IV

The Project; Connection to the Project;
On-Site Facilities; Quantity and Quality of Water

Section 4.01: Development of the Project; Title to Project. As between the Parties, the Authority shall be responsible for the design, permitting, financing, construction, operation, and maintenance of the Project, and shall have sole and exclusive title to the Project at all times. The Authority agrees that it will follow applicable laws, rules, and procedures in letting contracts for the construction and delivery of the Project. Unless Participant, at its discretion, agrees otherwise by separate instrument, in no event shall the Authority be allowed to: (i) use Participant's System to transport, store, pump, or pressurize Water (or any other type of water) delivered, or to be delivered, by the Authority; or (ii) require Participant to deliver Water (or any other type of water) to any person or entity.

Section 4.02: Design, Permitting, and Construction of the Project. (a) The Project shall be designed, permitted, and constructed, in phases, to achieve and maintain compliance with the various groundwater reduction requirements and deadlines of the Plan and to further the purposes of the GRP, as described in Section 2.01 hereof. In order to achieve compliance with the Plan in an efficient and cost effective manner, the Project may be designed, permitted, and constructed in such a manner that Water is supplied only to certain Participants, but in sufficient quantities to achieve overall compliance among all Participants. The design, permitting, and construction of the Project, as well as any determination as to which Participants may or shall connect to the Project under Sections 4.04 and 4.05 hereof, shall be undertaken in a manner that, to the extent practicable, gives consideration to (i) minimizing the overall costs of the Project, (ii) equalizing the costs for Participants to provide retail water services, including investment in groundwater facilities, (iii) avoiding conferring a special benefit or imposing a special burden on any particular Participant, group of Participants, or portion of Montgomery County, based upon proximity to, or the geographic location of, the Project, (iv) the need for Water due to then-current or anticipated water quality or quantity difficulties in groundwater supplies, and (v) any other factors deemed appropriate by the Authority and/or the GRP Administrator consistent with the objectives of the GRP. Notwithstanding the foregoing, the Authority reserves the right to reasonably determine to design, permit, and construct the Project in such a manner that Water is supplied to Participants with current or anticipated groundwater quality or quantity issues, even if other designs could achieve overall compliance with the Plan at a lower cost. Nothing herein shall be deemed or construed to permit or require the Authority to utilize GRP or Project funds for extensions, enlargements, improvements, repairs, modifications, or replacements to Participant's System, other than with respect to On-Site Facilities or as reasonably determined necessary by the GRP Administrator to deliver the Contract Quantity. A conceptual drawing of the Project is attached hereto as **Exhibit F** for informational purposes only. In a manner consistent with this Contract, the Project is subject to revision by the Authority, in whole or in part, at any time, and **Exhibit F** hereto shall not be construed to obligate the Authority to design, permit, construct, operate, or maintain the Project in accordance with same.

(b) To the extent that all or any portion of the Project will be constructed within or across property, road rights-of-way, or public utility easements owned, controlled or administered by Participant, or easements filed of record in favor of Participant, the Authority shall, prior to commencement of construction, submit plans therefor to Participant for review and approval, which approval shall not be unreasonably withheld or subjected to unreasonable review standards. Participant agrees that comments to such plans shall be provided to the Authority within thirty (30) days following submittal, or within ten (10) days following any re-submittal. After completion of construction of such portion of the Project, the Authority shall promptly notify the Participant of such completion, provide the Participant with record drawings of such portion of the Project, and request the inspection and approval by the Participant of any such portion of the Project, which approval will not be unreasonably withheld or delayed. In addition, the Authority shall comply with all of Participant's generally applicable requirements regarding construction, operation, or maintenance within Participant's jurisdiction, including building permit and traffic control requirements. If and to the extent Participant has jurisdiction with respect to the review or approval of plans, or the issuance of permits, related to the design, permitting, or construction of any other portion of the Project, no such plan review or approval or permits shall be required; provided, however, that the Authority shall nevertheless (i) consult with Participant prior to the commencement of construction of such other portion of the Project, and (ii) provide Participant with record drawings with respect to such other portion of the Project promptly following the completion of construction of same.

(c) If the Authority or its contractors or employees damage any streets, buildings, lights, trees, landscaping, irrigation lines, water lines, sanitary sewer lines, storm sewer lines, tanks, canals, or other facilities or structures owned, controlled, or operated by Participant (the "Participant Facilities"), then the Authority, as a Project cost and expense, will be responsible for the repair or replacement of the damaged Participant Facilities as nearly as practicable their prior condition, and the Authority shall immediately notify Participant of such damage. Such cost and expense shall be considered a Project cost and will be a responsibility of the separate operating division to be created and established pursuant to Section 9.03(a)(1) hereof, and not an obligation or responsibility of any other operating division of the Authority. The Authority will require its construction contractors to likewise be responsible for such costs and to maintain adequate liability insurance to cover such costs, but Participant shall (in addition to all other available remedies) have recourse against the Authority, as herein provided, and need not seek recourse from such contractors. The damaged Participant Facilities will be repaired or replaced by Participant or, if authorized by Participant, by the Authority's contractors or employees. If the Authority, or its contractors, shall make written request to Participant to locate and mark underground Participant Facilities prior to commencement of construction and Participant shall fail or refuse to accurately do so within five (5) business days of receipt of said request, then, to the extent any damage to Participant Facilities was caused as a result of such failure or refusal, no recourse shall be had against the Authority or its contractors under this subsection.

Section 4.03: Easements. All easements affecting real property owned by Participant which are reasonably required by the Authority in connection with the Project shall be granted by Participant to the Authority, in a form substantially the same as that attached hereto as **Exhibit G**, unless otherwise approved in writing by the GRP Administrator, within forty-five (45) days after receipt of a written request therefor and without cost to the Authority. The

Authority agrees to confine any such required easement to a location reasonably acceptable to Participant and to use reasonable diligence to minimize impact of the easement and the Authority's use of the easement upon Participant's facilities and operations. Any relocation or modification of Participant's facilities within the easements to accommodate the Project shall be at the cost and expense of the Authority, borne as a Project cost, and the plans and specifications for same shall be subject to Participant's review and approval pursuant to the provisions of Section 4.02(b) hereof. Contemporaneous with its delivery of any such easements, Participant shall provide the Authority with the written consent, in a form acceptable to the GRP Administrator, of any lienholders having an interest in the property affected by such easements. Except as provided in this Section 4.03, the Authority shall obtain all other interests in property reasonably required for the Project.

Section 4.04: Non-Mandatory Connection to Project. Participant may submit a written request that the Authority supply Water from the Project at an earlier date than the projected date on or by which Participant would otherwise be required to connect to the Project under Section 4.05 hereof. The Authority may approve or deny any such request, in whole or in part, or upon terms and conditions it reasonably deems favorable and appropriate and consistent with the purposes of the GRP and the obligations of the Authority to all Participants, and shall enter into a written supplemental agreement with Participant if such request is approved in whole, in part, or subject to further terms and conditions. The agreement shall specify the respective financial, legal, and engineering responsibilities of the Parties relative to any necessary facility design, permitting, and construction, including additions or modifications to the Project, and shall establish minimum quantities and maximum flow rates for Water to be so provided, in addition to any other matters the Parties may address therein.

Section 4.05: Mandatory Connection to Project. (a) The GRP Administrator shall decide when, if ever, Participant must connect to the Project; provided, however, the GRP Administrator shall not, without Participant's consent, require Participant to take Water prior to September 1, 2014. The Authority's determination in the preceding sentence will be made based upon factors (i) through (v) described in Section 4.02(a) hereof.

(b) When the GRP Administrator determines that Participant must connect to the Project, the GRP Administrator will consult with Participant regarding (i) the Contract Quantity the Participant must take from the Project, (ii) the Participant System Site where such Contract Quantity will be delivered by the Project, (iii) the conditions and standards applicable to the connection of Participant's System to the Project, (iv) the preliminary routing of any Project facilities to be constructed to deliver the Contract Quantity to Participant, and (v) a preliminary estimate of dates relative to the completion of construction of any Project facilities necessary to deliver the Contract Quantity to Participant. After due consideration of any comments provided by Participant as part of such consultation, the GRP Administrator will provide Participant written notice specifying therein the Contract Quantity, the Point of Delivery, and the conditions and the standards applicable to the connection of Participant's System to the Project; provided, however, that no such notice shall take effect prior to March 1, 2013, regardless of the date of receipt of such notice. Participant shall connect to the Project at the specified Point of Delivery in accordance with such conditions and standards, and shall obtain all necessary approvals by the Authority under Section 4.07 hereof, within 18 months after the later of March 1, 2013, or the

date of receipt of such notice. The Project shall be designed, permitted, and constructed in a manner such that the Point of Delivery shall be located upon the Participant System Site and within an easement to be conveyed pursuant to Section 4.03 hereof. The Authority reserves the right to enter into agreements with Participant to supplement this Contract, if and as the Authority deems circumstances so require, in order to make firm commitments to Participant regarding the Contract Quantity Participant must take from the Project, the particular Participant System Site where such Contract Quantity will be delivered, and other details related to the delivery of Water to the Participant System Site.

(c) The Authority may not impose or collect a capital impact fee, capital recovery fee, tap fee, or any other fee of a similar kind or character, against or from a Participant required to connect to the Project under this Section 4.05.

Section 4.06: On-Site Facilities. (a) Unless otherwise provided by separate written agreement between the Parties, Participant shall install the following facilities ("On-Site Facilities") at the Participant System Site that will receive Water (or with respect to measuring equipment for imported water or for disinfection treatment equipment, at the location described below):

(1) measuring equipment at the Participant System Site properly sized and able to measure the amount of groundwater withdrawn from Participant's Wells, and measuring equipment at the location of importation properly sized to measure the amount of water imported by Participant, all within the accuracy tolerances specified in Section 5.03 hereof ("Participant Meters");

(2) monitoring equipment on Participant's ground storage tank, Wells, booster pumps, and any other receiving facilities designated by the GRP Administrator ("Monitoring Equipment");

(3) air gap to prevent backflow located at Participant's ground storage tank, configured such that Water enters the top of the ground storage tank and there are no connections on the water transmission main between the Point of Delivery and the ground storage tank;

(4) additional storage, if reasonably determined by the GRP Administrator to be necessary to accommodate the delivery of Water to Participant;

(5) flow restriction equipment;

(6) disinfection treatment equipment at all Participant water plant sites; and

(7) electrical equipment of a kind, character, and nature, as reasonably specified by the GRP Administrator in order to supply electricity to such portion of the Project that serves Participant and is located on the Participant System Site.

(b) Notwithstanding anything to the contrary in this Contract (i) in light of the cost to the Project and minimal benefit associated with installing Participant Meters for measuring water imported from another Participant, Participants are not required to install such meters; (ii) Participant Meters for measuring water imported from a non-Participant shall be installed and placed in service by Participant no later than six (6) months after the Effective Date, except to the extent such requirement is waived by the GRP Administrator with respect to emergency water supply only; and (iii) except as provided in the preceding clauses (i) and (ii), all other Participant Meters shall be installed and placed in service by Participant no later than sixty (60) days from the Effective Date. . Specifications for the Participant Meters and the location for all points of measurement of groundwater withdrawal from Participant's Wells, or imported by Participant, must be approved in writing by the GRP Administrator, which approval will not be unreasonably withheld or delayed; provided, however, that the GRP Administrator may by written agreement allow Participant up to six (6) months from the Effective Date to install and place in service such Participant Meters meeting the GRP Administrator's specifications at all required points of measurement upon terms and conditions specified therein. Such agreement shall include terms and conditions, not inconsistent with this Contract, related to Participant's calculation of the amount of groundwater withdrawn from its Wells, or imported, for purposes of making payment of applicable fees, rates, and charges to the Authority under this Contract. After inspection and approval of the Participant Meters and the Monitoring Equipment pursuant to Section 4.07(a) hereof, the Authority shall have the right to cause Participant to replace, upgrade, or otherwise modify such Participant Meters and/or Monitoring Equipment at any time upon written request, it being understood that metering and monitoring equipment and related data collection methods may advance over time such that the operations and administration of the Project may be enhanced thereby; provided, however, that Participant's direct cost and expense for same shall be timely reimbursed by the Authority and treated as an expense of the Project.

(c) Participant shall own, operate, and maintain the On-Site Facilities at no cost and expense to the Authority. Design, permitting, construction, and other initial capital costs associated with On-Site Facilities and incurred by Participant shall be reimbursable by the Authority to the extent and upon the conditions set forth in Section 4.08 hereof.

Section 4.07: Milestones; Approvals; Inspections of Participant's System. (a) In order to ensure that On-Site Facilities are timely completed if Participant is to connect to the Project under Section 4.05(a) hereof, the GRP Administrator shall be authorized to adopt reasonable milestones concerning the dates by which (i) preliminary planning of the On-Site Facilities shall be completed, (ii) necessary permit applications for the On-Site Facilities shall be filed, (iii) financing or funds for the On-Site Facilities shall be secured, (iv) final design drawings for the On-Site Facilities shall be submitted to the GRP Administrator for review and approval, (v) construction of the On-Site Facilities shall be commenced and completed, (vi) completed On-Site Facilities shall be inspected and approved by the GRP Administrator, (vii) the connection of the Project to the On-Site Facilities shall be made and tested, and (viii) any other relevant milestones established by the GRP Administrator consistent with the GRP, shall be met. Such milestones may be established with respect to all On-Site Facilities or with respect to any component thereof. The Rules, the Rate Order, or any separate written order of the Authority

may establish penalties for failure to timely meet such milestones, if deemed reasonably necessary and proper by the Authority; provided, however, that such penalties shall not be imposed to the extent that the Authority causes or contributes to Participant's failure to timely meet such milestones.

(b) In order to ensure that On-Site Facilities comply with applicable requirements and specifications established by the GRP Administrator, Participant must obtain written approval by the GRP Administrator of the plans and specifications for any On-Site Facilities prior to commencement of construction. The GRP Administrator's approval will not be unreasonably withheld or subjected to unreasonable review standards. The GRP Administrator shall be obligated to review and provide comments on design plans and specifications within thirty (30) days following submittal, or within ten (10) days following any re-submittal. After completion of construction of the On-Site Facilities, Participant shall notify the GRP Administrator of such completion, provide the GRP Administrator with record drawings of the On-Site Facilities, and request the inspection and approval by the GRP Administrator of any such On-Site Facilities, which approval shall not be unreasonably delayed and shall be given if the On-Site Facilities (or applicable portion thereof) have been constructed substantially in accordance with the plans and specifications reviewed and approved under Section 4.07(b) hereof. The GRP Administrator may approve On-Site Facilities constructed or installed prior to the Effective Date if such facilities reasonably conform to the GRP Administrator's requirements.

(c) Participant shall be in breach of this Contract if it fails to connect to the Project by the time set forth in the notice provided under Section 4.05(b) hereof, including the failure to construct On-Site Facilities in a manner that reasonably complies with the requirements of the GRP Administrator and to obtain timely approval of same by the GRP Administrator. The Authority shall not be construed to be in breach of this Contact for refusing to approve On-Site Facilities that have not been constructed substantially in accordance with plans and specifications for same reviewed and approved under Section 4.07(b) hereof.

(d) If Participant has connected to the Project, or has received a notice to connect to the Project from the GRP Administrator under Section 4.05 hereof, it is specifically understood and agreed that in order to protect the Project, Participant's System shall be designed, permitted, constructed, operated, and maintained to comply with the rules promulgated by the TCEQ, the Rules of the Authority, and the requirements of the GRP Administrator regarding backflow prevention and cross connections. The Authority shall have the right to conduct inspections from time to time to determine that no violation of these requirements exists in Participant's System which would or might adversely affect the Project, and to the extent an easement providing a right of ingress and egress therefor has not been conveyed to the Authority in accordance with the provisions of Section 4.03 hereof, the Authority shall have the right of ingress and egress in, upon, under, and over any and all land, easements and rights-of-way of Participant upon which are constructed any facilities of the Project or Participant's System during the Contract Term. Should a condition in violation of these requirements be discovered, Participant shall promptly cure same. Failure to promptly cure such a violation shall be cause for the Authority, based on its reasonable determination, to (i) immediately discontinue providing Water to Participant, or (ii) cure such violation and charge Participant its actual costs of such cure.

(e) In no event shall review or approval by the GRP Administrator or the Authority be required with respect to components of Participant's System other than the On-Site Facilities.

Section 4.08: Reimbursement for On-Site Facilities. The Authority agrees to reimburse reasonable and necessary legal, permitting, engineering, and other costs incurred by Participant to design, construct, and complete On-Site Facilities, subject to the provisions of this section. The Authority will not reimburse Participant for costs not specifically associated with On-Site Facilities, such as replacement of aged or worn equipment, maintenance/painting of existing equipment or piping, or work related to other components of Participant's System other than the On-Site Facilities, unless the GRP Administrator reasonably determines that reimbursement of such costs is cost effective and beneficial to the Participants in achieving or maintaining compliance with the Plan. In connection with the GRP Administrator's review of Participant's plans and specifications for On-Site Facilities pursuant to Section 4.07(b) hereof, the GRP Administrator shall advise Participant if any of the proposed work and related facilities, improvements, repairs, modifications, or replacements are not subject to reimbursement by the Authority under the foregoing limitations. Participant agrees that it will follow the procedures generally applicable to Participant in letting a contract for the construction of On-Site Facilities, or if none are applicable, the procedures generally applicable to the Authority in letting construction contracts. Within a reasonable time after the date the GRP Administrator approves the completion of such On-Site Facilities pursuant to Section 4.07(b) hereof, but not more than one (1) year after such date, the Authority shall reimburse Participant for eligible costs incurred by Participant to design, construct, and complete such approved On-Site Facilities; provided, however, that reimbursable legal, engineering, and other non-construction costs shall not exceed thirty percent (30%) of the total construction costs for the On-Site Facilities unless specifically agreed to by the GRP Administrator. The Authority may adopt Rules not inconsistent with this section to provide further details for such reimbursement procedures and standards.

Section 4.09: Contract Quantity. (a) If Participant is required to connect to the Project under Section 4.05 hereof, then Participant shall take Water at the Point of Delivery in accordance with the requirements of this Contract and when directed by written notice from the GRP Administrator, but, unless Participant consents otherwise, not before September 1, 2014. The GRP Administrator shall determine and notify Participant in writing as to the maximum amount of Water that Participant can receive from the Project, and the minimum amount of Water that Participant must take from the Project, on a daily, hourly, peak or instantaneous basis (said minimum amount being referred to herein as the "Contract Quantity", as same may be amended from time to time), based on the capacity of the Project and the requirements of the GRP; provided, however, that Participant shall not be required to take Water from the Project at any Participant System Site in excess of an amount equal to ninety percent (90%) of the average daily amount of groundwater (except for any brackish groundwater produced pursuant to Section 6.04(j) hereof) supplied from any such site during the low-demand period preceding the date of calculation of the Contract Quantity. For such purposes, the "low-demand period" shall be the period of three (3) consecutive calendar months in the two preceding calendar years during which the least amount of water was supplied from such site under normal operating conditions.

(b) The Contract Quantity may be increased by the GRP Administrator from time to time, subject to the foregoing parameters, but the Contract Quantity shall not be reduced by the GRP Administrator without the written consent of Participant. In connection with the increase of the Contract Quantity, the GRP Administrator may reasonably determine that additional On-Site Facilities must be designed, permitted and constructed by Participant, including additional storage capacity to receive the increased Contract Quantity. The GRP Administrator shall provide the Participant with a reasonable amount of time to design, permit and construct any such additional On-Site Facilities. The provisions of Sections 4.07 and 4.08 hereof shall generally apply to such additional On-Site Facilities. Participant may submit a written request to the GRP Administrator for an increase in the Contract Quantity. The Authority may approve or deny any such request, in whole or in part, or upon terms and conditions it reasonably deems favorable and appropriate and consistent with the purposes of the GRP and the obligations of the Authority to all Participants.

(c) If Participant connects to the Project, then Participant is not guaranteed hereunder any specific quantity of Water due to a *force majeure* event (as defined in Section 10.01(b) hereof) when the Project's or the Authority's supply is interrupted, limited or insufficient, or when the Project's or the Authority's equipment may become inoperative due to mechanical failure, breakage, failure of power supply, or scheduled maintenance and repairs, nor is Participant guaranteed that Water will be supplied at a specified pressure under any circumstances. The Authority shall provide Participant notice of such scheduled maintenance and repairs at least ten (10) full business days in advance, which notice must specify the anticipated duration of such maintenance and repairs.

(d) The Authority shall be authorized to adopt and enforce penalties under the Rate Order, or under separate written order, for Participant's failure to so take the Contract Quantity.

(e) It is the intent of the Parties that the Contract Quantity shall be taken in quantities and/or at rates of flow specified by the GRP Administrator pursuant to this Section 4.09 and that, as between the Parties, the Participant shall be solely responsible for meeting any and all water demands in excess of such amounts and/or rates of flow with conservation, storage, groundwater supplies, or other sources of supply, and, subject to any other terms and conditions set forth in this Contract, Participant is hereby authorized and permitted to take such actions as may be necessary or convenient to discharge such responsibilities. Participant, and not Authority, has the right and responsibility to finance, design, construct, operate, and maintain some or all of its Wells such that Participant may adequately supply water for its purposes, over and above the Contract Quantity or when the Authority is not obligated to provide the Contract Quantity to Participant under the terms of this Contract. Further, Participant, and not Authority, shall be responsible to determine when, if ever, to take one or more of its Wells out of operation.

(f) THIS CONTRACT IS INTENDED ONLY TO ENSURE PARTICIPANT'S COMPLIANCE WITH THE PLAN, AND UNLESS AND UNTIL PARTICIPANT CONNECTS TO THE PROJECT UNDER SECTION 4.04 OR 4.05 HEREOF, THIS CONTRACT SHALL NOT BE DEEMED OR CONSTRUED AS A GUARANTEE OR ASSURANCE TO PARTICIPANT OF A SPECIFIC QUANTITY OF WATER FROM THE AUTHORITY, THE PROJECT, OR ANY OTHER SOURCE, EXCEPT AND TO THE

EXTENT EXPRESSLY PROVIDED HEREIN. THE AUTHORITY, ACCORDING TO ITS REASONABLE DETERMINATION UNDER THIS CONTRACT, SHALL DECIDE THE DATE, IF EVER, UPON WHICH THE AUTHORITY SHALL COMMENCE SUPPLY OF WATER TO PARTICIPANT FOR THE PURPOSE OF IMPLEMENTING THE GRP.

Section 4.10: Warranties Regarding Water. (a) IF PARTICIPANT IS PERMITTED OR REQUIRED TO CONNECT TO THE PROJECT UNDER SECTIONS 4.04 OR 4.05 HEREOF, THEN, AFTER SUCH CONNECTION IS MADE, AND SUBJECT TO THE REMAINING PROVISIONS OF THIS SECTION 4.10, THE AUTHORITY SHALL PROVIDE PARTICIPANT WITH WATER AT THE DESIGNATED POINT OF DELIVERY IN AN AMOUNT AT LEAST EQUAL TO THE CONTRACT QUANTITY AND OF A QUALITY THAT MEETS ALL APPLICABLE TEXAS AND FEDERAL REGULATIONS REGARDING WATER QUALITY, INCLUDING THE SAFE DRINKING WATER ACT. FURTHER, IF PARTICIPANT IS PERMITTED OR REQUIRED TO CONNECT TO THE PROJECT UNDER SECTIONS 4.04 OR 4.05 HEREOF, THEN THE AUTHORITY SHALL PROVIDE THE PARTICIPANT WITH ALL INFORMATION CONCERNING THE QUALITY OF SUCH WATER AS MAY BE REQUIRED TO BE DISCLOSED UNDER APPLICABLE TEXAS AND FEDERAL REGULATIONS, AND SUCH FURTHER INFORMATION REGARDING THE QUALITY OR CHARACTER OF WATER AS THE AUTHORITY MAY HAVE AND THE PARTICIPANT MAY REQUEST FROM TIME TO TIME.

(b) EXCEPT AS PROVIDED IN THIS SECTION 4.10, THE AUTHORITY MAKES NO WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE QUALITY, QUANTITY, OR DELIVERY PRESSURE OF TREATED WATER FROM THE PROJECT, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

(c) THE PARTICIPANT HEREBY RELEASES AND DISCHARGES THE AUTHORITY FROM ANY AND ALL FINES, DEMANDS, JUDGMENTS, LIABILITIES, OR CLAIMS OR CAUSES OF ACTION ARISING BY REASON OF OR IN CONNECTION WITH THE DELIVERY OF WATER WHICH MEETS THE REQUIREMENTS OF THIS SECTION 4.10.

Section 4.11: Recovery from Participant. In addition to all other available rights and remedies, the Authority shall have and reserves the right to recover from Participant by any lawful means, including intervention in legal proceedings of Participant, for any losses, damages, claims, expenses, costs, or judgments, including reasonable attorneys fees and court costs incurred by the Authority, and interest not to exceed the interest rate permitted by Section 2251.025, Texas Government Code, resulting directly or indirectly from (a) Participant's breach or violation of this Contract, the GRP, the Rules, or any laws, rules or regulatory requirements relating to Participant's System, (b) improper or inadequate design, construction, permitting, or operation of Participant's System, (c) improper or inadequate design, construction, permitting, or operation of Participant's On-Site Facilities, or (d) claims by third parties, including customers of Participant's System, resulting, in whole or in part, from the negligence, gross negligence, breach of contract, or willful acts or omissions of Participant; provided, however, the Authority shall not so recover from Participant for such losses, damages, claims, expenses, costs, or judgments as

were caused, in whole or in part, by the acts or omissions of the Authority. As further set forth in Section 9.02 hereof, the provisions of this Section 4.11 apply to the Authority in its capacity as a Participant with respect to the Woodlands Division of the Authority.

Section 4.12: Passing of Title to Water; Re-use. (a) Except as otherwise provided herein, if Water is supplied to Participant under Section 4.04 or 4.05 hereof, then title to and possession and control of such Water shall remain with the Authority until it passes through the Point of Delivery, whereupon title to and possession and control of such Water shall pass from the Authority to Participant at the Point of Delivery. After title to such Water has passed to Participant at the Point of Delivery, Participant shall be responsible for storage, security, treatment, retreatment, disinfection, pressurization, distribution, and all other actions necessary to make use of such Water for Participant's purposes.

(b) Notwithstanding subsection (a) above, but subject to any limitations contained in any water rights permit or certificate, imposed by applicable laws, rules or regulations, or applicable under the Houston Contract or any future agreement between the Authority and a third party for the acquisition of water or water rights for the supply of water for the GRP or to be delivered through the Project, the Authority hereby consents to the direct re-use of Water by Participant; provided, however, that (i) unless specifically approved in writing by the Authority, any reduction in water demand of Participant resulting from such re-use of Water shall not serve to reduce the Contract Quantity, and (ii) the provisions of Section 3.04 hereof shall be applicable to such re-used Water. The Authority agrees that, other than as may be included in any future agreement between the Authority and a third party for the acquisition of water or water rights for the supply of water for the GRP or to be delivered through the Project, it will not impose limitations on the re-use of Water (or any other type of water) by Participant which are more restrictive than such limitations as may be applicable under the Houston Contract.

(c) Notwithstanding subsection (a) above, Water shall be subject to indirect re-use by Participant but only with the prior written consent of the Authority, which consent shall be given subject to the limitations and conditions in subsection (b) above and Section 3.04 hereof, and upon such terms and conditions as the Authority reasonably deems appropriate to ensure that such re-use:

(1) does not negatively impact the GRP or any particular Participant as a result;

(2) does not adversely impact the Authority's storage, diversion, or other water rights; and

(3) complies with applicable laws, rules and regulations of all governmental bodies with jurisdiction, and is subject and subordinate to any future changes in such laws, rules or regulations.

The Authority reserves the right to enter into additional agreements with a Participant whereby the Authority agrees to contribute Project funds to defray such Participant's costs of a re-use project, but only where the Authority determines that such use of Project funds would be cost effective and beneficial to the Participants as an Alternative Strategy.

(d) To the extent that the Authority or Participant utilizes, sells, or otherwise makes or has contracted for the beneficial re-use of its treated wastewater effluent as of the effective date of the Houston Contract, the continued beneficial re-use of such effluent shall be permitted for the purposes, to the extent, and on the terms existing as of the effective date of the Houston Contract, notwithstanding that a portion of such effluent may thereafter be derived from Water. After the Effective Date, any such re-use of effluent derived from Water shall require the consent of the Authority, if required under subsection (c) above, and Participant shall be responsible for (i) making appropriate provisions in any contracts for the sale of such effluent to the effect that supply may be limited if the Participant connects to the Project, and (ii) securing the Authority's consent, if Authority consent is required under subsection (c) above, before making investments in re-use projects to address the potential that Participant may connect to the Project in the future and, as a result, be limited in the amount of effluent that is available for re-use.

(e) In order for the Authority to secure rights for the indirect re-use of Water that has been used by Participant, the Authority, and/or other Participants, Participant agrees to provide the Authority such documents and information and to execute such approvals related to Participant's use of Water and/or the discharge of wastewater effluent by Participant derived from Water as may be reasonably required by the Authority for such purposes. Participant hereby waives any objection or right of protest to the Authority's permit applications for such purposes. No provision of this Contract or the Rate Order shall give the Authority a separate right to regulate or control the quality of the wastewater effluent discharged by Participant; provided, however, the Authority reserves all rights under applicable laws, rules, or regulations to contest the quality of such wastewater effluent discharges.

(f) Notwithstanding any other provision of this Contract, the Authority shall not charge any import fees, or any other fees, rates or charges, to Participant in connection with or due to Participant's re-use of Water, water, or treated wastewater effluent allowed by this Contract, regardless of whether Participant implements such re-use individually or collectively with other Participants or non-Participants.

(g) Subject to the provisions of Section 3.04 hereof, the provisions of this section are not applicable to the direct or indirect re-use of water by Participant from any source other than the Project.

(h) For purposes of determining, for a given period of time, the amount of wastewater effluent of Participant that is derived from Water, the total amount of Participant's wastewater effluent during such time period will be multiplied by a fraction, the numerator of which is the total amount of Water taken by Participant during such time period and the denominator of which is the sum of Participant's total amount of water usage from all sources (including Water) during such time period.

Section 4.13: Service Area Expansion; Re-Sale. (a) Participant may expand its service area shown in **Exhibit B** at its sole discretion without obtaining the prior approval of the Authority. Within sixty (60) days after Participant so expands its service area, Participant shall provide the GRP Administrator written notice of same and shall include therewith (i) a revised

service area map, signed and sealed by a professional engineer, which shall function to replace any prior **Exhibit B** to this Contract without the need for further amendments or supplements hereto, (ii) revisions to Participant's water demand projections, if any, that result from such expansion, and (iii) such other information as may be reasonably requested by the GRP Administrator in order to determine the effect of such expansion on the GRP and the need, if any, to amend the GRP as a result.

(b) Without the Authority's written consent, Participant may not sell Water outside of Participant's service area shown in **Exhibit B**, as same may be amended from time to time by Participant under subsection (a) hereof. Without Participant's consent, the Authority will not provide retail water service to any person or entity located within Participant's service area shown in **Exhibit B**, as same may be amended from time to time by Participant under subsection (a) hereof. No provision of this Contract shall be construed to require Participant to obtain the Authority's consent for the sale of Water outside of Participant's service area shown in **Exhibit B**, as same may be amended from time to time by Participant under subsection (a) hereof, if the sale of the Water is done on an emergency basis or done pursuant to a written agreement entered into by Participant prior to the Effective Date regarding the sale of potable Water (or any other form of potable water). No provision of this Contract shall be construed to require Participant to obtain the Authority's consent for the sale of re-used Water inside or outside of Participant's service area shown in **Exhibit B**, as same may be amended from time to time by Participant under subsection (a) hereof, if such re-use of Water is not prohibited by Section 4.12 hereof and any Authority consent has been provided, if applicable and required by Section 4.12 hereof.

(c) In the event Participant is a municipality and acquires Wells formerly owned or operated by another Regulated User, the following shall apply. If Participant's acquisition of the Wells occurs due to its dissolution of a conservation and reclamation district that entered into a contract with the Authority similar to this Contract, then Participant will assume the rights and obligations of such contract as provided by state law without any action required from the Authority. If Participant's acquisition of the Wells occurs due to its acquisition of Wells owned or operated by an entity other than such a district that entered into a contract with the Authority similar to this Contract, then Participant, as part of its acquisition of the Wells, will obtain such entity's assignment of the contract, and the Authority hereby consents to such assignment and no action from the Authority is required. If the Wells acquired by Participant were formerly owned or operated by a conservation and reclamation district or entity other than such a district that functioned under a groundwater reduction plan separate from the GRP, then Participant, at its option, may: (i) notify the Authority that the Wells owned or operated by the district or entity have become part of the GRP and are subject to the terms of this Contract, provided, however, no import fee, equalization fee, or any other type of catch-up fee shall be charged to Participant, and the same groundwater pumpage fee charged to other Participants shall be charged to Participant commencing the day after Participant provides such notice to the Authority, or (ii) notify the Authority that the Wells owned or operated by the district or entity will remain part of the groundwater reduction plan that is separate from the GRP, and in that event, the Authority will not charge Participant any fees or charges associated with the pumpage or importation of water from such Wells, and the Authority will in no way penalize or charge Participant any charges for owning or operating such Wells or participating in a groundwater reduction plan that is separate

from the GRP. In any such event, Participant shall comply with the provisions of subsection (a) hereof.

ARTICLE V

Metering

Section 5.01: General. The quantity of groundwater withdrawn from Participant's Wells, and the quantity of water imported by Participant from a non-Participant, shall be measured by the Participant Meters. If Participant has connected to the Project, or has received a notice to connect to the Project from the GRP Administrator under Section 4.05 hereof, then Water delivered through the Point of Delivery shall be measured by Authority Meters installed by the Authority pursuant to this Article V. The Participant Meters and Authority Meters shall be maintained and tested by the Parties as provided in this Article V. To the extent Participant loses Water as a result of any malfunction of Project facilities or other acts or omissions of the Authority, Participant shall not be required to pay fees, rates, or charges established under Section 6.02(2) with respect to such lost Water.

Section 5.02: Installation of Authority Meters. As an expense of the Project, the Authority shall design, permit, construct, operate, and maintain, at any appropriate measuring points that may be identified by the GRP Administrator (which may require the conveyance of an easement from Participant to the Authority pursuant to Section 4.03 hereof), such measuring equipment with related meters, totalizers, vaults, lines, and voice or data transmission devices (including towers or antennae), and recording devices of a type specified by the GRP Administrator for measuring and recording the quantity of Water delivered through the Point of Delivery within the accuracy tolerances specified in Section 5.03 hereof ("Authority Meters"). Authority Meters shall be considered part of the Project for all purposes.

Section 5.03: Maintenance and Testing of Meters. (a) Participant shall maintain the Participant Meters, at no expense to the Authority, unless otherwise specifically provided in this Article V, within the accuracy tolerances specified in this Section 5.03 by periodic tests. Participant shall conduct such tests at least once every 12 months and shall notify the Authority at least 48 hours (but not less than two (2) full business days) in advance of the time and location at which tests are to be made. If the Authority requests an additional test earlier than 12 months after any such test, then Participant shall make the test, and the Authority will provide Participant with a credit towards any fees, rates, or charges then payable by Participant to the Authority in an amount equal to Participant's cost to perform such test, unless the test reveals that any such Participant Meters register more than one hundred and two percent (102%) or less than ninety-seven percent (97%) of the correct flow amount for a given rate of flow. The Authority shall have the right to be present and to witness any test performed by Participant.

(b) The Authority shall maintain Authority Meters within the accuracy tolerances specified in this Section 5.03 by periodic tests. The Authority shall conduct such tests at least once every 12 months and shall notify Participant at least 48 hours (but not less than two (2) full business days) in advance of the time and location at which tests are to be made. If Participant requests an additional test earlier than 12 months after any such test, then the Authority shall

make the test and charge Participant an amount equal to the Authority's cost to perform such test, unless the test reveals that any such Authority Meter registers more than one hundred and two percent (102%) or less than ninety-seven percent (97%) of the correct flow amount for a given rate of flow. Participant shall have the right to be present and to witness any test performed by the Authority.

Section 5.04: Billing Adjustments for Inaccurate Meters. (a) Should a test of the Participant Meters show that same registers either more than one hundred and two percent (102%) or less than ninety-seven percent (97%) of the groundwater withdrawn from Participant's Wells, or imported by Participant from any source, for a given rate of flow, the total quantity of groundwater measured by the inaccurate Participant Meter shall be deemed to be the "average daily amount," as measured by such Participant Meter when in working order, and Participant shall calibrate such Participant Meter to the manufacturer's specifications (in the case of Venturi meters), or to the American Water Works Association specifications (for all other types of meters) for the given rate of flow, or shall replace such Participant Meter with an accurate Participant Meter that has been tested by Participant before being placed in service.

(b) Should a test of the Authority Meters show that same register either more than one hundred and two percent (102%) or less than ninety-seven percent (97%) of the Water delivered for a given rate of flow, the total quantity of Water withdrawn or delivered through the inaccurate Authority Meter shall be deemed to be the "average daily amount," as measured by such Authority Meter when in working order, and the Authority shall calibrate such Authority Meter to the manufacturer's specifications (in the case of Venturi meters), or to the American Water Works Association specifications (for all other types of meters) for the given rate of flow, or shall replace such Authority Meter with an accurate Authority Meter that has been tested by the Authority before being placed in service.

(c) Any billing adjustment under this Section 5.04 shall be for a period extending back to the time when the inaccuracy began, if such time is ascertainable. If such time is not ascertainable, (i) an adjustment with respect to groundwater withdrawn from Participant's Well, or imported by Participant from any source shall be based on the average daily amount, as described above, for a period extending back to the last test of the inaccurate Participant Meter, or 120 days, whichever is shorter, (ii) an adjustment with respect to Water shall be based on readings from Participant's check meters, if installed pursuant to Section 5.06 hereof and if operating within the tolerances described above, for a period extending back to the last test of the inaccurate Authority Meter, or 120 days, whichever is shorter, or (iii) an adjustment with respect to Water shall be based on the average daily amount, as described above, for a period extending back to the last test of the inaccurate Authority Meter, or 120 days, whichever is shorter, in the event that Participant has not installed check meters pursuant to Section 5.06 hereof or if such check meters are not operating within the tolerances described above.

(d) As used in this Section 5.04, the expression "given rate of flow" means one of the following specified or selected by the GRP Administrator for each calibration or test:

(1) the total quantity of water passing through the Participant Meter or the Authority Meter, as applicable, during the preceding period (usually a

calendar month) as reflected by the totalizer, converted to gallons per minute;

(2) high, low, and intermediate rates of flow in the flow range, as reflected by the flow recording devices;

(3) the applicable minimum monthly quantity converted to gallons per minute; or

(4) AWWA-specified test flow rates for that size and type of meter.

Section 5.05: Disputes as to Testing. In the event of a dispute between Participant and the Authority as to the accuracy of the testing equipment used to conduct an accuracy test of the Participant Meters or the Authority Meters, an independent check may be mutually agreed upon between Participant and the GRP Administrator, to be conducted by an independent measuring equipment company suitable to both Participant and the GRP Administrator. The cost of such test shall be at requesting Party's sole expense. The GRP Administrator may accept the test results of the independent measuring equipment company, but is not required to do so unless the refusal to accept such results would be unreasonable.

Section 5.06: Check Meters. Participant may install, at its own cost and expense, such check meters downstream of Authority Meters as it deems appropriate, and subject to reasonable safety and security requirements of Participant, the Authority shall have the right of ingress and egress to such check meters during all reasonable hours; provided, however, that billing computations shall be on the basis of the results of Authority Meters described above unless Authority Meters are not operating within required tolerances.

Section 5.07: Rate Order Provisions. Reasonable provisions and procedures related to the periodic testing of meters, the audit of meters, and the adjustment of readings of inaccurate meters may be adopted by the Authority from time to time and included in the Rate Order to supplement the provisions or procedures set forth in this Contract, so long as such provisions and procedures are not contrary to, inconsistent with, or prohibited by the terms and provisions of this Contract.

ARTICLE VI

Fees, Rates and Charges

Section 6.01: Payment Commencement Date. (a) Except as hereinafter provided, fees, rates, and charges for the goods and services provided by the Authority to Participant under this Contract shall begin to accrue as of the Payment Commencement Date.

(b) If Participant executes this Contract after the Payment Commencement Date, then the Participant shall pay an equalization fee on the Effective Date which equals (i) the entire amount of the payments that Participant would have made from and after the Payment Commencement Date under the requirements of this Contract and the Rate Order, plus interest

thereon compounded annually at the Applicable Interest Rate, and (ii) the Authority's actual or estimated increased costs incurred in connection with the development and implementation of the GRP and the design and permitting of the Project, plus interest thereon compounded annually at the Applicable Interest Rate, as calculated by the GRP Administrator, that would have been avoided if this Contract had been executed by Participant on or before the Payment Commencement Date, all as reasonably determined by the GRP Administrator.

Section 6.02: Monthly Fees and Rates. The fees and rates due from Participant for each whole or partial calendar month, as appropriate, from and after the Payment Commencement Date shall be calculated as follows:

(1) For all groundwater pumpage by Participant, Participant shall pay an amount determined by the formula:

$P \times Q$, where:

P is the prevailing fee for groundwater pumpage, per thousand gallons, adopted by the Authority in its Rate Order; and

Q is the quantity of groundwater pumped by Participant, in thousands of gallons, during the calendar month.

(2) In addition to any groundwater pumpage fees due under subdivision (1), for Water delivered to Participant by the Authority after the date on which Participant connects to the Project, Participant shall pay an amount determined by the formula:

$W \times Q$, where:

W is the prevailing rate, per thousand gallons, adopted by the Authority in its Rate Order for Water delivered by the Project; and

Q is the quantity of Water taken by Participant, in thousands of gallons, during the calendar month.

Section 6.03: Charges. (a) The Authority is hereby authorized to impose reasonable charges under the Rate Order, or other written order of the Authority, necessary for the recovery of damages, losses, delay costs, litigation fees, interest not to exceed the interest rate permitted by Section 2251.025, Texas Government Code, or other costs or expenses, incurred by the Authority, including reasonable attorneys fees, court or administrative agency fees, or judgments, resulting, directly or indirectly from a Participant's breach or violation of this Contract, the GRP, the Rate Order, the Rules, the rules of all regulatory and permitting authorities with jurisdiction, or any other applicable rules, laws, or regulatory requirements, or any losses, damages, costs, interest, or expenses incurred by the Authority resulting, directly or indirectly, from the Authority's acts or omissions under this Contract, except as otherwise provided in Section 11.01 hereof.

(b) In addition to any charges under subsection (a) above, in the event Participant (i) fails to make the required connection to the Project under Section 4.05 hereof, (ii) takes more groundwater than is authorized under the GRP, or (iii) takes or omits to take any action required hereunder, or under the GRP, the Rate Order, or other written order of the Authority, the Rules, or other applicable rules, laws, or regulatory requirements, which results in any fee, fine, penalty, charge, judgment, or assessment to or against the Authority, then Participant shall reimburse the Authority, together with interest not to exceed the interest rate permitted by Section 2251.025, Texas Government Code, and reasonable collection costs and fees, upon written demand by the Authority and/or the GRP Administrator.

(c) In the event Participant is in substantial compliance with this Contract and related Rules, and the Conservation District nonetheless imposes or seeks to impose fines or administrative penalties against Participant for failure to comply with the Conservation District's groundwater reduction requirements under the Plan, then Authority shall, out of GRP funds, defend and hold harmless Participant against such fines or administrative penalties, including making payment of such fines or penalties directly to the Conservation District on behalf of Participant.

Section 6.04: Rate Order. (a) The Authority has heretofore adopted a Rate Order that establishes fees, rates, and charges applicable to the Participants and, throughout the Contract Term, the Authority shall maintain such Rate Order in force and effect in accordance with the provisions of this Section 6.04. The Rate Order may include reasonable classifications of Participants for the purposes of applying fees, rates, and charges as deemed reasonably necessary by the Authority to implement and enforce the GRP and discharge its obligations under this Contract. The fees, rates, and charges adopted under the Rate Order shall be at all times the lowest which are:

(1) consistent with good management practices by the Authority;

(2) necessary and proper under subsection (d) and compliant with subsections (b), (c), and (e);

(3) consistent with the Authority's statutory and constitutional duties and responsibilities; and

(4) just, reasonable, and nondiscriminatory.

(b) The Rate Order shall be amended from time to time to specify the prevailing pumpage fee for purposes of Section 6.02(1) hereof such that, as nearly as practicable in the Authority's reasonable determination (i) the Participants are neither benefitted nor penalized for utilizing groundwater from Wells, and (ii) reasonable allowance is made for the Participants' costs of operating and maintaining their Wells (exclusive of any costs of depreciation, debt service, or similar charges in respect of the design, permitting, construction, reconstruction, rehabilitation, or redevelopment of such Wells). The prevailing pumpage fee for purposes of

Section 6.02(1) hereof shall be equal and uniform among all classes of Participants that pump groundwater.

(c) Prior to placing the Project in service, and at all times after the Project is placed in service, the Rate Order shall be amended from time to time to specify the Authority's prevailing rate for Water delivered to Participants for purposes of Section 6.02(2) hereof such that, as nearly as practicable in the Authority's reasonable determination (i) the Participants are neither benefitted nor penalized for being required to take Water from the Project under the GRP, and (ii) reasonable allowance is made for Participants' costs of operating and maintaining On-Site Facilities, as well as operating and maintaining their Wells (exclusive of any costs of depreciation, debt service, or similar charges in respect of the design, permitting, construction, reconstruction, rehabilitation, or redevelopment of such On-Site Facilities or Wells). The prevailing rate for Water for purposes of Section 6.02(2) hereof shall be equal and uniform among all classes of Participants that receive Water.

(d) In its Rate Order, or any separate written order, the Authority shall adopt such fees, rates, and charges, including those identified in Sections 6.02 and 6.03 hereof, that are sufficient to:

(1) achieve and maintain compliance with the Plan, the Rules, and the GRP;

(2) develop, implement, or enforce the GRP;

(3) accomplish the purposes of this Contract and the GRP;

(4) recoup any unrecovered losses, damages, costs, or expenses incurred by the Authority, together with interest thereon at a rate not to exceed the interest rate permitted by Section 2251.025, Texas Government Code, resulting, directly or indirectly, from Participant's breach or violation of this Contract or other Participants' breach of similar contracts, the GRP, the Rules, the rules of all regulatory and permitting authorities with jurisdiction, or any other applicable rules, laws or regulatory requirements, or any losses, damages, costs, interest, or expenses incurred by the Authority resulting, directly or indirectly, from its acts or omissions under this Contract, except as otherwise provided in Section 11.01 hereof;

(5) recoup (i) the reasonable costs incurred by the Authority in connection with the discharge of its obligations under Section 9.03(a) hereof, and (ii) any actual costs incurred by the Authority that are associated with the development of the WRAP (except to the extent Authority has already received funds for the WRAP), the GRP, or the Project, or that otherwise specifically pertain to the subject matter of this Contract;

(6) purchase, lease, reserve, option, or contract for alternative water supplies by, through, or with third parties or the Authority for the benefit of the Project and the GRP;

(7) meet administrative, operation, maintenance, repair, and replacement expenses relating to the Project and the GRP;

(8) pay the principal of, interest on, and redemption prices or costs of any Bonds or other obligations of the Authority issued or incurred, or to be issued or incurred, in connection with the Project or the GRP, pursuant to Article VIII;

(9) satisfy all rate covenants relating to any such Bonds or other obligations of the Authority relating to the Project or the GRP;

(10) establish, accumulate, maintain, or replenish one or more operating, debt service, contingency, or emergency reserve funds relating to the Project or the GRP, as deemed reasonably necessary by the Authority;

(11) offset impacts to GRP and/or Project revenues or expenses related to or arising out of the effects of water conservation, drought contingency, or environmental quality measures or programs of the Authority or others; and

(12) offset any other costs or expenses, of a like or different nature, resulting from changes in applicable laws, rules, or regulatory requirements or from altered or unforeseen events or circumstances.

(e) The fees, rates, and charges of the Authority shall at all times be established and imposed in order to equitably apportion the costs of the implementation of the GRP among the Participants, as nearly as practicable on a uniform basis, such that no special advantage or disadvantage is realized by any of the Participants because of proximity or access to the Project, other alternative water supplies of the Authority, geographical location, the time of inclusion within the GRP, the nature or extent of a Participant's water demands, or the source of water supply to a Participant.

(f) The fees, rates, and charges imposed by the Authority under the Rate Order shall be reviewed and adjusted from time to time (but not less frequently than annually) by the Authority in order to ensure that they are not in excess of the needs of the Project and the GRP. The Authority further agrees that it shall, not more often than every five (5) years, engage an independent rate analyst to review and prepare a written report regarding the fees charged by the Authority to reserve raw water for the benefit of the Participants and the rates at which such raw water has been or may be sold by the Authority for use in connection with the Project.

(g) The Authority agrees that except as specifically provided in Section 9.01(h)(1) with respect to sales of excess water and in subsections (a) and (b) of Section 9.03, the fees, rates, and charges imposed by the Authority under the Rate Order, or imposed in any other manner by this Contract, shall be used for the Project and GRP and not for any other purpose of the Authority.

(h) The adoption of the current Rate Order prior to the Effective Date is hereby acknowledged by Participant; provided, however, the Authority shall not adopt, implement, or enforce any provision of the Rate Order that is contrary to, inconsistent with, or prohibited by the terms and provisions of this Contract. To the extent any provision of the current Rate Order is contrary to, inconsistent with, or prohibited by this Contract, the Authority will amend the Rate Order so that it conforms to this Contract. On and after the Effective Date, the Authority shall comply with all applicable legal requirements relative to providing public notice of the amendment of the Rate Order, or any separate written order or any amendment thereto adopted pursuant to this Contract, including duly posting agendas for meetings of the Board of Directors of the Authority under the Texas Open Meetings Act, and in certain circumstances, publication of notice under other applicable laws of the State of Texas. In addition, the Authority shall use commercially reasonable efforts to provide Participants with written notice at least forty-five (45) days prior to the consideration by the Board of Directors of the Authority of the adoption of any amendment to the Rate Order, or any separate written order, or any amendment thereto adopted pursuant to this Contract. Failure of the Authority to provide, or of Participant to receive, such notice shall not affect the validity of any action taken by the Board of Directors of the Authority with respect to the Rate Order, or any separate written order adopted pursuant to this Contract, or any amendments thereto.

(i) The Authority shall never be authorized or permitted to impose fees, rates, or charges on any water imported by Participant: (i) from another Participant, or (ii) from a non-Participant in the event that Participant has connected to the Project under Sections 4.04 or 4.05 hereof and the Authority is unable to deliver Water to Participant due to a *force majeure* event or when the Project's or the Authority's equipment may become inoperative as further described in Section 4.09(c) or in the event the Authority otherwise fails to deliver Water to which Participant is entitled under this Contract. The Authority may impose such fees, rates, and charges on water imported by a Participant from a non-Participant as would otherwise be applicable to groundwater pumped from such Participant's Wells; provided, however, that the Authority shall not impose fees, rates, or charges on water imported by Participant from a non-Participant if (i) such importation is necessary due to an emergency impacting the ability of Participant's System to meet its water demands, (ii) such period of importation lasts for less than fifteen (15) consecutive days, and (iii) Participant has not imported water during more than thirty (30) days during the current calendar year.

(j) Notwithstanding any other provision of this Contract, if the Conservation District allows brackish groundwater to be considered an "alternate water source" similar to surface water or treated wastewater effluent, then: (i) the Participant may, at its sole cost, develop and acquire, individually or collectively with other Participants or non-Participants, brackish groundwater supplies for its use, provided however, unless specifically approved in writing by the Authority, any reduction in water demand of Participant resulting from brackish groundwater production shall not serve to reduce the Contract Quantity, (ii) the Authority shall not charge any import fees or groundwater pumpage fees, or any other fees, rates or charges, to Participant in connection with or due to such brackish groundwater production, and (iii) the provisions of Section 3.04 shall apply to such brackish groundwater use.

Section 6.05: Self-Reporting and Payment of Pumpage Fee. (a) Participant shall be responsible for reading the Participant Meters at the end of each month, beginning on the Payment Commencement Date. Such measurement shall be reported to the Authority on a reporting form duly adopted under the Rate Order. Participant shall remit payment of applicable pumpage fees along with the completed pumpage form to the Authority using the manner and method of payment specified under the Rate Order. The due date for remitting such payment and such completed pumpage form shall be not less than forty-five (45) days from the last of day of the reporting period; provided, however, the Rate Order may provide for the acceleration of such due date in the event Participant is past due with respect to any other fees, rates, or charges due the Authority under this Contract, but such acceleration shall not provide Participant less than ten (10) days for remitting such payment and such completed pumpage form.

(b) In the event Participant fails or refuses to read the Participant Meters, the Authority shall have the right to enter upon the land of Participant at any reasonable time in order to read the Participant Meters. If the Authority is required to read the Participant Meters, Participant will be charged a service fee for such reading, and the pumpage fee due under Section 6.02(1) hereof shall be calculated based on the Authority's readings, regardless of when the Authority reads the Participant Meters. In the event the Participant Meters have not been timely installed by Participant pursuant to Section 4.06 hereof, or inspected and approved by the GRP Administrator pursuant to Section 4.07 hereof, the GRP Administrator shall be authorized to calculate Participant's groundwater usage from the Payment Commencement Date through the date the Participant Meters are approved by the GRP Administrator based upon Participant's "average daily amount" of usage. In either event, the Authority shall invoice Participant for the pumpage fee due under Section 6.02(1) hereof, and any related service fees. The manner and method of payment of such invoice shall be as specified under the Rate Order. The due date for remitting payment shall be not less than forty-five (45) days from the date of such invoice; provided, however, the Rate Order may provide for the acceleration of such due date in the event Participant is past due with respect to any other fees, rates, or charges due the Authority under this Contract, but such acceleration shall not provide Participant less than ten (10) days for remitting such payment.

(c) The Authority shall have the right to audit the measurements submitted by Participant by reading the Participant Meters. The Authority and its representatives shall have the authority to enter upon the land of Participant at any reasonable time in order to audit the readings of the Participant Meters reported to the Authority.

(d) The Authority reserves the right to directly read, whether by entering upon a Participant System Site or by remote reading through transmission of data from such sites, the Participant Meters and to discontinue the self-reporting process established under this Section 6.05 upon written notice provided to Participant at least thirty (30) days in advance of same. In such case, the Authority shall adopt reasonable amendments to the Rate Order specifying the manner and method by which the Authority shall provide Participant an invoice for Water delivered, as well as the acceptable time, place and methods of payment of such invoice, interest on past due payments not exceed the interest rate permitted by Section 2251.025, Texas Government Code.

Section 6.06: Invoicing and Payment of Water Rate. If Participant connects to the Project pursuant to Sections 4.04 or 4.05 hereof, the Authority shall read the appropriate Authority Meters and record or calculate the amount of Water taken by Participant on a monthly basis and invoice Participant therefor. The manner and method of payment of such invoice shall be as specified under the Rate Order. The due date for remitting payment shall be not less than forty-five (45) days from the date of such invoice; provided, however, the Rate Order may provide for the acceleration of such due date in the event Participant is past due with respect to any fees, rates, or charges due the Authority under this Contract, but such acceleration shall not provide Participant less than ten (10) days for remitting such payment.

Section 6.07: Payment of Charges. Any other charges due to the Authority from Participant hereunder shall be set forth in reasonable detail in a written invoice from the Authority to Participant. Such invoice shall provide therein a due date for remitting payment in respect of any such charges established in accordance with Section 2251.021 Texas Government Code, as well as the acceptable manner and method of payment.

Section 6.08: Failure to Pay when Due; Early Payment Discount. (a) Should Participant fail to tender payment of any amount when due from Participant, interest thereon shall accrue as may be provided in this Section 6.08. In the event Participant fails to timely tender payment of any amount by the appropriate due date, and such failure continues for thirty (30) days thereafter, then the Authority may take any and all actions allowed by law as described in Article XI hereof. The Rate Order may (i) require the payment of interest on any late or unpaid fees, rates, and/or charges due to the Authority at a rate or rates that specified therein provided that same shall not exceed the interest rate permitted by Section 2251.025, Texas Government Code, as amended, and (ii) impose lawful penalties or administrative charges for the failure to completely or timely make payments to the Authority, but such penalties or charges shall not begin to accrue until at least three (3) business days after Authority has notified Participant in writing that Authority intends to impose same.

(b) The Authority reserves the right to implement discounts under the Rate Order for the payment of fees, rates, and charges prior to the dates same are otherwise due and payable under the terms specified hereinabove.

ARTICLE VII

Gifts, Grants and Special Projects

Section 7.01: Gifts and Grants. Unless otherwise prohibited by law, the Authority may accept, in its own name and/or on behalf of Participant, any one or more of the Participants, or any class of Participants, gifts, grants, gratuities, advances, and secured, non-recourse loans in any form from any source, including the United States, the State of Texas, any agency or instrumentality of same, or any other person, and may make and enter into contracts, agreements and covenants which the Authority considers necessary and proper in connection with the acceptance of such gifts, grants, gratuities, advances, or loans. The Authority agrees that it shall make use of the proceeds of same only for the intended beneficiary or beneficiaries, and in connection therewith, may make adjustments to its fees, rates, and charges, under the Rate Order

or otherwise, to such beneficiary or beneficiaries. In the event such gifts, grants, gratuities, advances, and secured, non-recourse loans benefit the Project or the GRP, they shall be credited to the benefit of the GRP and the Participants.

Section 7.02: Special Projects; Assessments. (a) The Authority may undertake improvement projects or services that confer a special benefit on all or a defined part of the service area of one or more Participants, including water delivery systems or facilities or water supplies for recreational, environmental, aesthetic, or other non-consumptive uses, whether or not same are connected to or made a part of the Project, but only pursuant to a separate written agreement between the Authority and such Participants specifying the respective financial, legal, and engineering responsibilities of the Authority and the Participants relative to such project or services.

(b) Unless otherwise agreed to in writing by the Authority and the Participants specially benefitted by any such improvement project or services undertaken pursuant to subsection (a), such benefitted Participants shall pay periodic assessments to the Authority, calculated on a basis that is mutually agreeable to the Authority and such Participants, in amounts sufficient to meet all costs for such improvement project or services and continuing in effect for the period required to fully and timely pay for such improvement project or services or any bonds, notes, or other obligations issued or incurred by the Authority to finance such improvement project or services.

(c) All costs associated with any improvement project or services undertaken by the Authority and one or more Participants pursuant to this Section 7.02 shall be separately accounted for by the Authority, and such costs shall not be considered Project costs or included in the Authority's adoption of fees, rates, or charges generally applicable to all Participants under Article VI.

Section 7.03: Other Reimbursement to Participant. Upon request from Participant and recommendation of the Review Committee, the Authority may, but is not obligated to, reimburse Participant for all or part of Participant's reasonable costs and expenses actually incurred in connection with this Contract, the Project, or the GRP, out of Project revenues, upon terms and conditions approved by the Board of Directors of the Authority. The foregoing provision shall not be deemed or construed to supersede any other express provision in this Contract requiring the Authority to reimburse Participant for all or part of Participant's costs and expenses incurred in connection with this Contract, the Project, or the GRP (including, without limitation, reimbursement for On-Site Facilities pursuant to Section 4.08 hereof), and shall be in addition to any other such provision.

ARTICLE VIII

Bonds; Pledge of Revenues

Section 8.01: Bonds. (a) In order to finance or refinance the development of the GRP and the design, permitting, construction, operations, maintenance, or administration of the Project, the Authority may issue, sell, and deliver from time to time, as deemed necessary and

appropriate, its notes, bonds, and other obligations ("Bonds"), in one or more issues or series, with such Bonds to bear interest, to be in such form and denomination, to be transferable and subject to exchange, replacement or refunding, and to mature in such installments or at such times, as may be provided in the documents or proceedings authorizing the issuance of such Bonds and permitted by the Act or by the general law of the State of Texas.

(b) The Bonds of the Authority, as to both principal and interest, shall be and remain obligations solely of the Authority, payable from the sources and secured in the manner provided therein, and shall never be deemed or construed to be obligations of Participant, except to the extent of Participant's obligations to make payments to the Authority hereunder.

(c) The Authority shall not issue Bonds secured by a mortgage or deed of trust lien on the Project or any portion thereof, except where such mortgage or deed of trust lien is (i) permitted by the Act, and (ii) created in favor of, or conveyed to, the United States, the State of Texas, or any agencies, dependants, boards, commissions, or other such governmental entities, in connection with the application, securing, closing, or other transaction of loans, gifts, or grants necessary and proper in connection with the Authority's financing of the Project.

Section 8.02: Pledge of Revenues. The Authority is specifically authorized hereby to pledge, create one or more liens on, or assign all or any portion of the payments to be made by Participant hereunder, together with similar payments from other Participants, to the payment of and security for the Bonds issued by the Authority in order to finance or refinance the development of the GRP and/or the design, permitting, construction, operation, maintenance, or administration of the Project.

Section 8.03: Certificates; Other Documents and Showings. Participant agrees to assist and cooperate with the Authority, to the extent reasonably determined necessary by the Authority, in the preparation, authorization, execution, and/or delivery of certificates, documents, information, or showings, reasonably necessary in connection with the sale, issuance, and delivery of its Bonds as authorized under this Article VIII. All costs and expenses related to such certificates, documents, information, or showings, with the exception of any of Participant's legal, engineering, or other consultant or employee costs and expenses, shall be borne by the Authority as a Project cost, and Participant shall assume no separate liability therefor.

Section 8.04: Disclosure Obligations. Participant agrees to assist and cooperate with the Authority, to the extent reasonably determined necessary by the Authority, in complying with any and all present and future valid laws, orders, rules, and regulations of the United States of America, the State of Texas, or any other regulatory body having jurisdiction, related to any obligation of the Authority to disclose financial information in connection with the sale, issuance, and delivery of its Bonds as authorized under this Article VIII, including the making of disclosures required under Rule 15c2-12 of the United States Securities and Exchange Commission. All costs and expenses related to such compliance, with the exception of any of Participant's legal, engineering, or other consultant or employee costs and expenses, shall be borne by the Authority as a Project cost, and Participant shall assume no separate liability therefor.

ARTICLE IX

Special Covenants

Section 9.01: The Authority as Water Supplier. (a) For so long as the Authority receives payment therefor from the separate operating division to be created and established pursuant to Section 9.03(a)(1) hereof of its rate and generally applicable fees adopted from time to time by the Board of Directors of the Authority for large volume raw water customers of the Authority for holding, leasing, reserving, optioning, or contracting for raw water ("reservation fees") derived from water rights owned by the Authority as of the Effective Date, the Authority agrees, directly or through one or more of its operating divisions, to make available and sell to such separate operating division, as needed, for the use and benefit of the GRP and the Participants, all of the available and uncommitted supplies of raw water owned by the Authority from the permitted and actual yield of Lake Conroe, at a rate equal to the prevailing and generally applicable rate for large volume raw water customers of the Authority for raw water derived from any water rights owned by the Authority as of the Effective Date ("System Rate"). Such System Rate shall be determined, and may be revised or adjusted from time to time by the Board of Directors of the Authority, on a Modified Cash Basis, as defined and provided in subsection (e) below.

(b) Within the limits of engineering and economic feasibility and responsible planning, as determined in its sole judgment and discretion, the Authority agrees to use reasonable diligence and good faith efforts to locate, identify, develop, purchase, hold, lease, reserve, option, or contract for additional water supplies, over and above the water supplies available from the permitted and actual yield of Lake Conroe, necessary to supply the Project so that the GRP may be successfully implemented throughout the Contract Term, and the Authority may, but shall not be obligated to:

(1) utilize its own funds to do so; or

(2) utilize Project revenues to do so;

provided, however, the Authority shall be obligated to use Project revenues for such purposes if the Authority has (i) not utilized, and has officially determined not to utilize, its own funds to do so, and (ii) been requested in writing by the Review Committee to do so.

(c) For so long as the Authority receives payment therefor from the separate operating division to be created and established pursuant to Section 9.03(a)(1) hereof of its rate and any applicable reservation fees, the Authority agrees, directly or through one or more of its operating divisions, to sell and make available to such separate operating division, as needed, for the use and benefit of the GRP and the Participants, water from all other additional sources or supplies acquired or contracted by the Authority with Project revenues pursuant to subsection (b), above, plus water obtained by the Authority under the Houston Contract, at a rate equal to the Authority's actual costs for locating, identifying, developing, purchasing, holding, leasing, reserving, optioning, or contracting for such additional water supplies.

(d) With respect to any additional sources of water supplies or other projects, programs, systems, facilities, or services acquired, contracted, or undertaken by the Authority after the Effective Date with funds other than Project revenues, the Authority may, in its sole discretion, but shall not be obligated, to: (i) offer for sale to such separate operating division, for the use and benefit of the GRP and the Participants, all or such portions of such additional water supplies, (ii) establish separate rates for the sale of such additional water supplies using any methodology, including or excluding the Modified Cash Basis described in subsection (e) below, and/or (iii) incorporate, all or any portion of such additional water supplies or projects, programs, systems, facilities or services, and/or all or any portion of the costs and expenses of same, into the System Rate described in subsection (a) above, but using the Modified Cash Basis described in subsection (e) below.

(e) "Modified Cash Basis", as used in this section, means a rate or rates which, when applied to the projected sales of raw surface water during a given budget period from the Authority's raw water system and any water rights owned by the Authority as of the Effective Date, and any additional water supplies as may be incorporated therein, as provided in subsection (d) above, are sufficient in the reasonable discretion of the Board of Directors of the Authority to generate revenues adequate to pay or accrue the following costs and expenses, without return on investment or loss to the Authority: (i) the direct and indirect operating and maintenance expenses of or related or allocated to such system; (ii) the direct and indirect general and administrative expenses of the Authority related or allocated to such system; (iii) capital improvements to such system; (iv) debt service on any bonds, notes, or other obligations of the Authority issued for the benefit of such system, and any reasonably required reserve and replenishment fund obligations related to any such debt issuance; (v) reserves for, among other purposes, capital improvements, working capital and emergencies; (vi) depreciation on improvements, facilities, or other infrastructure and related appurtenances comprising such system; (vii) reserves to allow the Authority to locate, identify, develop, permit, or acquire the use or ownership of additional water supplies for any corporate purpose of the Authority; (viii) reserves and allowances for research and development of any project, program, system, facility, or service consistent with the Authority's powers, duties, responsibilities, or purposes; (ix) impacts to revenues or expenses related to or arising out of the effects of water conservation, drought contingency, or environmental quality measures or programs of the Authority or others; (x) awards, settlements, judgments, court and litigation costs, fines, permits, assessments, or other contingent liabilities; and (xi) any other costs or expenses, of a like or different nature, resulting from changes in applicable laws, rules, or regulatory requirements or from altered or unforeseen events or circumstances. Such rates may be established so as to apply to reasonable classifications of customers of the Authority's raw water system; provided, however, that except as provided in subsection (d) above, such rates shall not be based during the Contract Term on costs and expenses of particular components of such system or on geographic area(s) served by defined portions of such system.

(f) The Authority will not utilize the Project to provide Water to any person or entity that is not a Participant or that is outside of Montgomery County, except as necessary to serve Participants with contiguous service areas located, in part, outside of Montgomery County.

(g) The Authority agrees that it will not enter into any new or additional contracts for the sale of Water to Participants, or require or permit the connection of additional Participants to the Project under Sections 4.04 and 4.05 hereof, to such an extent or for such quantities as, in the Authority's sound discretion, and on the basis of the then current requirements of the Plan, the projected demands of the Participants, the condition of the Project, the water supplies available to the Project from the permitted and actual yield of Lake Conroe or from additional water supplies secured for the benefit of the GRP and the Participants through the use of the Project revenues as provided in subsection (b) (collectively, "GRP Water"), and related conditions, would impair the Authority's ability to deliver Water to Participant at the Contract Quantity during the Contract Term. Additionally, and except for any amendment, renewal, extension, replacement or modification of a contract between the Authority and a third party in effect as of the Effective Date for the sale of surface water from Lake Conroe on a non-interruptible basis, and except as permitted by subsection (h)(1) of this Section 9.01, the Authority covenants that it will not hereafter enter into any new or additional contracts for the sale of GRP Water that would cause the then-current GRP Water to be inadequate to satisfy the then-current projected surface water needs of the GRP and Project to comply with the Plan during the Contract Term.

(h) As provided herein, Project revenues may be used by the Authority to pay reservation fees for GRP Water and other additional water supplies. To the extent that any fees, rates, charges, gifts, grants, or assessments collected by the Authority from the Participants are used to pay reservation fees to the Authority, or one or more of its other operating divisions, for GRP Water, or other additional water supplies of the Authority as may be sold or reserved for the benefit of the GRP and the Participants pursuant to subsection (d) above, the first and prior use of such water supplies shall be for the benefit of the Participants; provided, however, that:

(1) nothing in this Contract shall be deemed or construed to limit the right and power of the Authority, or one or more of its other operating divisions, to sell, option, or reserve such portions of such water supplies as, in the sound judgment of the Authority, are surplus to the needs of the Participants, on a temporary, seasonal, periodic, or permanent basis, to other persons, so long as any net income or revenues from such sale, optioning, or reservation are first used to reimburse the Participants for any reservation fees or actual costs, expenses, or carrying costs and interest paid by or on behalf of the Participants for such water supplies;

(2) unless and until fees, rates, charges, gifts, grants, or assessments collected by the Authority from the Participants are used to pay or reimburse the Authority, or one or more of its operating divisions, for the costs of identifying, locating, developing, permitting, holding, purchasing, leasing, reserving, optioning, or contracting for a specifically identified, additional, or prospective additional water supply, and except as provided in the subsection (b), above, the Authority shall have no fiduciary or other responsibility to the Participants with regard to such additional water supply;

(3) should the Authority determine to pursue developing, holding, purchasing, leasing, reserving, optioning, or contracting for any such additional water supply for any of its corporate purposes using its own funds, whether directly or by and through any of its operating divisions, Participant specifically agrees that same shall not constitute a breach of any fiduciary or other responsibility of the Authority and hereby waives all claims at law or in equity against the Authority related to or arising out of same;

(4) nothing in this Contract shall be deemed or construed to obligate the Authority to sell, reserve, option, hold, or make available for the Participants or for Project purposes all or any portion of its water supplies or rights existing on the Effective Date hereof, other than from the permitted and actual yield of Lake Conroe, after deducting such amounts therefrom as may now or hereafter be reserved by the Authority to its existing customers on the Effective Date that are served on a non-interruptible basis from such permitted yield of Lake Conroe; and

(5) nothing in this Contract shall be deemed or construed as a representation or warranty by the Authority that (i) the permitted and actual yield of Lake Conroe, as same may be adjusted from time to time by changes in laws, rules, regulatory requirements, environmental restrictions, judicial or administrative rulings, physical characteristics or levels, or other circumstances beyond the control of the Authority, will be sufficient to meet all of the demands of Participant or the Participants, as same may be revised from time to time throughout the Contract Term, or (ii) the Authority will be successful in securing additional water supplies.

(i) In addition to all other remedies available to Participant, if the Authority is not able to acquire additional water supplies necessary for all Participants to achieve and maintain compliance with the Plan during the Contract Term, then: (i) without losing its right to receive the Contract Quantity at the rate for Water established under this Contract, Participant shall have the right, but not the obligation, to import water from any source without being subject to any fees, rates, or charges for said importation of water that may be imposed under this Contract or the Rate Order, and (ii) Participant shall have the right, but not the obligation, to establish its own groundwater reduction plan to comply with the Plan to the limited extent necessary to address such inability to acquire additional water supplies, but Participant shall remain obligated to pay the groundwater pumpage fee established under this Contract for the pumpage from its Wells and to pay for Water as and if delivered by the Project.

(j) The Authority reserves the right to sell water, at any time and at its sole discretion, from any source other than GRP Water.

Section 9.02: The Authority as Participant. The Authority, in its capacity as a Participant, shall have the same rights and privileges and the same duties and obligations as all Participants, including the obligation of a Participant to make full and timely payment of all amounts of the same kind and character as are chargeable to the Authority as a Participant under

Article VI hereof. All amounts so paid by the Authority shall be deposited into the same fund to which similar payments by other Participants are deposited.

Section 9.03: The Authority as GRP Administrator. (a) To facilitate the implementation of the GRP and the discharge of the Authority's obligations under this Contract, the Authority shall, subject to the conditions and limitations herein:

(1) establish and maintain a separate operating division of the Authority with (i) a separate, annual budget that encompasses the annual revenues and expenses of the GRP, the Project, this Contract and contracts with the Participants that are substantially similar to this Contract, and (ii) separate books of account that shall be audited annually;

(2) contract for, lease, or purchase, for the benefit of such separate operating division, the GRP Water and such other properties, services, land, equipment, and facilities, including administrative and management services and facilities, from the Authority, or one or more other operating divisions of the Authority, or from other persons, as may be deemed necessary and proper by the Authority to perform its obligations hereunder; and

(3) allocate to such separate operating division a proportional share of the direct and indirect costs of the Authority's general and administrative, managerial, accounting, legal, fiscal, clerical, human resources, risk management, support services, and technical services related to the performance by the Authority of its obligations hereunder.

(b) Such separate operating division of the Authority shall be operated for the exclusive benefit of the Participants, and not for the use or benefit of any water user other than the Participants, without profit or loss to such separate operating division, such that, except as provided in Section 9.01(h)(1) hereof with respect to sales of excess water, and as otherwise provided in subsections (a) and (b) of this Section 9.03 and Section 11.01, the assets, income, responsibilities, liabilities, and debts of the separate operating division are not a charge against, an obligation or responsibility of, or an asset of or income source to any other operating division of the Authority. Nothing in this subsection shall be deemed or construed to limit or restrict the right and power of the Authority, or one or more of its other operating divisions, to:

(1) prepare, maintain, audit, or report its financial position on a consolidated basis with one or more other operating divisions of the Authority;

(2) use the revenues from the sale of GRP Water for other corporate purposes of the Authority;

(3) sell raw water to such separate operating division from the Authority, or one or more other operating divisions of the Authority, from any source other than GRP Water, at the System Rate, including applicable

reservation fees, or with the approval of the Review Committee, at the generally prevailing and applicable rates for large volume purchases of raw water adopted by the Authority from time to time, including applicable reservation fees, for water from such other sources, and to use the revenues therefrom for other corporate purposes of the Authority;

(4) allocate and charge to such separate operating division reservation fees for such portion of the GRP Water as is owned by the Authority on the Effective Date, based on the generally prevailing and applicable reservations fees adopted from time to time by the Authority, and to use the revenues therefrom for other corporate purposes of the Authority;

(5) allocate and charge to such separate operating division the actual costs, including reservation fees, incurred by the Authority for holding, purchasing, leasing, reserving, optioning, or contracting for the portion of the GRP Water obtained by the Authority under the Houston Contract, or for other water supplies acquired or contracted by the Authority with Project revenues for the benefit of such separate operating division; or

(6) recover or be reimbursed the actual and reasonable costs described in subsection (a) or for any other actual and reasonable costs incurred by the Authority prior to the establishment of such separate operating division that are associated with the development of the WRAP (except to the extent the Authority has already received funds for the WRAP), the GRP, or the Project, or that otherwise specifically pertain to the subject matter of this Contract.

(c) The creation of such separate operating division of the Authority, and the administration of the GRP, the Project, or this Contract by such separate operating division, shall not be construed as an assignment of this Contract by the Authority.

(d) The Parties agree and acknowledge that economies of scale generally benefit all Participants with respect to the implementation of the GRP and the sharing of Project costs. Accordingly, except as otherwise provided in Section 9.01(g) hereof, the Authority agrees to offer all Regulated Users the opportunity to participate in the GRP on terms and conditions that are similar, in all material respects, to this Contract. In addition, if the Authority at any time provides another Participant terms, conditions or benefits that are related to the Project or the GRP and that are more favorable than those provided to the Participant pursuant to this Contract, then the Authority will offer the same terms, conditions and benefits to Participant, which Participant may, at its option, accept or deny; provided, however, the foregoing shall not apply with respect to terms, conditions, or benefits related to (i) a Participant's request for non-mandatory connection to the Project under Section 4.04 hereof that has been considered by the Review Committee, or (ii) a Participant's request for an increase in Contract Quantity under Section 4.09(b) hereof that has been considered by the Review Committee.

(e) The Authority agrees to provide Participant with access to records, reports, and data, pertaining to the Project and/or the GRP, and applicable fees, rates, and charges under this Contract, to the same extent as provided in Section 2.10 hereof with respect to the Review Committee. The Authority agrees that the annual audit of the separate operating division created pursuant to this Section shall be made available by the Authority in digital format by posting same on the Authority's website. The Authority shall cause all meeting agendas of the Review Committee to be posted on the Authority's website at least three (3) business days prior to each such meeting. The Authority shall cause all meeting agendas of the Board of Directors of the Authority that in any way pertain to the GRP, the Project, or this Contract to be posted on the Authority's website at least (3) business days prior to each such meeting.

(f) In addition to any other rights and remedies provided for under this Contract, a Participant shall have the right to appeal a final decision of the GRP Administrator to the Board of Directors of the Authority. Notice of an appeal describing the nature of the appeal must be provided to the General Manager of the Authority within ninety (90) days of the date of such final decision. The Board of Directors of the Authority shall consider such appeal as soon as practicable, but not later than sixty (60) days following the receipt of such appeal by the General Manager. The Board of Directors of the Authority shall fairly consider such appeal and issue a final, written decision and an explanation therefor not later than thirty (30) days following the conclusion of the appeal proceedings. The Authority may, but shall not be obligated to, stay or suspend any such final decision or related actions pertaining to the GRP, the Project, this Contract, and/or the Participant pending such final, written decision. A Participant's failure to appeal shall not be construed to limit or impede, or serve as a precondition to the exercise of, its legal or equitable rights against the Authority.

(g) At all times during the Contract Term, the Authority covenants that it shall maintain the following insurance coverages:

(1) Workers Compensation and Employer's Liability Insurance in form and substance equal to the minimum statutory requirements;

(2) Commercial General Liability Insurance (bodily injury and property damage) on an occurrence basis with a combined single limit of not less than $1,000,000;

(3) Commercial Automobile Liability Insurance, including bodily injury and property damage, on an occurrence basis with a combined single limit of not less than $1,000,000; and

(4) Excess Liability Insurance on an occurrence basis with a minimum of $5,000,000 limit of liability per occurrence.

All such policies shall be open to inspection by Participant and its representatives during regular business hours. In the event of any loss or damage related to the Authority's acts or omissions under this Contract that is recoverable from the Participants hereunder, the Authority covenants that it will look first to proceeds of the insurance policies covering such loss or damage, if and to

the extent such policies afford coverage therefor, before seeking to recover such loss or damage from the Participants as a whole through the rates, fees, and charges imposed under this Contract pursuant to Article VI hereof. In the event that such loss or damage was caused, in whole or in part, from the acts or omissions of particular Participants, the foregoing shall not limit the ability of the Authority to (i) first seek recovery from one or more of such particular Participants to the extent allowed under Section 4.11 hereof, or (ii) impose a charge against one or more of such particular Participants to the extent allowed under Section 6.03 hereof. The costs of such insurance shall be considered a cost of the Project and the GRP and reflected (or a share of the cost therefor allocated) in the budget adopted pursuant to subsection (a)(1)(i).

(h) The Authority covenants that it will at all times keep insured such parts of the Project as may be usual and customary with a responsible insurance company or companies against risks, accidents, or casualties for which, and to the extent, carrying such insurance is the usual and customary practice of political subdivisions of the State of Texas operating similar projects in similar locations and under similar circumstances; provided, however, that at any time while any contactor engaged in construction of all or any portion of the Project shall be fully responsible therefor and required by the contract documents to provide adequate insurance, the Authority shall not be required to carry such insurance with respect to such portion of the Project. All such policies maintained by the Authority, or any certificates of insurance provided by a contractor engaged by the Authority, shall be open to inspection by Participant and its representatives during regular business hours. In the event of any loss or damage, the Authority covenants that to the extent feasible and practicable, it will reconstruct, restore, or repair the destroyed or damaged portion of the Project and will apply the proceeds of the insurance policies covering such loss or damage solely for that purpose. The Authority covenants that it will begin such reconstruction, reservation, or repair within a reasonable time under the circumstances after such loss or damage occurs and will continue to pursue completion of same as expeditiously as possible and will pay, or cause to be paid, all costs and expenses in connection therewith out of such insurance proceeds to the extent available. Any insurance proceeds remaining after the completion of and payment for any such reconstruction, restoration, or repair shall first be deposited to the credit of the interest and sinking fund created or to be created in respect of any Bonds issued to acquire such parts of the Project, and thereafter, equitably distributed, along with any insurance proceeds attributable to such parts of the Project acquired with Project revenues, among the Participants by deposit to the credit of the fund designated by the Authority for the deposit of fees, rates, and charges received from the Participants pursuant to this Contract, or as otherwise reasonably determined by the Authority for the benefit and credit of the Participants. Any deficiency in insurance proceeds to pay for any such reconstruction, restoration, or repairs shall be deemed an operations and maintenance expense of the Project payable from the fund designated by the Authority for the deposit of fees, rates, and charges received from the Participants pursuant to this Contract, except to the extent that the Authority reasonably determines same to be a capital expense payable from any other funds legally available for such purposes. If it is not feasible or practicable for the Project to be reconstructed, restored, or repaired, such insurance proceeds shall be applied first to the payment of any outstanding Bonds, notes, obligations, expenses, or liabilities of the Project or the Authority hereunder, and thereafter shall be equitably distributed among the Participants by deposit to the credit of the fund designated by the Authority for the deposit of fees, rates, and charges received from the

Participants pursuant to this Contract, or as otherwise directed by the Authority for the benefit and credit of the Participants.

(i) To the extent that the Project or any portion thereof shall be taken by condemnation or eminent domain proceedings, any awards or compensation received representing damages for the portion of the Project so taken shall, upon receipt by the Authority, and to the extent feasible and practicable, be applied in the same manner as described in the foregoing subsection (g) relating to insurance proceeds.

(j) The Authority covenants that the properties constituting the Project will not be sold or otherwise disposed of in a third-party transaction resulting in the receipt by the Authority of cash or other compensation, except for a portion or component of the Project comprised of real or personal property reasonably determined as surplus or otherwise immaterial to the Project and disposed of in the ordinary course of business as permitted by the Act or the general laws of the State of Texas. Any such cash or compensation received by the Authority shall first be deposited to the credit of the interest and sinking fund created or to be created in respect of the Bonds, and thereafter shall be equitably distributed among the Participants by deposit to the credit of the fund designated by the Authority for the deposit of fees, rates, and charges received from the Participants pursuant to this Contract, or as otherwise reasonably determined by the Authority for the benefit and credit of the Participants, if and as authorized and permitted by any written order, resolution authorizing the issuance of any Bonds, the proceeds of which are used to acquire such properties, and/or by the Act or the general laws of the State of Texas.

(k) To the extent the Authority is allowed to enter Participant's land under the terms of this Contract or otherwise by law, the Authority's employees or agents shall observe Participant's reasonable rules and regulations concerning safety, internal security, and fire protection, shall provide advance notice to Participant of their presence, except in the event of an emergency, and shall exhibit proper credentials.

Section 9.04: Amendments to Contract. This Contract may be amended or otherwise modified only by a written agreement (i) between the Parties, which amendment may be of a general or specific nature, or (ii) by Participants representing an aggregate total water usage among all Participants during the prior calendar year of not less than eighty-five percent (85%) of such total water usage, which amendment shall be executed by the Authority and such Participants, and shall be generally applicable to all similarly situated Participants.

Section 9.05: Legislative Action. Participant understands and acknowledges that amendments may occur from time to time to the Act, including amendments that could grant the Authority the power to impose a fee for groundwater pumpage and a fee for sale of Water consistent with the terms of this Contract. The Authority reserves the right to seek amendments to the Act. Any legal powers of the Authority, whether established by current statute or otherwise, shall be exercised in a manner not inconsistent with all terms, limitations, and conditions set forth in this Contract.

Section 9.06: Sufficient Income. Participant recognizes its duty to, and covenants and agrees that at all times it will, establish and maintain, and from time to time adjust, the rates,

fees, and charges for its services to customers of Participant's System to the end that the revenues and funds received from such rates, fees, and charges, and any other lawfully available funds, will be sufficient at all times to pay any amount due or to become due from Participant under this Contract.

Section 9.07: Temporary Right of Termination. Either Party may terminate this Contract for any reason and be relieved of any and all obligations hereunder by providing written notice to such effect to the other Party on or before July 15, 2010, at 5:00 p.m. (Houston, Texas time), if, on July 1, 2010, at 5:00 p.m. (Houston, Texas time), the aggregate total groundwater usage (including the Authority's groundwater usage) during calendar year 2009 of all Participants that have executed and delivered a contract to the Authority, in substantially the same form as this Contract, is less than sixty percent (60%) of the aggregate total groundwater usage of all Regulated Users during calendar year 2009, according to the official records of the Conservation District.

ARTICLE X

Performance by the Parties

Section 10.01: *Force majeure*. (a) In the event either Party is rendered unable, wholly or in part, by *force majeure*, to carry out any of its obligations under this Contract, other than the payment of money, it is agreed that on such Party's giving written notice and full particulars of such *force majeure* to the other Party as soon as practicable after occurrence of the cause relied upon, then the obligations of the Party giving such notice, to the extent they are affected by *force majeure* and to the extent that due diligence is being used to resume performance at the earliest practicable time, shall be suspended during the continuance of any inability so caused, but for no longer period. Such cause shall as far as possible be remedied with all reasonable dispatch.

(b) The term "*force majeure*", as used herein, shall include, but not be limited to, acts of God, strikes, lockouts, or other industrial disturbances, acts of the public enemy, war, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, droughts, tornadoes, hurricanes, arrests and restraints of government and people, governmental, regulatory, judicial, or administrative restraint or order, explosions, breakage or damage to machinery, a Well, On-Site Facilities, equipment, pipelines or canals, sudden shortage, sudden insufficiency, failure, interruptions, or curtailment of water or energy supply, and any other inabilities of either Party, whether similar to those enumerated or otherwise, and not within the control of the Party claiming such inability, and which by the exercise of due diligence and care such Party could not have avoided. It is understood and agreed that the settlement of strikes or lockouts shall be entirely within the discretion of the Party having the difficulty, and the above requirement that any *force majeure* be remedied with all reasonable dispatch shall not require the settlement of strikes or lockouts by acceding to the demands of the opposing party when such course is inadvisable in the discretion of the Party having the difficulty.

Section 10.02: Delivery Limitations. If Participant connects to the Project, then Participant is not guaranteed hereunder any specific quantity of Water due to an event of *force majeure* whenever the Project's or the Authority's water supply is interrupted, limited or

insufficient, or when the Project's or the Authority's equipment may become inoperative due to mechanical failure, breakage, failure of power supply, or scheduled maintenance and repairs, nor is Participant guaranteed that Water will be supplied at a specified pressure under any circumstances. The Authority shall provide Participant notice of such scheduled maintenance and repairs at least ten (10) full business days in advance and which notice must specify the anticipated duration of such maintenance and repairs. The Authority is in no case to be held to any liability for failure to furnish any specific pressure of treated water, except that the Authority will comply with Section 4.10 hereof. Further, Participant agrees that any representations to third parties regarding connection to the Project in order to address water quality or quantity issues shall not be binding upon the Authority unless approved by the GRP Administrator in writing.

ARTICLE XI

Default and Remedies

Section 11.01: Liability of the Authority. (a) Participant shall have and reserves the right to recover from the Authority, including by intervention in any legal proceedings of Authority, for any losses, damages, claims, expenses, costs, or judgments, including reasonable attorneys fees and court costs, incurred by Participant due to any act or omission of the Authority that does not constitute gross negligence or willful misconduct by the Authority and that results directly or indirectly from (i) damage described under Section 4.02(c) hereof, (ii) any act or omission relating to the Authority's performance under this Contract, including any breach or violation of this Contract or any laws, rules, or regulatory requirements relating to the Plan, the GRP, or the Project, (iii) improper or inadequate design, construction, permitting, or operation of the Project, or (iv) claims by third parties, including customers of the Project. Any damages or remedies available to Participant pursuant to this subsection (a) shall be a Project cost and a responsibility, liability, and debt of the separate operating division to be created and established pursuant to Section 9.03(a)(1) hereof, and not a responsibility, liability, or debt of any other operating division of the Authority.

(b) Participant shall have and reserves the right to recover from Authority, including by intervention in any legal proceedings of Authority, for any losses, damages, claims, expenses, costs, or judgments, including reasonable attorneys fees and court costs, incurred by Participant due to any act or omission of the Authority that constitutes gross negligence or willful misconduct and that results directly or indirectly from (i) damage described under Section 4.02(c) hereof, (ii) any act or omission relating to the Authority's performance under this Contract, including any breach or violation of this Contract or any laws, rules, or regulatory requirements relating to the Plan, the GRP, or the Project, (iii) improper or inadequate design, construction, permitting, or operation of the Project, or (iv) claims by third parties, including customers of the Project. Any damages or remedies available to Participant pursuant to this subsection (b) shall not be a Project cost and shall be the responsibility, liability, and debt of the Authority, and not of any such separate operating division created and established pursuant to Section 9.03(a)(1) hereof, the Participants, the Project, Project revenues, or the GRP. In any event, the Authority shall not include in the fees, rates, and charges imposed on Participant any losses, damages, interest, expenses, or costs incurred by the Authority that result directly or

indirectly from the gross negligence or willful misconduct of the Authority relative to the aforesaid items (i) through (iv) of this subsection.

(c) Nothing in this Section 11.01 shall be construed to limit the Authority's duties and obligations under Section 9.02 hereof.

(d) Neither the provisions of this Section 11.01, nor the waiver of governmental immunity under Section 11.05 hereof, shall be deemed, construed, or considered as (i) a waiver of governmental immunity by the Authority with respect to any third party, (ii) establishing a particular standard of care with respect to any third party, (iii) waiving any other rights, privileges, remedies, or defenses available to the Authority, at law or in equity, with respect to any third party, or (iv) except as provided in Section 4.02(c) hereof, waiving any rights, privileges, remedies, or defenses for the acts or omissions of any independent contractor of the Authority. All such rights, privileges, remedies, and defenses are hereby reserved by the Authority in all respects. Neither the provisions of this Section 11.01, nor the waiver of governmental immunity under Section 11.05 hereof, shall be deemed, construed, or considered as (i) a waiver of governmental immunity by the Participant with respect to any third party, (ii) establishing a particular standard of care with respect to any third party, or (iii) waiving any other rights, privileges, remedies, or defenses available to the Participant, at law or in equity, with respect to any third party. All such rights, privileges, remedies, and defenses are hereby reserved by the Participant in all respects.

(e) To the extent applicable and permitted by law, each Party shall have available at all times the rights of mandamus and specific performance against the other Party.

Section 11.02: Default and Remedies. (a) Default shall occur in the event either Party (i) fails to timely pay any fees, rates, charges, or other amounts due hereunder ("Payment Default"), or (ii) fails to perform or is in breach or violation of any of its other obligations hereunder ("Performance Default"). In the event of a Payment Default, notice of such default and the time for institution of proceedings for collection of any amounts due shall be given and conducted in the manner provided in this Contract, the applicable provisions of the Rate Order, any other order of the Authority relating thereto, and applicable law. In the event of a Performance Default, the non-defaulting Party shall give the defaulting Party written notice describing such default and demanding cure of such default.

(b) Should a Performance Default not be fully cured within a reasonable time, but not more than sixty (60) days after notice of default has been given to the defaulting Party, or should the defaulting Party deny or dispute such default, the Parties agree to submit such dispute to non-binding mediation in accordance with the provisions of Section 11.03 hereof; provided, however, that either Party may seek injunctive relief, and only injunctive relief, prior to such mediation in order to preserve the *status quo* or to prevent irreparable harm; provided, however, a Party may commence litigation if same could be barred within sixty (60) days by an applicable law or statute of limitations.

(c) Upon conclusion of mediation proceedings or in the event of failure by a defaulting party to mediate timely and in good faith, then except as provided in Section 11.04

hereof, the non-defaulting Party may pursue any and all remedies existing at law and in equity from any court, agency, or other entity with jurisdiction over the subject matter at such time.

Section 11.03: Mediation. (a) The Party seeking to initiate mediation (the "Initiating Party") shall give written notice to the other Party describing in general terms the nature of the dispute and the Initiating Party's claim for relief and identifying one or more individuals with authority to settle the dispute on the Initiating Party's behalf. The Party receiving such notice (the "Responding Party") shall have thirty (30) days within which to designate by written notice to the Initiating Party one or more individuals with authority to settle the dispute on such Party's behalf. The individuals so designated shall be known as the "Authorized Individuals."

(b) The Authorized Individuals shall be entitled to make such investigation of the dispute as they deem appropriate, but agree to meet promptly, and in no event later than thirty (30) days from the date of the Initiating Party's written notice, to discuss resolution of the dispute. The Authorized Individuals shall meet at such times and places and with such frequency as they may agree. If the dispute has not been resolved within thirty (30) days from the date of their initial meeting, the Parties shall cease direct negotiations and shall submit the dispute to mediation in accordance with the procedure set forth below.

(c) The Authorized Individuals shall have five (5) business days from the date they cease direct negotiations to submit to each other a written list of not less than three (3) acceptable qualified mediators not affiliated with either of the Parties. Such list shall rank the mediators in numerical order of preference (e.g., "1" being the highest rank, "3" being the lowest rank). All mediator candidates must satisfy the qualification standards of Texas law, as prescribed under Section 154.052, Texas Civil Practice and Remedies Code. Within five (5) days from the date of receipt of such list, the Authorized Individuals shall rank the mediators submitted by the other Party in numerical order of preference and exchange such rankings. If one or more names are on both lists, the highest ranking person which appears on both lists shall be designated as the mediator. If no name is on both lists, the person receiving the highest combined ranking shall be designated as the mediator. If such mediator is not available to serve, the Parties shall proceed to contact the mediator who was next highest in combined ranking until they are able to select a mediator. In the event of a tie based on such combined ranking, the Review Committee shall break the tie. If a tie cannot be broken by the Review Committee within five (5) days after submission of the Review Committee, mediation shall be concluded.

(d) In consultation with the mediator selected, the Parties shall promptly designate a mutually convenient time and place for the mediation, and unless circumstances require otherwise, such time is to be not later than fifteen (15) days after selection of the mediator.

(e) In the event either Party has substantial need for information in the possession of the other Party in order to prepare for the mediation, the Parties shall attempt in good faith to agree on procedures for the expeditious exchange of such information, with the assistance of the mediator if required.

(f) At least seven (7) days prior to the first scheduled session of the mediation, each Party shall deliver to the mediator and to the other Party a concise written summary of its views on the matter in dispute, and such other matters required by the mediator.

(g) In the mediation, each Party shall be represented by an Authorized Individual and may be represented by counsel. In addition, each Party may, with permission of the mediator, have in attendance such additional persons as are needed to respond to questions, contribute information, and participate in the negotiations.

(h) The mediator shall determine the format for the meetings, designed to assure that both the mediator and the Authorized Individuals have an opportunity to hear an oral presentation of each Party's views on the matter in dispute, and that the Authorized Individuals attempt to negotiate a resolution of the matter in dispute, with or without the assistance of counsel or others, but with the assistance of the mediator. To this end, the mediator is authorized to conduct both joint meetings and separate caucuses with the Parties. The mediation session shall be private. The mediator will keep confidential all information learned in private caucus with any Party unless specifically authorized by such Party to make disclosure of the information to the other Party. The Parties commit to participate in the proceedings in good faith with the intention of resolving the dispute, if at all possible.

(i) The Parties agree to participate in the mediation procedure to its conclusion. The mediation shall be concluded by (i) failure to timely select a mediator, (ii) the execution of a settlement agreement by the Parties, (iii) a declaration of the mediator that the mediation is terminated, or (iv) a written declaration of a non-defaulting Party to the effect that the mediation process is terminated due to failure of the defaulting Party to mediate timely or in good faith, or at the conclusion of one or more mediation sessions lasting a total of not less than eight (8) hours. If a Party withdraws from the mediation by either refusing to participate or terminating mediation before one of the foregoing conditions are satisfied, then such Party shall be liable for all attorney fees and related costs arising from all subsequent litigation of the matter in dispute. If the mediation is terminated without a resolution of the dispute, any Party may commence legal proceedings in addition to any injunctive relief previously sought.

(j) The fees and expenses of the mediator shall be shared equally by the Parties. The foregoing shall not limit the ability of the Authority to treat such costs, including reasonable attorneys and other fees and costs, as a cost of administration and enforcement of the GRP, except in an instance of gross negligence or willful misconduct on the part of the Authority.

(k) Mediation hereunder is a compromise negotiation for purposes of the federal and state rules of Evidence and constitutes privileged communication under Texas law. Except to the extent required by law, the entire mediation process is intended to be confidential, and no stenographic, visual, or audio record shall be made. All conduct, statements, promises, offers, views, and opinions, whether oral or written, made in the course of the mediation by any Party or by an Authorized Individual, or by their agents, employees, representatives, or other invitees, and by the mediator are confidential and shall, in addition and where appropriate, be deemed to be privileged. Such conduct, statements, promises, offers, views, and opinions shall not be discoverable or admissible for any purposes, including impeachment, in any litigation or other

proceeding involving the Parties, and shall not be disclosed to anyone not an Authorized Individual or an agent, employee, expert, witness, or representative of any of the Parties; provided, however, that evidence otherwise discoverable or admissible is not excluded from discovery or admission as a result of its use in the mediation. The mediator shall be disqualified as a witness, consultant, expert or counsel of any Party with respect to the dispute and any related matters in any subsequent litigation.

Section 11.04: Termination Not a Remedy. The Parties agree that termination of this Contract in the event of a default shall not be a remedy available to the Parties; provided, however, that nothing herein shall be deemed or construed to prevent (i) the Authority from suspending or curtailing the delivery of Water to Participant in the event of a Payment Default or Performance Default hereunder that is continuing without cure beyond the time period for cure provided herein; (ii) the Participant from exercising self help under Section 9.01(i) hereof; or (iii) the Participant from terminating this Contract pursuant to Sections 9.07 or 12.02(d) hereof.

Section 11.05: Waiver of Governmental Immunity. The Authority and Participant agree that this Contract constitutes an agreement for the provision of goods and services and is subject to the provisions of the Subchapter I, Chapter 271, Texas Local Government Code, as amended, and any successor statute. In accordance with Sections 271.152 and 271.153 thereof, and as between the Parties, the Authority hereby waives and acknowledges waiver of all constitutional, statutory, or common law right to sovereign or governmental immunity from liability or suit and expressly consents to be sued and to be liable to the limited extent necessary for Participant to enforce this Contract against the Authority.

Section 11.06: Costs. If either Party prevails in any judicial, administrative, or other legal proceedings against the other Party brought under or arising out of this Contract, such prevailing Party shall additionally be entitled to recover court and administrative agency costs and reasonable and necessary attorney fees from the non-prevailing Party to such proceedings. Notwithstanding the foregoing, attorneys fees and costs associated with an administrative hearing pursuant to Texas Water Code Chapters 11, 12, or 13 are recoverable against the non-prevailing Party only in accordance with an order of the TCEQ.

Section 11.07: Enforcement. The General Manager of the Authority, or any Deputy General Manager of the Authority designated by the General Manager, shall have the right to declare the existence of an event of default and/or enforce all legal rights and obligations under this Contract without further authorization by the Board of Directors of the Authority.

Section 11.08: Choice of Law; Venue. This Contract shall be governed by the laws of the State of Texas, and venue shall be in a court of competent jurisdiction located in Montgomery County, Texas.

Section 11.09: No Additional Waiver Implied. The failure of either Party hereto to insist, in any one or more instances, upon performance of any of the terms, covenants, or conditions of this Contract shall not be construed as a waiver or relinquishment of the future performance of any such term, covenant, or condition by the other Party hereto, but the obligation of such other Party with respect to such future performance shall continue in full force and effect.

ARTICLE XII

Term

Section 12.01: Contract Term. This Contract shall be in force and effect from and after the Effective Date and shall expire on the later of (i) December 31, 2045, or (ii) the date of retirement of all of the Authority's then outstanding Bonds and discharge of any remaining obligations of the Authority incurred under or pursuant to this Contract (the "Contract Term"), so as to afford the Authority a reasonable time period to conclude its affairs related to this Contract. Any and all obligations of Participant to make payments to the Authority, to the extent such obligations were incurred prior to termination of this Contract, shall survive any expiration or termination of this Contract.

Section 12.02: Termination. (a) Either Party may terminate this Contract after July 1, 2010, and until 5:00 p.m. on July 15, 2010, as provided in Section 9.07 hereof.

(b) The Parties acknowledge that a material consideration of the Authority in entering into this Contract is that Participant does not have, and will not have, during the Contract Term, original jurisdiction under Chapter 13, Texas Water Code, or any similar law, rule or regulation currently in effect or hereafter enacted or adopted, over the raw water rates or reservation fees established by the Authority from time to time ("Original Jurisdiction"). Accordingly, in the event of a change in any such law, rule, or regulation that would provide Participant Original Jurisdiction, and the initiation of proceedings by Participant or the taking of any similar overt action by Participant to assert Original Jurisdiction, the Authority shall have the right, but not the obligation, to terminate this Contract; provided, however, that prior to such termination, the Authority will give Participant written notice of the Authority's intent to terminate and give Participant a reasonable opportunity to cease such proceedings or such similar overt action. If Participant promptly ceases such proceedings or such similar overt action, then the Authority shall not terminate this Contract.

(c) This Contract may not be terminated as a result of a default by either Party.

(d) Except as provided above in this section, or in this subsection, this Contract may only be terminated prior to the expiration of the Contract Term by mutual, written agreement of the Parties. The Authority may enter into an agreement with Participant for the termination of this Contract prior to the expiration of the Contract Term, but only upon (i) Participant's agreement therein to pay its pro-rata share of the Bonds or other obligations of the Authority issued or incurred in connection with the Project or the GRP pursuant to Article VIII hereof, which pro-rata share must be determined by the GRP Administrator, presented to the Review Committee for recommendations, and approved by the Board of Directors of the Authority; and (ii) the reasonable determination by the GRP Administrator that such termination will not adversely affect the GRP or the other Participants.

Section 12.03: Continuation of Service. If Participant has connected to the Project, or has been provided a notice to connect to the Project under Section 4.05 hereof, the Authority agrees

to continue to provide Water to Participant after the expiration of the Contract Term, but not after termination of this Contract (except for termination pursuant to Section 13.02(a) hereof), in quantities and on terms and conditions substantially similar to those set forth in this Contract, and at rates then payable by similarly situated customers of the Authority, for so long as the Authority has available sufficient water supplies from GRP Water to do so. This Section 12.03 shall survive the expiration of the Contract Term or the termination of this Contract pursuant to Section 13.02(a) hereof, but not the termination of this Contract for any other reason.

ARTICLE XIII

Miscellaneous Provisions

Section 13.01: Contract Subject to Laws and Regulations. This Contract shall be subject to all present and future valid and applicable laws, orders, rules, and regulations of the United States of America, the State of Texas, or any regulatory body having jurisdiction. The Authority shall not adopt, implement, or enforce any provision of its Rate Order, Rules, regulations, or any written order of the Authority that is contrary to, inconsistent with, or prohibited by the terms and provisions of this Contract. The Authority will not exercise its legal or statutory powers, as either of same may be amended hereafter, in a manner that is contrary to, inconsistent with, or prohibited by the terms and provisions of this Contract.

Section 13.02: Severability and Reformation. (a) If any provision of this Contract or any like provision of a substantially similar contract with any other Participant(s), other than the right of termination by the Authority pursuant to Section 12.02(b) hereof or any like provision of a substantially similar contract with any other Participant(s), is held by a final and non-appealable decision of a court of competent jurisdiction to be unenforceable or violative of laws, orders, rules, or regulations of the United States of America, the State of Texas, or any regulatory body having jurisdiction, all other parts hereof remain enforceable unless the result materially prejudices either Party. In the event of such a determination with respect to Section 12.02(b) hereof or any like provision of a substantially similar contract with any other Participant(s), and in the event that any Participant (other than the Authority) should before, contemporaneously with, or after such determination acquire Original Jurisdiction, then this Contract is automatically terminated as of the effective date of the later of such events, but Section 12.03 hereof shall survive such termination (i) for a reasonable period of time to permit the Parties and other Participants to mutually agree upon a reformation of this Contract and the other Participant contracts, or (ii) until a Participant or former Participant shall initiate proceedings or take any similar overt action to assert Original Jurisdiction.

(b) Except as provided in subsection (a) above, where any procedure hereunder may be held by a court of competent jurisdiction to be unenforceable or violative of any State or Federal statutory or constitutional provision, the Parties shall have the power by resolution, and the obligation, to adopt and promulgate reasonable and necessary alternative procedures which will conform thereto, and the Parties agree that they would have entered into this Contract without regard to such unenforceability or violative procedure.

Section 13.03: Notices. (a) Until the Authority is otherwise notified in writing by Participant, the address of Participant is and shall remain as follows:

1404 Blaketree L.P.
2701 Dallas Parkway, Suite 590
Plano, Texas 75093
Telefax: (972) 980-9705
E-mail: Jim@dugganrealty.com

Until Participant is otherwise notified in writing by the Authority, the addresses of the GRP Administrator and the Authority are and shall remain as follows:

General Manager/GRP Administrator
San Jacinto River Authority
1577 Dam Site Road
Conroe, Texas 77304
Telefax: (936) 588-3043
E-mail: legalnotices@sjra.net

(b) All written notices required or permitted to be given under this Contract from one Party to the other shall be given (i) by telefax or e-mail to the other Party at the telefax number or e-mail address set forth above, with a hard copy of same mailed within forty-eight (48) hours by certified mail (return receipt requested), with proper postage affixed thereto and addressed to the other Party at the address set forth above, or at such other address as the other Party may designate by written notice, or (ii) by the mailing of same by certified mail (return receipt requested), with proper postage affixed thereto and addressed to the other Party at the address set forth above or at such other address as the other Party may designate by written notice. Notice by telefax or e-mail shall be effective upon actual receipt. Notice by certified mail shall be effective when actually received, as reflected on the corresponding return receipt.

Section 13.04: Approvals; Execution by General Manager. (a) Unless otherwise expressly provided for herein, any consent or approval of the Parties shall be evidenced by an order or resolution duly adopted by the governing body of the Party, or an appropriate certificate executed by a person, firm, or entity previously authorized to determine and give such approval or consent on behalf of the Party pursuant to an ordinance, resolution, or other appropriate instrument adopted by the governing body or managing authority of such Party.

(b) Notwithstanding the above, the Board of Directors of the Authority has duly authorized the execution of this Contract by the General Manager of the Authority, and any approvals or consents required under this Contract may be given by the General Manager or the GRP Administrator, unless otherwise expressly provided herein.

Section 13.05: Parties in Interest. This Contract shall be for the sole and exclusive benefit of Participant and the Authority, and shall not be construed to confer any rights upon any other person, including, without limitation, any customer of Participant's System.

Section 13.06: Assignments. This Contract shall bind and benefit the respective Parties and their legal successors, but shall not otherwise be generally assignable, in whole or in part, by either Party without first obtaining the written consent of the other. This provision against assignment shall not apply in the event of an assignment by operation of law resulting from merger, acquisition, or consolidation, or a municipality succeeding to the assets and liabilities of Participant, in which case this Contract shall remain in full force and effect and the succeeding person shall be entitled to the benefits and shall assume and be bound by the obligations of Participant hereunder.

Section 13.07: Reservation of Rights. All rights, powers, privileges, and authority of the Parties not governed, restricted, or affected by the express terms and provisions of this Contract shall be and are hereby reserved by the Parties and may be exercised and enforced from time to time and as often as may be deemed necessary and proper by the Parties.

Section 13.08: Merger. This Contract contains all the agreements made between the Parties relative to the subject matters addressed hereinabove.

Section 13.09: Authority to Enter Into Contract. Each Party represents and warrants to the other Party that it is authorized to enter into this Contract by the Constitution and laws of the State of Texas.

[SIGNATURES COMMENCE ON THE FOLLOWING PAGE]

IN WITNESS WHEREOF, the parties hereto to have signed this Contract in multiple copies, each of which shall be deemed to be an original, but all of which shall constitute but one and the same contract, as of the Effective Date.

SAN JACINTO RIVER AUTHORITY

[SEAL]

By: _____
Reed Eichelberger, P.E.
General Manager
Date: 7-7-10

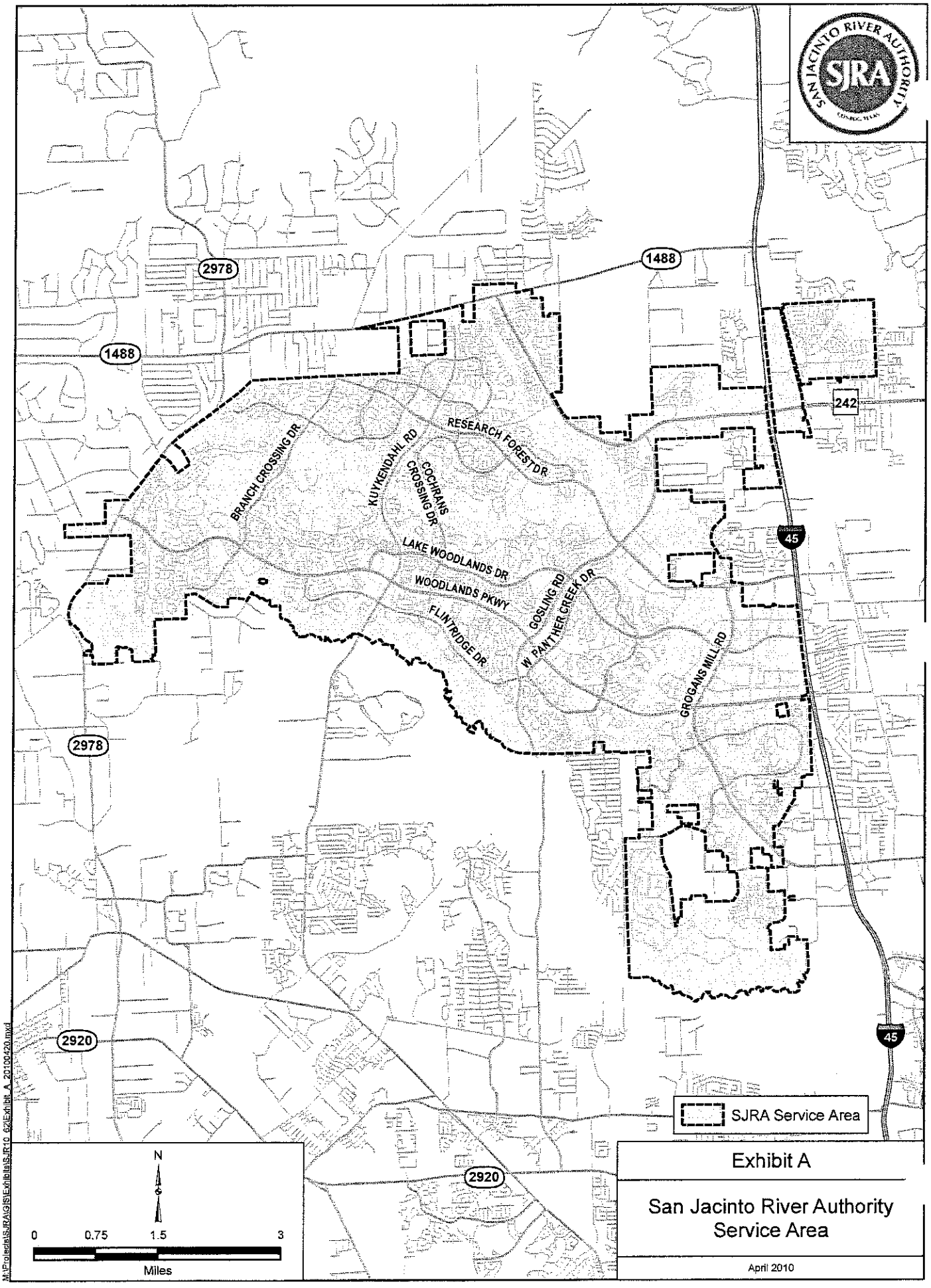
1404 BLAKETREE, L.P., a Texas limited partnership

By: 1404 Blaketree GP, LLC, a Texas limited liability company, its General Partner

By: _____
James F. Duggan, Manager
Date: 7-7-10

Exhibit A

San Jacinto River Authority Service Area


SAN JACINTO RIVER AUTHORITY
SJRA
2978
1488
1488
242
RESEARCH FOREST DR
BRANCH CROSSING DR
KUYKENDAHL RD
COCHRANS CROSSING DR
LAKE WOODLANDS DR
WOODLANDS PKWY
FLINTRIDGE DR
GOSLING RD
W PANTHER CREEK DR
GROGANS MILL RD
45
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2978
2920
2920
SJRA Service Area
N
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0.75
1.5
3
Miles
Exhibit A
San Jacinto River Authority
Service Area
April 2010
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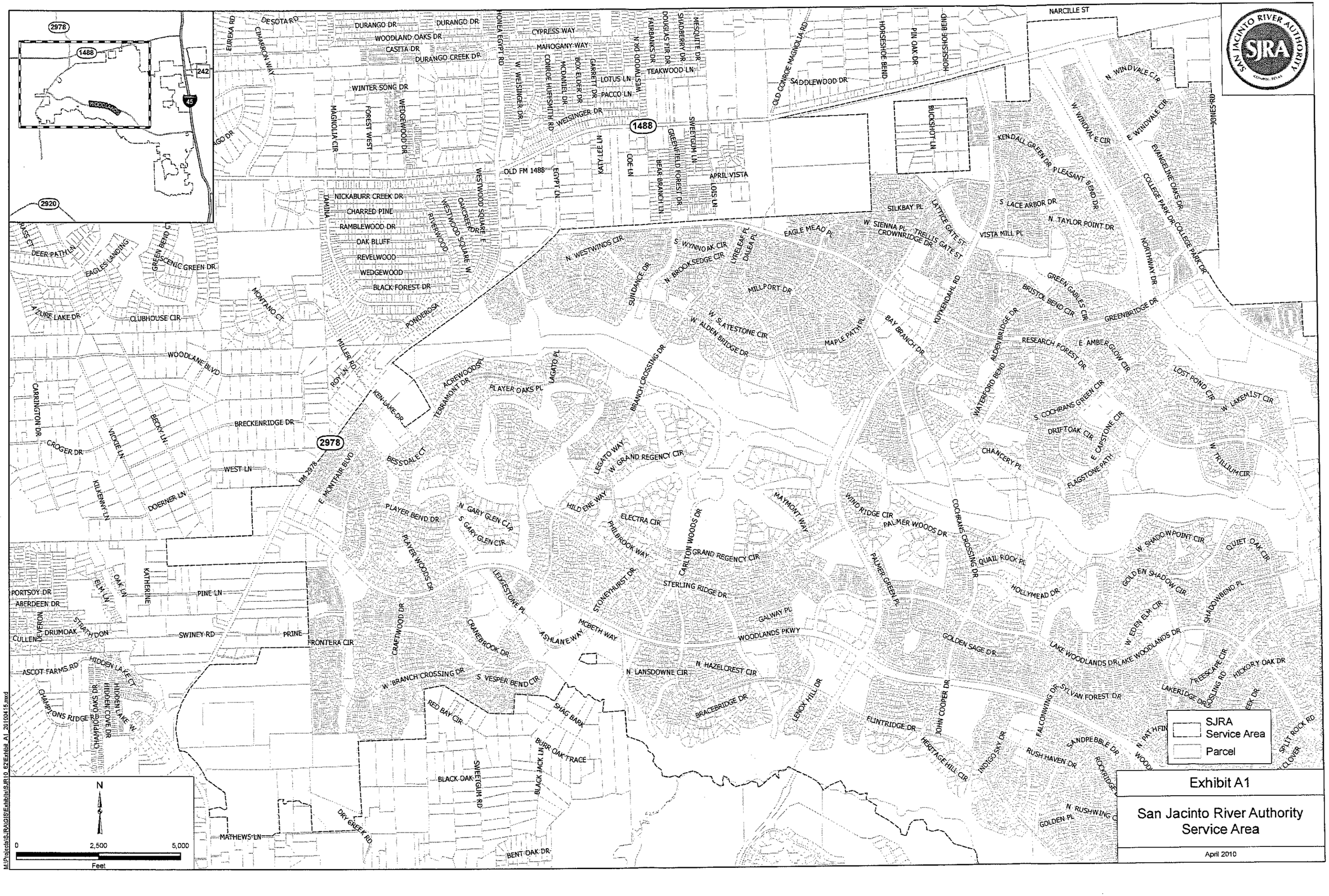

Exhibit A1

San Jacinto River Authority Service Area

April 2010


2978
1488
242
45
2920
WOODLANDS
SJRA
SAN JACINTO RIVER AUTHORITY
HORSESHOE BEND
PIN OAK DR
FM 1488
1488
BUCKSHOT LN
N WINDVALE CIR
W WINDVALE CIR
E WINDVALE CIR
JONES RD
KENDALL GREEN DR
PLEASANT BEND DR
EVANGELINE OAKS DR
COLLEGE PARK DR
SILKBAY PL
LATTICE GATE ST
S LACE ARBOR DR
N TAYLOR POINT DR
VISTA MILL PL
TRELLIS GATE ST
NORTHWAY DR
TENNA PL
CROWNRIDGE DR
EAGLE MEAD PL
S WYNNOAK CIR
BRANCH CROSSING DR
LYRELEAF PL
DALEA PL
MILLPORT DR
W SLATESTONE CIR
W ALDEN BRIDGE DR
MAPLE PATH PL
BAY BRANCH DR
KUYKENDAHL RD
ALDEN BRIDGE DR
BRISTOL BEND CIR
GREEN GABLES CIR
GREENBRIDGE DR
N FLORAL LEAF CIR
E AMBERGLOW CIR
WATERFORD BEND
S COCHRANS GREEN CIR
DRIFTOAK CIR
E CAPSTONE CIR
FLAGSTONE PATH
CHANCERY PL
LOST POND CIR
W LAKEMIST CIR
W TRILLIUM CIR
RESEARCH FOREST DR
TERRAGLEN DR
ALDEN WOODS DR
GOSLING RD
SCHOETTLE RD
GUINN RD
KOENIG LN
PINE ACRES RD
PEOPLES RD
WINDSOR LAKES BLVD
SADDLE & SURREY LN
GLEN HAVEN DR
BROOK HOLLOW DR
HARPERS LANDING DR
MISTY DAWN DR
N BLAIR BRIDGE DR
N WIMBERLY WAY
WIMBERLY WAY
WOODHOLLOW DR
WARBLER DR
BOBOLINK DR
TRADE CENTER PKWY
GENESEE RIDGE DR
CASSOWARY DR
FAIRWIND TRAIL DR
DONWICK DR
SANDY OAKS DR
FLAMINGO
CONDOR DR
ORIOLE
S TRADE CENTER PKWY
JETOMA
BONEY RD
HOLLOW OAKS DR
SH 242
WOOD LAKE VILLAGE
BIG OAKS DR
SPINDLE OAKS DR
SPRAWLING OAKS DR
MOSS OAKS DR
GREY OAKS DR
BENDING OAKS DR
GLENEAGLE DR S
FIREHOUSE RD
MABRY MILL LN
OLEANDER TRL
GLENOAKS DR
CHARTER CLUB DR
COLLEGE PARK DR
CRAPPIE TRL
ROCK BASS RD
WHITE BASS
CATFISH LN
BULLEROG LN
HOPE RD
ST LUKES WAY
FELLOWSHIP DR
NORTHLINE RD
CENTERLINE RD
SOUTHLINE RD
WEST LOOP RD
E LOOP RD
MARSICO PL
PRENTICE RD
BILL SMITH RD
COUNTRY LN
LARK LN
SHENANDOAH PARK DR
VISION PARK BLVD
ED ENGLISH DR
RED BIRD LN
FOREST LN
SILVERSTONE LN
WELLMAN RD
BELLA LUCE
BELLA SOLE
THORNWOOD
ROSEWOOD DR
SHENANDOAH DR
BLUE RIDGE DR
HICKORY RIDGE DR
SAVANNAH DR
OVERLYN PL
PROSEWOOD DR
NEW TRAILS DR
RESEARCH PARK DR
VAN ALLEN DR
BROADWAY AVE
JOHNSON RD
TERRI LN
TAMINA RD
EASLEY
BIMMS DR
SIMMONS DR
PINECROFT DR
MCCOWN ST
MAIN
PIER
CAR
SLEEPY HOLLOW RD
OAK RIDGE SCHO
LAKE FRONT CIR
SUSAN LN
PINE MANOR DR
W MIMMS LN
PATSY LN
CACTUS DR
SH 242
MAYMONT WAY
WIND RIDGE CIR
PALMER WOODS DR
COCHRANS CROSSING DR
QUAIL ROCK PL
CARLTON WOODS DR
GRAND REGENCY CIR
PALMER GREEN PL
OLD STERLING CIR
STERLING RIDGE DR
GALWAY PL
HOLLYMEAD DR
W SHADOW POINT CIR
QUIET OAK CIR
GOLDEN SHADOW CIR
SHADOWBEND PL
W EDEN ELM CIR
GOLDEN SAGE DR
N HAZELCREST CIR
BRACEBRIDGE DR
LENOX HILL DR
JOHN COOPER DR
WOODLANDS PKWY
SYLVAN FOREST DR
FLINTRIDGE DR
HERITAGE HILL CIR
INDIGO SKY DR
FALCONWING DR
SANDPEBBLE DR
RUSH HAVEN DR
ROCKRIDGE DR
N RUSHWING CIR
GOLDEN PL
BREEZY POINT PL
TREESCAPE CIR
LAKERIDGE DR
N PAT HEINDERS CIR
S PANTHER CREEK DR
WOODLANDS PKWY
LAKE WOODLANDS DR
W PANTHER CREEK DR
SPLIT ROCK RD
LAKE WOODLANDS DR
N PANTHER CREEK DR
SMOKESTONE DR
N CRESCENT RIDGE DR
HEWITT DR
N BERRYLINE CIR
S BERRYLINE CIR
INDIAN CLOVER
WEDGEWOOD FOREST DR
WOODRUSH DR
E PANTHER CREEK DR
S WINDSAIL PL
EAST SHORE DR
GROGANS MILL RD
LAKE ROBBINS DR
SIX PINES DR
N
0
2,500
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Feet
SJRA Service Area
Parcel
Exhibit A2
San Jacinto River Authority Service Area
April 2010
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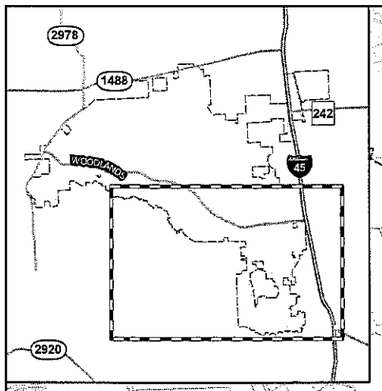


SAN JACINTO RIVER AUTHORITY
SJRA

SJRA Service Area
Parcel

Exhibit A3

San Jacinto River Authority Service Area

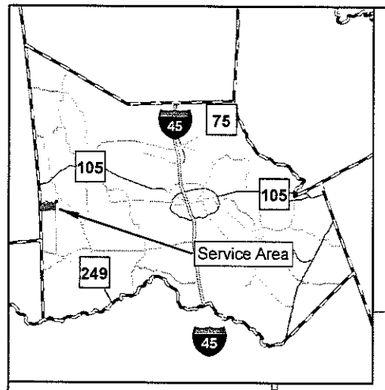
April 2010

N
0
2,500
5,000
Feet

M:\Projects\SJRA\GIS\Exhibits\SJR10_62\Exhibit_A3_20100415.mxd

Exhibit B

1404 Blaketree, LP Service Area



Montgomery County
Grimes County

MOON CAMP RD

1486

S FM 1486

CROWN RANCH BLVD

N

0 1,000 2,000

Feet

Service Area
Parcel

Exhibit B

1404 Blaketree, LP
Service Area

April 2010

M:\Projects\SJRA\GIS\Exhibits\SJR10_62\Participants\WORKING_20100421.mxd

Exhibit C

1404 Blaketree, LP Well Permits

Lone St Groundwater Conservation Distr
PO Box 2467
Conroe, Texas 77305
Phone: (936) 494-3436 Metro: (936) 441-3437 Fax: (936) 494-3438
Email: lsgcd@consolidated.net Web Site: www.lonestargcd.org

OPERATING PERMIT

PERMIT NO.: #OP-07120602A

RECEIVED
JAN 28 2009
BY:----------

I. PERMITTEE:

1404 Blaketree, LP
Attn: Leif J Erickson
2701Dallas Parkway, suite 590
Dallas, TX 75093

II. NUMBER OF WELLS COVERED BY PERMIT:

2 existing wells through OP

III. LOCATION OF WELL(S):

4430 South FM 1486 (Lake Well), Montgomery

IV. WELL REGISTRATION NUMBER AND PERMIT HISTORY:

Well Registration #'s: 2007120603 & 2007120604
Permit History: OP-07120602 (2 wells and request for 41,000,000) superseded by this permit

V. PERMIT TERM:

Date of Issue:	January 1, 2008
Expiration Date:	December 31, 2009

VI. PURPOSE OF USE:

Irrigation

VII. AUTHORIZED WITHDRAWAL:

Only that which is required without being wasteful during the permit term, but not to exceed 55,000,000 gallons in 2008 and 55,000,000 gallons on an annualized basis thereafter.

VIII. PROVISIONS:

1. This permit is issued in accordance with the provisions of the Rules of the District, and acceptance of this permit constitutes an acknowledgement and agreement that that the permittee will comply with the Rules of the District and the terms and conditions of this permit and that the permittee is bound by such Rules, terms and conditions; such acknowledgement and agreement by the permittee is a condition precedent to the granting and issuance of this permit.
2. This permit,confers only the right to use the permit in accordance with the terms of the permit and the Rules of the District. The issuance of this permit does not grant to the permittee the right to use private property, or public property, for the production or conveyance of water. Neither does this permit authorize the invasion of any personal rights nor the violation of federal, state, or local laws, or any regulations.
3. All water withdrawn under this permit must be put to beneficial use at all times.
4. The site of any well covered by this permit must be accessible to District representatives for inspection, and the permittee agrees to cooperate fully in any reasonable inspection of any well or well site by District representatives.

5. The application pursuant to which this permit has been issued is incorporated in this permit, and this permit is issued on the basis of and contingent upon the accuracy of the information supplied in that application. A finding that false information has been supplied in the application is grounds for immediate revocation of this permit.
6. A substantial change to this permit may be made only after application to and approval by the District to so amend.
7. The permittee of this permit shall equip the well or wells covered by this permit with a meter or meters prior to producing from the well after December 31, 2002, and shall pay to the District fees in accordance with the fee schedule of the District and the requirements of the District's Rules.
8. The validity of this permit is contingent upon payment by the permittee of all applicable fees as set forth under the District's Rules.
9. No later than February 15 of each year, the permittee of this permit must submit a report to the District in accordance with District Rule 3.12(i).
10. This permit is issued subject to: (1) the proportional adjustment regulations of the District; (2) protection of Historic Use Permits issued by the District; (3) exempt uses; (4) the District's management plan; (5) the District's Rules as they exist now or as they may be amended in the future; and (6) the continuing right of the District to supervise and regulate groundwater production from the aquifers within the District's boundaries, as authorized by Chapter 36, Texas Water Code, as amended.
11. All other matters requested in the application, which are not specifically granted by this permit, are denied.
12. The District makes no representations and shall have no responsibility with respect to the availability or quality of water authorized to be produced under this permit.
13. The District reserves the right to amend the District's Rules to allocate within a management zone water that is available for production under Operating Permits, including reducing the amount of water that may be available for production under such a permit, including this permit.
14. No person shall drill, equip, complete, substantially alter, operate, or produce groundwater from a well in violation of District Rule 3.12. A violation of Rule 3.12 occurs on the first day the unauthorized activity occurs and continues each day thereafter until the permit or amendment is issued, if any.
15. Permits issued that authorize drilling, equipping, completing, or substantially altering the size or capacity of a well shall be valid for a term not to exceed one year from the date of issuance to complete those activities and begin producing in accordance with the terms of the permit, unless the applicant has applied for and been granted an extension. Such extensions shall only be granted once and shall not be valid for more than an additional one-year period. Thereafter, the applicant must file a new Operating Permit application. A driller's log and report must be filed with the District within 60 days of completion as required by Rule 3.3.

DATED, ISSUED, AND EXECUTED THIS 9th day of December 2008; **TO BE EFFECTIVE ON THE** 1st day of January 2008.

PERMITTEE:

Signature

LJ Erickson

Printed Name

Manager

Title

DISTRICT:

Kathy Turner Jones
General Manager
Lone Star Groundwater Conservation District

Exhibit D

1404 Blaketree, LP Historical Use

Exhibit D

1404 Blaketree, LP

Historical Use

Year	Reported Pumpage[1]	
	Gallons / Year	MGD
2002	0	0.00
2003	0	0.00
2004	0	0.00
2005	0	0.00
2006	0	0.00
2007	300,000	0.00
2008	50,937,000	0.14
2009	42,841,500	0.12

Notes

(1) Latest Available Pump Data as Furnished by Lone Star Groundwater Conservation District

Exhibit E

1404 Blaketree, LP Projected Future Demands

Exhibit E

1404 Blaketree, LP

Projected Future Demands

Year	MGD[1]
2015	0.14
2025	0.14
2035	0.14
2045	0.14

Notes

(1) Provided by Blaketree, LP June 2010

Exhibit F

Conceptual Project Layout

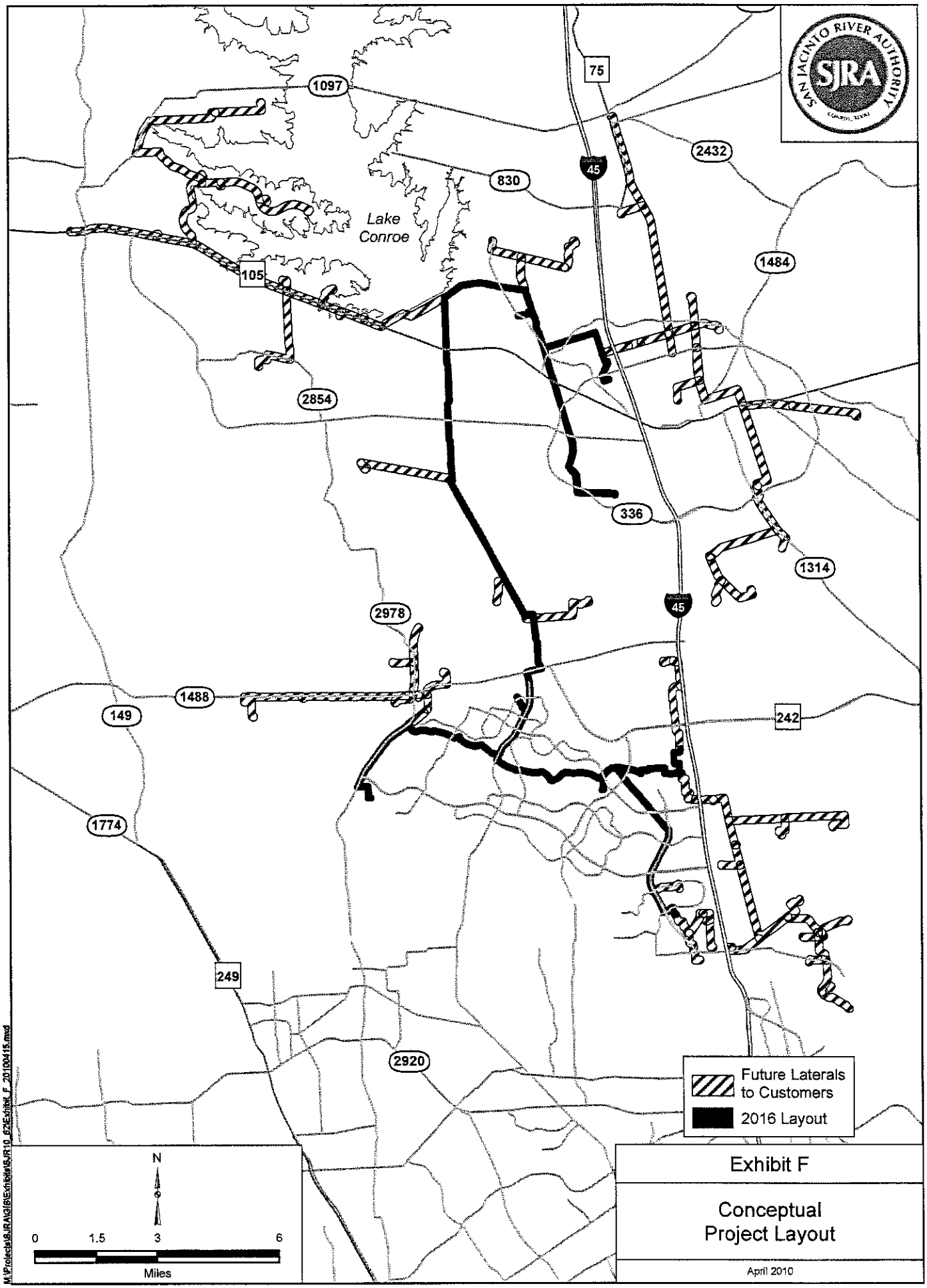

SAN JACINTO RIVER AUTHORITY
SJRA
1097
75
2432
830
45
Lake
Conroe
1484
105
2854
336
1314
45
2978
1488
149
242
1774
249
2920
Future Laterals
to Customers
2016 Layout
N
0
1.5
3
6
Miles
Exhibit F
Conceptual
Project Layout
April 2010
M:\Projects\SJRA\GIS\Exhibits\SJR10_EXE.xfbk_F_20100415.mxd

Exhibit G

Form of Easement

WATER LINE [, METER] AND ACCESS EASEMENT
(_____)[1]

THE STATE OF TEXAS §
§ KNOW ALL PERSONS BY THESE PRESENTS:
COUNTY OF MONTGOMERY §

THAT _____, a _____ ("Grantor"), whose address is _____, for and in consideration of the sum of Ten & No/100 Dollars ($10.00) and other good and valuable consideration to Grantor in hand paid by the SAN JACINTO RIVER AUTHORITY ("Grantee"), a body politic and corporate and a governmental agency of the State of Texas organized under the provisions of Article XVI, Section 59, Texas Constitution, whose address is 1577 Dam Site Road, Conroe, Texas, 77304, the receipt and sufficiency of which are hereby acknowledged and confessed, has GRANTED, SOLD, and CONVEYED, and by these presents does GRANT, SELL, and CONVEY, unto Grantee a perpetual right-of-way and easement (the "Easement") to lay, construct, alter, maintain, inspect, operate, service, repair, replace, relocate, change the size of, protect, patrol, and remove one or more pipelines for the transportation of water, together with appurtenances thereto and equipment ancillary to the operation thereof, including, but not limited to, laterals, taps, fittings, valves, regulators, meters, electrical equipment and control panel facilities, vaults, cathodic protection equipment and above-ground cathodic protection test stations, markers, air valve assemblies, service manholes, air vent pipes (not to exceed seventy-two inches (72") in height, measured from final grade after construction), and protective bollards (such pipeline(s), appurtenances, and ancillary equipment being referred to herein collectively as the "Facilities"), subject to the terms and provisions hereinafter set forth, in, over, under, across, and through that certain tract or parcel of land being more particularly described by metes and bounds on Exhibit 1 (the "Easement Tract"), attached hereto and incorporated herein by this reference for all purposes, out of that certain _____ acre tract of land described in that certain _____ recorded in the Official Public Records of Real Property of Montgomery County, Texas, under Clerk's File No. _____ (the "Site").

Grantee shall have access across, along, under, over and upon the Easement Tract to engage in all activities as may be necessary, requisite, convenient, or appropriate to effectuate the purpose for which this Easement is granted. Grantee's rights shall include, without limitation, the right to clear and remove trees, growth, shrubbery, and other improvements from within the Easement Tract, the right to bring and operate such equipment thereupon as may be necessary or appropriate to effectuate the purpose for which the Easement is granted, and the right of ingress, egress, and regress onto and across the Site for any purposes for which this Easement is granted, all at Grantee's sole expense. Grantee's access to the Site shall occur by use

[1] Please contact the GRP Administrator and inquire if there is particular easement, water line, project or other project identification information to be included here.

of a dual-lock system under which Grantor's representatives access the Site through use of one of said locks and Grantee's representatives access the Site through use of the other of said locks; provided, however, that if in connection with any of Grantee's activities, Grantee removes any of Grantor's permanent fencing around the Site, then Grantee shall erect and maintain, at Grantee's sole expense, temporary fencing until Grantee reinstalls such permanent fencing.

In connection with Grantee's control panel and other components of the Facilities, Grantee may install, own and maintain sensor equipment at, on, or about Grantor's ground storage tank (or other water plant facilities) located on the Site and electrical and control connections by conduit pipe (or other means) connecting such sensor equipment to any other portion of the Facilities (collectively, the "Sensor Line and Equipment"). Grantee shall, at Grantee's sole expense, restore the surface of the Easement Tract and any other portion of the surface of the Site, if disturbed by Grantee, as nearly as possible to the prior condition.

Grantee, and not Grantor, shall be responsible to own, operate and maintain the Sensor Line and Equipment and the other Facilities installed by Grantee (collectively, "Grantee's Facilities"). Grantor, and not Grantee, shall be responsible to own, operate and maintain all other equipment, facilities, tank(s), building(s), materials, well(s) and/or structures on the Site (collectively, "Grantor's Facilities"). In the event Grantee damages Grantor's Facilities, Grantee will be responsible for the reasonable costs to repair or replace same. In the event Grantor damages Grantee's Facilities, Grantor will be responsible for the reasonable costs to repair or replace same. In the event of any such damage, the party who committed the damage shall immediately notify the other party of such damage.

This Easement is non-exclusive. It is expressly provided that Grantor reserves unto itself, its successors, substitutes and assigns, all other rights in and to the Easement Tract which do not unreasonably interfere with or prevent the use of the Easement herein granted and conveyed to Grantee, except for the construction of fences (other than perimeter fencing around the Site which may encroach upon the Easement Tract), houses, buildings and above-ground structures or improvements, which Grantor shall not be entitled to construct on or across the Easement Tract without Grantee's prior written consent, which consent shall not be unreasonably withheld provided that the installation of same will not interfere with or prevent the use of the Easement herein granted and conveyed to Grantee for the purposes intended. Further, Grantor shall not cause the installation of underground lines, utilities or like facilities within the Easement Tract without the prior written consent of Grantee, which consent shall not be unreasonably withheld, provided that in no event shall the installation of such facilities unreasonably interfere with or prevent the use of the Easement herein granted and conveyed to Grantee for the purposes intended. Grantor shall submit plans and specifications for the installation of underground lines, utilities or like facilities within the Easement Tract to Grantee at the above address for review and approval. After receipt of said plans and specifications by Grantee, Grantee shall have forty five (45) days following submittal, or ten (10) days following any re-submittal, to review and approve or reject same in writing. If Grantee rejects the plans and specifications so submitted, Grantee shall identify the reasons for such rejection in writing to Grantor. Grantor shall not cause, and Grantee, at Grantor's expense, shall have the right to prevent or remove any obstruction of the Easement Tract that interferes with or prevents the use of the Easement herein granted and conveyed to Grantee. Notwithstanding any other provision of this Easement

document, Grantor shall not be required to remove, and Grantor is authorized to maintain, operate, replace and repair any waterline(s) and facilities that Grantor currently has located within the Easement Tract; provided, however, Grantor shall not hereafter install any additional waterline(s) or facilities within the Easement Tract without first obtaining written consent from Grantee in the manner prescribed in this paragraph. With respect to the foregoing, any action to be taken by Grantee may be taken by any duly authorized representative of Grantee, including but not limited to Grantee's general manager, deputy general manager(s), engineers or attorneys.

The terms and provisions of the preceding paragraph shall be deemed to be restrictive covenants encumbering and running with the land covered by the Easement Tract and shall be binding upon Grantor and all persons or entities claiming title (or any interest in title) by, through, or under Grantor, and their respective successors and assigns. In particular, and without limiting the generality of the foregoing, each successive purchaser of, or successive right holder (including, without limitation, easement right holder) within, the land covered by the Easement Tract, upon purchase thereof or acquisition of right therein, is bound by the requirements of the preceding paragraph.

This conveyance is further made subject to any and all restrictions, covenants, easements, rights-of-way, encumbrances and mineral or royalty reservations or interests affecting the property and appearing of record in the Official Public Records of Real Property of Montgomery County, Texas, to the extent that said items and matters are in effect and validly enforceable against the Easement granted herein.

TO HAVE AND TO HOLD the above described Easement, together with all and singular the rights and appurtenances thereto in anywise belonging, including all necessary rights of ingress, egress, and regress, unto Grantee, its successors and assigns, forever; and Grantor does hereby bind Grantor and Grantor's successors, substitutes and assigns to WARRANT AND FOREVER DEFEND, all and singular, the Easement unto Grantee, and its successors, substitutes and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof by, through or under Grantor, but not otherwise, subject to all of the terms, conditions, provisions and limitations hereinabove set forth and provided.

Grantee, acting herein by and through the undersigned, pursuant to the authority granted at a meeting duly and lawfully called and convened, joins in the execution hereof for purposes of evidencing its acceptance of this Easement and its agreement on behalf of itself, its successors and assigns, with all of the terms, conditions, and covenants herein set out.

[SIGNATURES COMMENCE ON FOLLOWING PAGE]

EXECUTED this ____ day of _____, 20___.

_____

By: _____

Name: _____

Title: _____

THE STATE OF _____ §
§
COUNTY OF _____ §

This instrument was acknowledged before me on this ___ day of _____, 20___, by _____, the _____ of _____.

_____
Notary Public in and for the
State of _____

(SEAL)

ACCEPTED this ____ day of _____, 20___.

SAN JACINTO RIVER AUTHORITY

By: _____

Name: _____

Title: _____

THE STATE OF TEXAS §
§
COUNTY OF MONTGOMERY §

This instrument was acknowledged before me on this _____ day of _____, 20___, by _____, as _____of the San Jacinto River Authority, on behalf of the San Jacinto River Authority.

_____
Notary Public in and for
the State of T E X A S

(SEAL)

Exhibit 1

[Description of the Easement Tract]

Appendix J

Revenue Bond Program Proforma

San Jacinto River Authority

Groundwater Reduction Plan

Proposed Special Project Revenue Bond Program

Series	2009	2011A	2011B	2012
Dated Date	11/01/2009	03/01/2011	03/01/2011	09/01/2012
Principal Amount of Bonds	$ 21,500,000	$ 30,000,000	$ 37,470,000	$ 458,805,000
Avg. Interest Rate	2.30%	3.02%	5.18%	4.57%
Costs of Issuance	$ 495,000	$ 579,500	$ 620,865	$ 6,198,809
Capitalized Interest	$ -	$ 1,605,495	$ 3,497,371	$ 40,820,888
Debt Service Reserve Requirement	$ 1,332,518	$ 2,134,374	$ 5,490,484	$ 37,505,123
Capital Project Funds	$ 11,877,522	$ 27,815,005	$ 33,351,764	$ 408,819,032
Additional Bonds Test Ratio		1.602	0.623	0.418

Loss Factor
5.00%

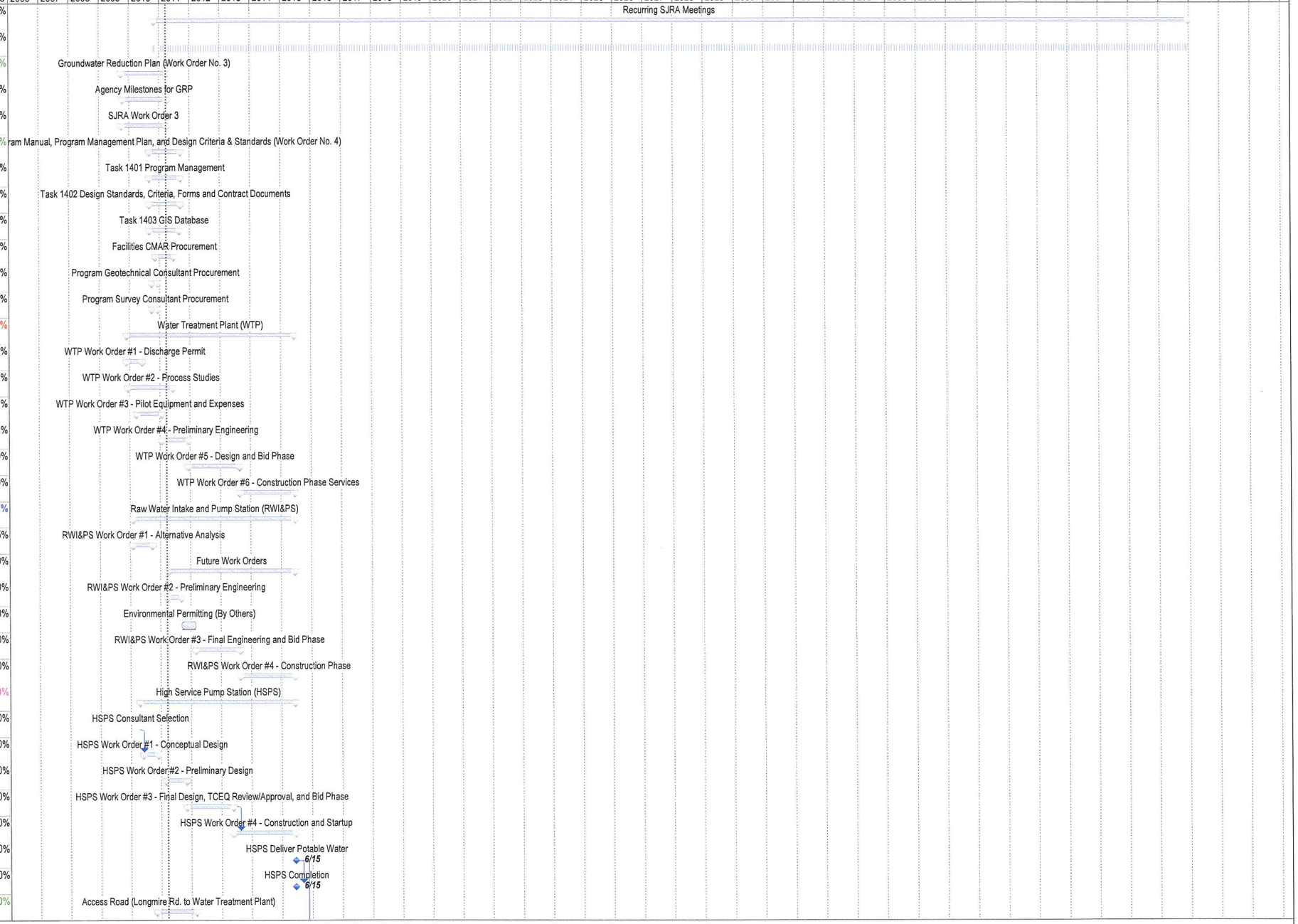
Fiscal Year Ending	Current Debt Service	WIF Series 2011A Debt Service	DFUND Series 2011B Debt Service	Series 2012 Debt Service	Avg. Daily Water Demand (mgd)	Surface Water Supplied (MGD)	Groundwater Pumped (MGD)	Surface Water Rate	Groundwater Pumpage Fee	Gross Project Revenues	Maintenance & Operations Expense	Net Revenues	Surplus Revenue Fund Balance	Capitalized Interest	Deposit to Debt Service Reserve Fund	Debt Service Reserve Fund Balance	Funds Available to Pay Debt Service	Total Debt Service	Interest Earnings @ 1.00%	Year End Balance	Debt Service Coverage	Maintenance & Operations Coverage
08/31/2011					49.39	-	49.39	$ -	$ 0.50	8,156,454	4,736,337	3,420,117	3,420,117	5,102,866	1,098,097	1,098,097	7,424,886	-	10,981	7,435,867	269.0%	147.0%
08/31/2012		869,643	1,894,409		51.14	-	51.14	$ -	$ 0.75	13,299,596	5,057,073	8,242,523	15,678,390	0	1,098,097	2,196,194	14,580,293	2,764,052	96,321	11,912,562	82.4%	228.7%
08/31/2013		802,748	1,748,686	11,906,092	52.89	-	52.89	$ -	$ 1.00	18,339,608	5,208,785	13,130,822	25,043,384	40,820,888	7,501,025	9,697,218	58,363,247	14,457,525	216,098	44,121,820	171.8%	822.4%
08/31/2014		1,422,004	3,844,942	20,410,444	54.64	-	54.64	$ -	$ 1.50	28,419,630	5,365,049	23,054,581	67,176,401	0	7,501,025	17,198,243	59,675,376	25,677,389	613,201	34,611,188	112.2%	626.3%
08/31/2015		1,424,885	3,849,663	25,560,344	56.39	-	56.39	$ -	$ 2.00	39,106,465	5,526,000	33,580,465	68,191,653	0	7,501,025	24,699,267	60,690,628	30,834,891	593,105	30,448,842	98.0%	165.1%
08/31/2016	109,549	1,425,864	3,747,882	25,800,944	58.14	22.40	35.74	$ 2.65	$ 2.25	49,550,301	18,444,879	31,105,422	61,554,264	0	6,402,928	31,102,195	55,151,337	31,084,237	615,510	24,682,610	78.8%	129.9%
08/31/2017	438,194	1,827,550	3,413,976	25,650,744	60.54	22.40	38.14	$ 2.65	$ 2.25	51,422,751	18,998,225	32,424,526	57,107,136	0	6,402,928	37,505,123	50,704,208	31,330,463	621,877	19,995,622	52.2%	102.2%
08/31/2018	2,066,213	1,829,813	1,785,974	32,631,744	62.94	22.40	40.54	$ 2.65	$ 2.25	53,295,201	19,568,172	33,727,029	53,722,651	0	0	37,505,123	53,722,651	38,313,744	575,007	15,983,915	41.7%	79.3%
08/31/2019	2,065,454	1,829,773	1,786,921	32,629,844	65.34	22.40	42.94	$ 2.65	$ 2.25	55,167,651	20,155,217	35,012,434	50,996,349	0	0	37,505,123	50,996,349	38,311,991	534,890	13,219,248	34.5%	63.7%
08/31/2020	2,060,254	1,827,362	1,791,880	32,635,944	67.74	22.40	45.34	$ 2.65	$ 2.25	57,040,101	20,759,874	36,280,227	49,499,476	0	0	37,505,123	49,499,476	38,315,439	507,244	11,691,280	30.5%	54.7%
08/31/2021	2,059,957	1,826,099	1,795,340	32,634,144	70.14	22.40	47.74	$ 2.65	$ 2.25	58,912,551	21,382,670	37,529,881	49,221,162	0	0	37,505,123	49,221,162	38,315,540	491,964	11,397,586	29.7%	51.8%
08/31/2022	2,054,386	1,826,055	1,802,186	32,633,644	72.54	22.40	50.14	$ 2.65	$ 2.25	60,785,001	22,024,150	38,760,851	50,158,437	0	0	37,505,123	50,158,437	38,316,271	489,027	12,331,194	32.2%	54.4%
08/31/2023	2,054,045	1,828,392	1,797,834	32,633,444	74.94	22.40	52.54	$ 2.65	$ 2.25	62,657,451	22,684,875	39,972,577	52,303,770	0	0	37,505,123	52,303,770	38,313,713	498,363	14,488,420	37.8%	62.0%
08/31/2024	2,054,992	1,828,242	1,797,421	32,632,544	77.34	22.40	54.94	$ 2.65	$ 2.25	64,529,901	23,365,421	41,164,480	55,652,900	0	0	37,505,123	55,652,900	38,313,199	519,935	17,859,637	46.6%	74.2%
08/31/2025	2,053,075	1,831,057	1,795,975	32,633,756	79.74	22.40	57.34	$ 2.65	$ 2.25	66,402,351	24,056,383	42,335,968	60,195,605	0	0	37,505,123	60,195,605	38,313,863	553,648	22,435,389	58.6%	90.5%
08/31/2026	2,047,889	1,826,446	1,807,998	32,633,463	81.64	22.40	59.24	$ 2.65	$ 2.25	67,884,708	24,788,375	43,096,333	65,531,722	0	0	37,505,123	65,531,722	38,315,795	599,405	27,815,332	72.6%	108.9%
08/31/2027	2,050,570	1,828,951	1,803,357	32,629,769	83.54	22.40	61.14	$ 2.65	$ 2.25	69,367,064	25,532,026	43,835,038	71,650,369	0	0	37,505,123	71,650,369	38,312,647	653,205	33,990,927	88.7%	129.3%
08/31/2028	2,045,339	1,828,965	1,807,309	32,634,175	85.44	22.40	63.04	$ 2.65	$ 2.25	70,849,420	26,297,987	44,551,433	78,542,360	0	0	37,505,123	78,542,360	38,315,788	714,960	40,941,532	106.9%	151.1%
08/31/2029	2,046,876	1,826,752	1,809,672	32,630,856	87.34	22.40	64.94	$ 2.65	$ 2.25	72,331,776	27,086,927	45,244,850	86,186,382	0	0	37,505,123	86,186,382	38,314,156	784,467	48,656,692	127.0%	174.4%
08/31/2030		1,827,516	3,856,028	32,629,788	89.24	22.40	66.84	$ 2.65	$ 2.25	73,814,133	27,899,534	45,914,598	94,571,290	0	0	37,505,123	94,571,290	38,313,331	861,618	57,119,578	149.1%	198.8%
08/31/2031		1,831,053	3,852,944	32,629,772	91.14	22.40	68.74	$ 2.65	$ 2.25	75,296,489	28,736,520	46,559,968	103,679,546	0	0	37,505,123	103,679,546	38,313,768	946,247	66,312,025	173.1%	224.0%
08/31/2032		1,827,317	3,856,031	32,630,994	93.04	22.40	70.64	$ 2.65	$ 2.25	76,778,845	29,598,616	47,180,229	113,492,254	0	0	37,505,123	113,492,254	38,314,342	1,038,171	76,216,084	198.9%	250.0%
08/31/2033		1,826,260	3,854,618	32,634,606	94.94	22.40	72.54	$ 2.65	$ 2.25	78,261,201	30,486,575	47,774,627	123,990,711	0	0	37,505,123	123,990,711	38,315,484	1,137,212	86,812,439	226.6%	276.5%
08/31/2034		1,827,260	3,857,216	32,631,931	96.84	22.40	74.44	$ 2.65	$ 2.25	79,743,558	31,401,172	48,342,386	135,154,825	0	0	37,505,123	135,154,825	38,316,407	1,243,176	98,081,593	256.0%	303.3%
08/31/2035		1,830,500	3,853,920	32,630,356	98.74	22.40	76.34	$ 2.65	$ 2.25	81,225,914	32,343,207	48,882,707	146,964,300	0	0	37,505,123	146,964,300	38,314,776	1,355,867	110,005,391	287.1%	330.2%
08/31/2036		1,826,762	3,855,696	32,631,913	101.69	22.40	79.29	$ 2.65	$ 2.25	83,529,027	33,313,503	50,215,524	160,220,915	0	0	37,505,123	160,220,915	38,314,371	1,475,105	123,381,650	322.0%	359.6%
08/31/2037		1,830,960	3,852,000	32,633,513	104.64	22.40	82.24	$ 2.65	$ 2.25	85,832,141	34,312,908	51,519,233	174,900,882	0	0	37,505,123	174,900,882	38,316,473	1,608,868	138,193,278	360.7%	391.0%
08/31/2038				38,313,844	107.60	22.40	85.20	$ 2.65	$ 2.25	88,135,254	35,342,295	52,792,959	190,986,236	0	0	37,505,123	190,986,236	38,313,844	1,756,984	154,429,377		424.2%
	$25,206,792	$44,338,224	$70,919,874	$800,288,608																		

Appendix K

GRP Schedule

San Jacinto River Authority
Groundwater Reduction Program
Program Procurement Schedule

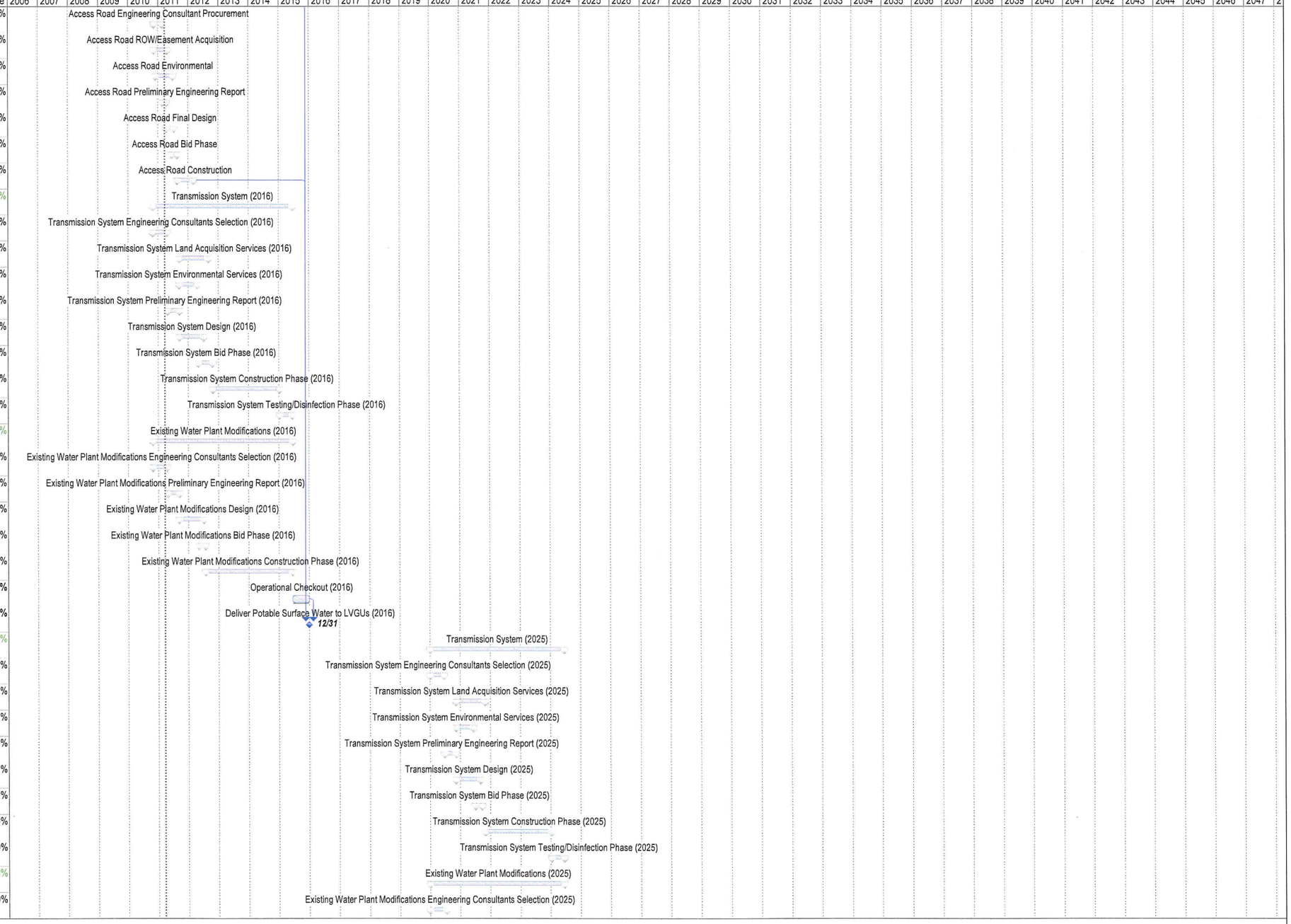
ID	Task Name	Duration	Start	Finish	% Complete
1	**Recurring SJRA Meetings**	8911 days	Thu 10/28/10	Thu 12/22/44	0%
2	SJRA Board of Directors Meeting	8911 days	Thu 10/28/10	Thu 12/22/44	0%
414	**Groundwater Reduction Plan (Work Order No. 3)**	391 days	Thu 10/1/09	Thu 3/31/11	16%
415	Agency Milestones for GRP	382 days	Wed 10/14/09	Thu 3/31/11	10%
423	SJRA Work Order 3	388 days	Thu 10/1/09	Mon 3/28/11	17%
617	**Program Manual, Program Management Plan, and Design Criteria & Standards (Work Order No. 4)**	269 days	Wed 9/1/10	Mon 9/12/11	0%
618	Task 1401 Program Management	269 days	Wed 9/1/10	Mon 9/12/11	0%
658	Task 1402 Design Standards, Criteria, Forms and Contract Documents	269 days	Wed 9/1/10	Mon 9/12/11	0%
731	Task 1403 GIS Database	261 days	Wed 9/1/10	Wed 8/31/11	0%
733	Facilities CMAR Procurement	159 days	Mon 11/15/10	Thu 6/23/11	0%
757	Program Geotechnical Consultant Procurement	53 days	Wed 9/29/10	Fri 12/10/10	0%
771	Program Survey Consultant Procurement	53 days	Wed 9/29/10	Fri 12/10/10	0%
785	**Water Treatment Plant (WTP)**	1450 days	Tue 11/24/09	Mon 6/15/15	0%
786	WTP Work Order #1 - Discharge Permit	136 days	Tue 11/24/09	Tue 6/1/10	0%
795	WTP Work Order #2 - Process Studies	391 days	Fri 12/11/09	Fri 6/10/11	0%
854	WTP Work Order #3 - Pilot Equipment and Expenses	220 days	Wed 3/24/10	Wed 1/26/11	0%
862	WTP Work Order #4 - Preliminary Engineering	228 days	Tue 1/25/11	Thu 12/8/11	0%
872	WTP Work Order #5 - Design and Bid Phase	445 days	Thu 12/8/11	Thu 8/22/13	0%
884	WTP Work Order #6 - Construction Phase Services	472 days	Thu 8/22/13	Mon 6/15/15	0%
890	**Raw Water Intake and Pump Station (RWI&PS)**	1401 days	Mon 2/1/10	Mon 6/15/15	17%
891	RWI&PS Work Order #1 - Alternative Analysis	174 days	Mon 2/1/10	Fri 10/1/10	75%
929	Future Work Orders	1097 days	Fri 4/1/11	Mon 6/15/15	0%
930	RWI&PS Work Order #2 - Preliminary Engineering	120 days	Fri 4/1/11	Thu 9/15/11	0%
936	Environmental Permitting (By Others)	6 mons	Fri 9/16/11	Thu 3/1/12	0%
937	RWI&PS Work Order #3 - Final Engineering and Bid Phase	380 days	Thu 3/1/12	Thu 8/15/13	0%
952	RWI&PS Work Order #4 - Construction Phase	472 days	Fri 8/23/13	Mon 6/15/15	0%
958	**High Service Pump Station (HSPS)**	1343 days	Thu 4/22/10	Mon 6/15/15	0%
959	HSPS Consultant Selection	1 day	Thu 4/22/10	Thu 4/22/10	0%
960	HSPS Work Order #1 - Conceptual Design	128 days	Mon 6/7/10	Wed 12/1/10	0%
977	HSPS Work Order #2 - Preliminary Design	181 days	Tue 3/1/11	Tue 11/8/11	0%
993	HSPS Work Order #3 - Final Design, TCEQ Review/Approval, and Bid Phase	402 days	Tue 11/8/11	Thu 5/23/13	0%
1011	HSPS Work Order #4 - Construction and Startup	537 days	Fri 5/24/13	Mon 6/15/15	0%
1019	HSPS Deliver Potable Water	0 days	Mon 6/15/15	Mon 6/15/15	0%
1020	HSPS Completion	0 days	Mon 6/15/15	Mon 6/15/15	0%
1021	**Access Road (Longmire Rd. to Water Treatment Plant)**	342 days	Wed 11/10/10	Thu 3/1/12	0%



Date: Fri 3/18/11 | Task | Progress | Critical Task | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

San Jacinto River Authority
Groundwater Reduction Program
Program Procurement Schedule

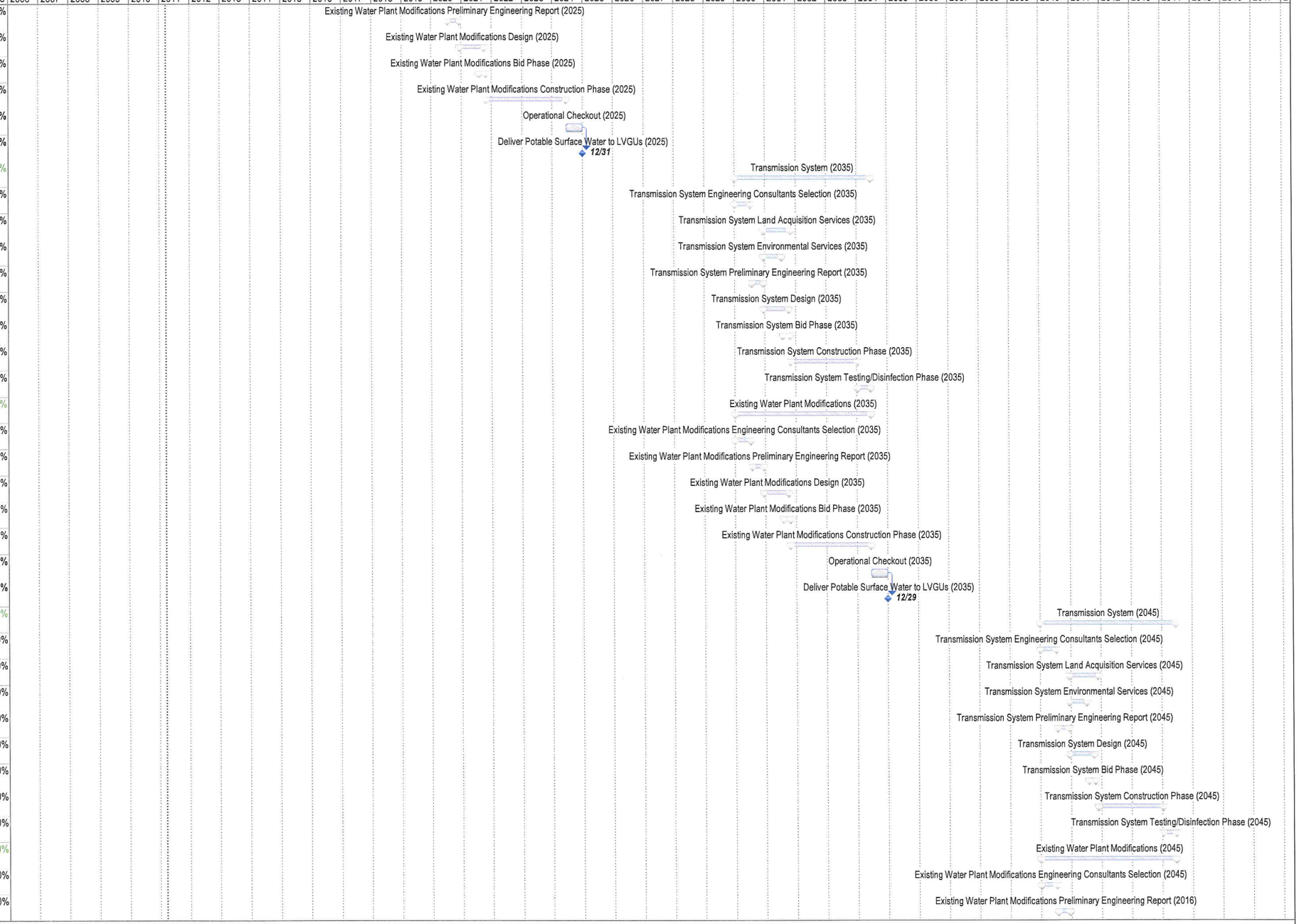
ID	Task Name	Duration	Start	Finish	% Complete
1022	Access Road Engineering Consultant Procurement	74 days	Mon 11/15/10	Thu 2/24/11	0%
1038	Access Road ROW/Easement Acquisition	117 days	Wed 11/10/10	Thu 4/21/11	0%
1055	Access Road Environmental	152 days	Wed 12/1/10	Thu 6/30/11	0%
1067	Access Road Preliminary Engineering Report	35 days	Thu 2/24/11	Thu 4/14/11	0%
1074	Access Road Final Design	65 days	Thu 4/14/11	Thu 7/14/11	0%
1080	Access Road Bid Phase	50 days	Thu 6/16/11	Thu 8/25/11	0%
1086	Access Road Construction	135 days	Thu 8/25/11	Thu 3/1/12	0%
1094	**Transmission System (2016)**	**1207 days**	**Fri 10/29/10**	**Mon 6/15/15**	**0%**
1095	Transmission System Engineering Consultants Selection (2016)	125 days	Fri 10/29/10	Thu 4/21/11	0%
1110	Transmission System Land Acquisition Services (2016)	249 days	Thu 9/15/11	Wed 8/29/12	0%
1127	Transmission System Environmental Services (2016)	152 days	Thu 9/15/11	Mon 4/16/12	0%
1139	Transmission System Preliminary Engineering Report (2016)	100 days	Thu 4/28/11	Thu 9/15/11	0%
1146	Transmission System Design (2016)	212 days	Thu 9/15/11	Mon 7/9/12	0%
1194	Transmission System Bid Phase (2016)	124 days	Fri 5/4/12	Thu 10/25/12	0%
1200	Transmission System Construction Phase (2016)	577 days	Thu 10/25/12	Mon 1/12/15	0%
1205	Transmission System Testing/Disinfection Phase (2016)	110 days	Tue 1/13/15	Mon 6/15/15	0%
1211	**Existing Water Plant Modifications (2016)**	**1207 days**	**Fri 10/29/10**	**Mon 6/15/15**	**0%**
1212	Existing Water Plant Modifications Engineering Consultants Selection (2016)	125 days	Fri 10/29/10	Thu 4/21/11	0%
1227	Existing Water Plant Modifications Preliminary Engineering Report (2016)	100 days	Thu 4/28/11	Thu 9/15/11	0%
1234	Existing Water Plant Modifications Design (2016)	212 days	Thu 9/15/11	Mon 7/9/12	0%
1259	Existing Water Plant Modifications Bid Phase (2016)	59 days	Fri 5/4/12	Thu 7/26/12	0%
1265	Existing Water Plant Modifications Construction Phase (2016)	752 days	Thu 7/26/12	Mon 6/15/15	0%
1273	**Operational Checkout (2016)**	**143 days**	**Tue 6/16/15**	**Thu 12/31/15**	**0%**
1274	**Deliver Potable Surface Water to LVGUs (2016)**	**0 days**	**Thu 12/31/15**	**Thu 12/31/15**	**0%**
1275	**Transmission System (2025)**	**1162 days**	**Thu 1/2/20**	**Fri 6/14/24**	**0%**
1276	Transmission System Engineering Consultants Selection (2025)	121 days	Thu 1/2/20	Thu 6/18/20	0%
1291	Transmission System Land Acquisition Services (2025)	249 days	Thu 11/12/20	Wed 10/27/21	0%
1308	Transmission System Environmental Services (2025)	152 days	Thu 11/12/20	Mon 6/14/21	0%
1320	Transmission System Preliminary Engineering Report (2025)	100 days	Thu 6/25/20	Thu 11/12/20	0%
1327	Transmission System Design (2025)	212 days	Thu 11/12/20	Mon 9/6/21	0%
1375	Transmission System Bid Phase (2025)	59 days	Fri 7/2/21	Thu 9/23/21	0%
1381	Transmission System Construction Phase (2025)	577 days	Wed 10/27/21	Fri 1/12/24	0%
1386	Transmission System Testing/Disinfection Phase (2025)	110 days	Mon 1/15/24	Fri 6/14/24	0%
1392	**Existing Water Plant Modifications (2025)**	**1162 days**	**Thu 1/2/20**	**Fri 6/14/24**	**0%**
1393	Existing Water Plant Modifications Engineering Consultants Selection (2025)	141 days	Thu 1/2/20	Thu 7/16/20	0%



Date: Fri 3/18/11 | Task | Progress | Critical Task | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

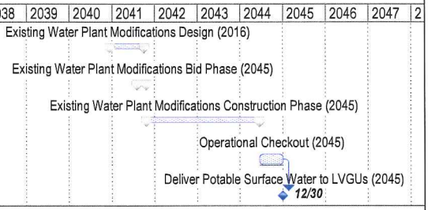
San Jacinto River Authority
Groundwater Reduction Program
Program Procurement Schedule

ID	Task Name	Duration	Start	Finish	% Complete
1408	Existing Water Plant Modifications Preliminary Engineering Report (2025)	100 days	Thu 7/23/20	Thu 12/10/20	0%
1415	Existing Water Plant Modifications Design (2025)	212 days	Thu 12/10/20	Mon 10/4/21	0%
1440	Existing Water Plant Modifications Bid Phase (2025)	59 days	Fri 7/30/21	Thu 10/21/21	0%
1446	Existing Water Plant Modifications Construction Phase (2025)	691 days	Thu 10/21/21	Fri 6/14/24	0%
1454	**Operational Checkout (2025)**	**142 days**	**Mon 6/17/24**	**Tue 12/31/24**	**0%**
1455	**Deliver Potable Surface Water to LVGUs (2025)**	**0 days**	**Tue 12/31/24**	**Tue 12/31/24**	**0%**
1456	**Transmission System (2035)**	**1162 days**	**Wed 1/2/30**	**Thu 6/15/34**	**0%**
1457	Transmission System Engineering Consultants Selection (2035)	137 days	Wed 1/2/30	Thu 7/11/30	0%
1472	Transmission System Land Acquisition Services (2035)	229 days	Thu 12/12/30	Wed 10/29/31	0%
1489	Transmission System Environmental Services (2035)	152 days	Thu 12/12/30	Mon 7/14/31	0%
1501	Transmission System Preliminary Engineering Report (2035)	100 days	Thu 7/25/30	Thu 12/12/30	0%
1508	Transmission System Design (2035)	212 days	Thu 12/12/30	Mon 10/6/31	0%
1556	Transmission System Bid Phase (2035)	59 days	Fri 8/1/31	Thu 10/23/31	0%
1562	Transmission System Construction Phase (2035)	576 days	Wed 10/29/31	Thu 1/12/34	0%
1567	Transmission System Testing/Disinfection Phase (2035)	110 days	Fri 1/13/34	Thu 6/15/34	0%
1573	**Existing Water Plant Modifications (2035)**	**1162 days**	**Wed 1/2/30**	**Thu 6/15/34**	**0%**
1574	Existing Water Plant Modifications Engineering Consultants Selection (2035)	137 days	Wed 1/2/30	Thu 7/11/30	0%
1589	Existing Water Plant Modifications Preliminary Engineering Report (2035)	100 days	Thu 7/25/30	Thu 12/12/30	0%
1596	Existing Water Plant Modifications Design (2035)	212 days	Thu 12/12/30	Mon 10/6/31	0%
1621	Existing Water Plant Modifications Bid Phase (2035)	59 days	Fri 8/1/31	Thu 10/23/31	0%
1627	Existing Water Plant Modifications Construction Phase (2035)	690 days	Thu 10/23/31	Thu 6/15/34	0%
1635	**Operational Checkout (2035)**	**141 days**	**Fri 6/16/34**	**Fri 12/29/34**	**0%**
1636	**Deliver Potable Surface Water to LVGUs (2035)**	**0 days**	**Fri 12/29/34**	**Fri 12/29/34**	**0%**
1637	**Transmission System (2045)**	**1163 days**	**Mon 1/2/40**	**Wed 6/15/44**	**0%**
1638	Transmission System Engineering Consultants Selection (2045)	139 days	Mon 1/2/40	Thu 7/12/40	0%
1653	Transmission System Land Acquisition Services (2045)	249 days	Thu 12/13/40	Wed 11/27/41	0%
1670	Transmission System Environmental Services (2045)	152 days	Thu 12/13/40	Mon 7/15/41	0%
1682	Transmission System Preliminary Engineering Report (2045)	100 days	Thu 7/26/40	Thu 12/13/40	0%
1689	Transmission System Design (2045)	212 days	Thu 12/13/40	Mon 10/7/41	0%
1737	Transmission System Bid Phase (2045)	59 days	Fri 8/2/41	Thu 10/24/41	0%
1743	Transmission System Construction Phase (2045)	555 days	Wed 11/27/41	Wed 1/13/44	0%
1748	Transmission System Testing/Disinfection Phase (2045)	110 days	Thu 1/14/44	Wed 6/15/44	0%
1754	**Existing Water Plant Modifications (2045)**	**1163 days**	**Mon 1/2/40**	**Wed 6/15/44**	**0%**
1755	Existing Water Plant Modifications Engineering Consultants Selection (2045)	139 days	Mon 1/2/40	Thu 7/12/40	0%
1770	Existing Water Plant Modifications Preliminary Engineering Report (2016)	100 days	Thu 7/26/40	Thu 12/13/40	0%



San Jacinto River Authority
Groundwater Reduction Program
Program Procurement Schedule

ID	Task Name	Duration	Start	Finish	% Complete
1777	Existing Water Plant Modifications Design (2016)	212 days	Thu 12/13/40	Mon 10/7/41	0%
1802	Existing Water Plant Modifications Bid Phase (2045)	59 days	Fri 8/2/41	Thu 10/24/41	0%
1808	Existing Water Plant Modifications Construction Phase (2045)	689 days	Thu 10/24/41	Wed 6/15/44	0%
1816	**Operational Checkout (2045)**	**142 days**	**Thu 6/16/44**	**Fri 12/30/44**	**0%**
1817	**Deliver Potable Surface Water to LVGUs (2045)**	**0 days**	**Fri 12/30/44**	**Fri 12/30/44**	**0%**



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