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Chapter 9 – Water Infrastructure Financing Recommendations

9.1 Introduction

In Senate Bill 2 of the 77th Texas Legislature, the preparation of an Infrastructure Financing Report (IFR) was added to the regional planning process. The purpose of the IFR is to identify the funding needed to implement the water management strategies (WMS) recommended in the 2011 Regional Water Plan. The primary objectives of this chapter/report are:

- Determine the number of Political Subdivisions with identified needs that will be unable to finance their water infrastructure needs;
- Determine the amount of infrastructure costs in the 2011 Regional Water Plan that cannot be financed by the local Political Subdivisions;
- Determine funding options, such as State funding, that are proposed by the Political Subdivisions to finance water infrastructure costs that cannot be financed locally; and
- Determine additional roles the Regional Water Planning Group proposes for the State in financing the recommended water supply projects.

A survey of Water User Groups (WUGs) with identified infrastructure needs was conducted and the results of those surveys are summarized in *Section 9.3* of this chapter. The remainder of *Chapter 9* discusses each proposed WIF project detailing its location in the regional water plan, the sources and Water User Groups associated with the project.

The Region H Water Planning Group reviewed the current role of the State in financing water supply projects and made recommendations for program increases and new initiatives in *Chapter 8* of this plan.

9.2 Capital Costs for the 2011 Region H Water Plan

The estimated cost of the 2011 Region H Water Plan is approximately \$12.0 billion over the 50-year planning period. This cost includes the development of new water sources, estimates for distribution and treatment facilities, and the capital improvements required to achieve agricultural conservation targets. WMS such as new water source projects and GRPs, are estimated at \$2.0 billion (see *Tables 9-1 and 9-2*). Large-scale treatment and transmission system expansions for the Chambers-Liberty County Navigational District, Huntsville, North Harris County Regional Water Authority (NHCRWA), the West Harris County Regional Water Authority (WHCRWA), the North Fort Bend Water Authority (NFBWA), the San Jacinto River Authority (SJRA) and the City of Houston are estimated at \$5.9 billion (see *Table 9-2*).

As can be seen in *Table 9-1*, several recommended WMS such as reallocate existing water supplies require no capital expenditure beyond WUG infrastructure expansions. These costs are reflected in the WUG cost estimates in *Appendix 4C*, and are summarized in *Table 9-1*. Also, several strategies require the Luce Bayou Transfer water management strategy to move existing supplies from the Trinity River Basin to Harris and Montgomery Counties. Note that the project volume listed in *Table 9-1* is not necessarily indicative of new yield; for example, the transmission line projects do not create new yield but rather convey volumes generated by other projects.

Table 9-1
Recommended Water Supply and Transmission Strategies

| <u>WMS</u> | <u>Max Project Volume (ac-ft/yr)</u> | <u>WWP Capital Cost \$</u> | <u>WUG Capital Cost \$</u> | <u>Starting Decade</u> |
|---|--|--------------------------------|--------------------------------|------------------------|
| Conservation Strategies: | | | | |
| Industrial Conservation | TBD | \$0 | TBD | 2010 |
| Irrigation Conservation | 77,881 | \$0 | \$757,436 | 2010 |
| Municipal Conservation | 105,494 | \$0 | \$0 | 2010 |
| Contractual Strategies: | | | | |
| Expand/Increase Current Contracts | 142,599 | \$0 | See Contracts | 2010 |
| New Contracts from Existing Supplies | 83,558 | \$0 | See Contracts | 2010 |
| Reallocation of Existing Supplies | N/A | \$0 | See Contracts | 2010 |
| TRA to SJRA Contract | 76,476 | \$302,781,597 | See Contracts | 2040 |
| TRA to Houston Contract | 123,524 | See Luce Bayou | See Contracts | 2030 |
| WUG-Level Contracts | N/A | \$0 | \$2,390,273,157 | 2010 |
| WWP Contracts | N/A | \$0 | \$0 | 2010 |
| Groundwater Strategies: | | | | |
| Expanded Use of Groundwater | 90,617 | \$0 | \$165,928,999 | 2010 |
| Interim Strategies | 45,512 | \$0 | \$86,701,535 | 2010 |
| New Groundwater Wells for Livestock | 41 | \$0 | \$18,635 | 2020 |
| Groundwater Reduction Plans: | | | | |
| CHCRWA GRP | 4,806 | See CHCRWA Trans. | \$0 | 2010 |
| COH GRP | TBD | See COH Treatment | \$58,235,873 | 2010 |
| City of Missouri City GRP | 17,562 | \$92,070,990 | \$6,618,706 | 2010 |
| Fort Bend MUD 25 GRP | 589 | \$0 | \$776,145 | 2020 (2013) |
| Fort Bend WCID 2 GRP | 5,753 | \$24,828,857 | \$0 | 2020 (2013) |
| NFBWA GRP | 106,402 | See NFBWA Trans. | \$1,638,063 | 2020 (2013) |
| NHCRWA GRP | 117,755 | See NHCRWA Trans. | \$17,814,585 | 2010 |
| Pecan Grove GRP | 1,700 | \$0 | \$15,960,000 | 2020 (2013) |
| Richmond/Rosenberg GRP | 7,500 | \$117,220,150 | \$0 | 2020 (2013) |
| River Plantation GRP | 368 | \$0 | \$484,926 | 2010 |
| SJRA WRAP | 129,010 | \$900,000,000 | \$217,856,853 | 2020 (2013) |
| Sugar Land GRP | 9,796 | \$161,360,049 | \$6,360,101 | 2020 (2013) |
| WHCRWA GRP | 78,839 | See WHCRWA Trans | \$35,268,970 | 2010 |
| Infrastructure Strategies: | | | | |
| CHCRWA Transmission Line | 4,806 | TBD | N/A | 2010 |
| CHCRWA Internal Distribution | 4,806 | TBD | N/A | 2010 |
| CLCND West Chambers System | 2,800 | \$20,380,000 | See WUG Contracts | 2020 (2014) |
| COH Distribution Expansion | TBD | \$261,040,000 | N/A | 2010 |
| COH Treatment Expansion | Varies by decade | \$2,045,672,161 | N/A | 2010 |
| Harris County MUD 50 WTP | 632 | \$0 | \$6,131,600 | 2020 (2013) |
| Huntsville WTP | 11,200 | \$61,023,906 | \$0 | 2010 |
| LLWSSSC Surface Water Project | 954 | \$0 | \$3,087,974 | 2010 |
| Luce Bayou Transfer | 450,000 | \$253,916,914 | \$0 | 2020 |
| NFBWA Internal Distribution | 106,402 | \$225,000,000 | N/A | 2020 (2013) |
| NFBWA Shared Transmission Line | 71,876 | \$213,000,000 | N/A | 2020 (2013) |
| NHCRWA Internal 2010 Distribution | 34,714 | \$153,149,640 | N/A | 2010 |
| NHCRWA Internal 2020 Distribution | 91,167 | \$345,292,192 | N/A | 2020 |
| NHCRWA Internal 2030 Distribution | 117,755 | \$37,439,584 | N/A | 2030 |
| NHCRWA Transmission 2010 | 34,714 | \$80,690,624 | N/A | 2010 |
| NHCRWA Transmission 2020 | 91,167 | \$172,558,512 | N/A | 2020 |
| NHCRWA Transmission 2030 | 117,755 | \$0 | N/A | 2030 |
| Pearland SWTP | 13,420 | \$0 | \$265,000,000 | TBD |
| Sealy GW Treatment Expansion | 888 | \$0 | \$6,450,000 | 2020 |
| WHCRWA Internal Distribution | 78,839 | \$552,472,000 | N/A | 2010 |
| WHCRWA Transmission Line | 78,839 | \$290,084,193 | N/A | 2010 |
| Reservoir Strategies: | | | | |
| Allens Creek Reservoir | 99,650 | \$222,752,400 | See WUG Contracts | 2020 |
| Brazoria County Off-channel Reservoir | 24,100 | \$173,898,602 | See WUG Contracts | 2060 |
| Dow Off-channel Reservoir | 21,800 | \$124,468,000 | See WUG Contracts | 2020 |
| Fort Bend County Off-channel Reservoir | 46,000 | \$202,514,788 | See WUG Contracts | 2050 |
| GCWA Off-channel Reservoir | 39,500 | \$197,448,012 | See WUG Contracts | 2030 |
| Reuse Strategies: | | | | |
| Fulshear Reuse | 430 | \$0 | \$566,625 | TBD |
| Houston Indirect Reuse | 128,801 | \$0 | \$721,822,850 | 2040 |
| Montgomery MUD 8/9 Indirect Reuse | 1,120 | \$0 | \$12,245,687 | 2016 |
| NHCRWA Indirect Reuse | 16,300 | \$0 | \$66,778,694 | 2040 |
| Wastewater Reuse for Industry | 67,200 | \$332,051,761 | \$0 | 2060 |
| Wastewater Reclamation for Municipal Irrigation | 36,388 | \$0 | \$48,043,249 | 2030 |
| Permit Strategies: | | | | |
| BRA System Operations Permit | 25,400 | TBD | See WUG Contracts | 2020 |

| <u>WMS</u> | <u>Max Project Volume (ac-ft/yr)</u> | <u>WWP Capital Cost \$</u> | <u>WUG Capital Cost \$</u> | <u>Starting Decade</u> |
|--|--------------------------------------|----------------------------|----------------------------|------------------------|
| Houston Bayous Permit | 0 | \$20,956,000 | \$0 | 2020 |
| Other Strategies: | | | | |
| Brazoria Co. Interruptible Supplies for Irrigation | 104,977 | \$0 | \$0 | 2010 |
| Freeport Desalination Plant | 33,600 | \$255,699,000 | See WUG Contracts | 2050 |
| Brazos Saltwater Barrier | N/A | \$44,470,739 | \$0 | 2030 |

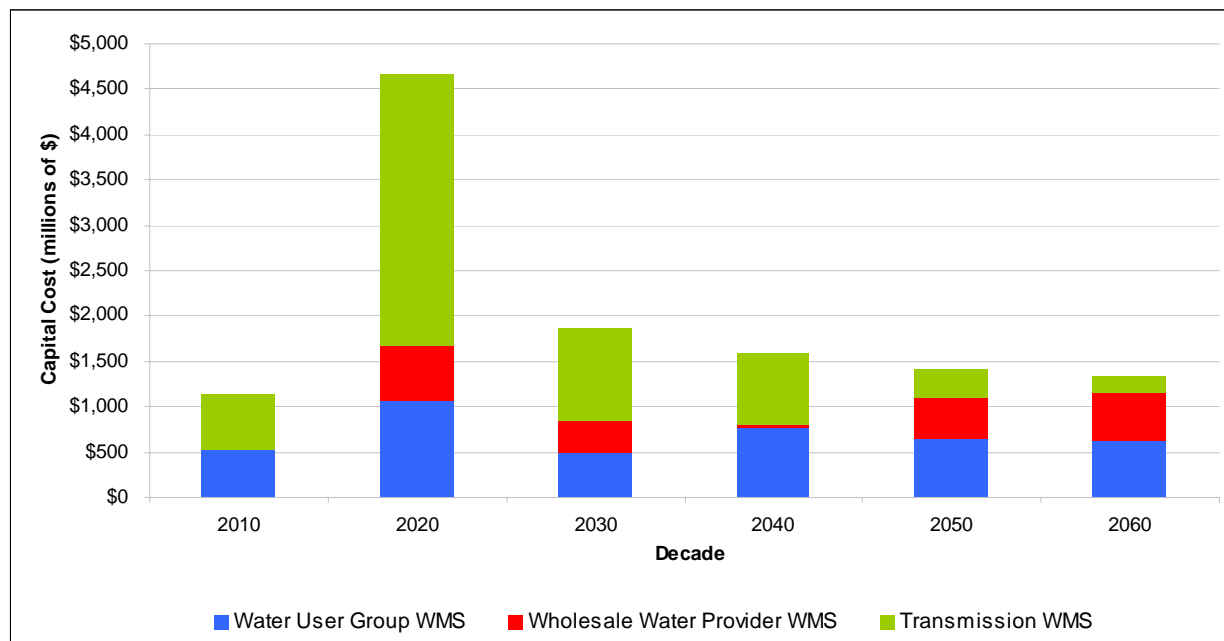
The distribution of capital costs over the planning period is shown in *Figure 9-1*. WUG-level capital costs are represented as starting in the years indicated. If necessitated by increasing strategy volumes, WUG capital costs are also shown in subsequent decades, reflecting phased infrastructure expansion to handle additional project capacity. A significant portion of the overall infrastructure will be built before 2030 due to groundwater reduction goals. The City of Houston, SJRA and Regional Water Authorities cost projection reflects meeting the surface water conversion milestones in Harris, Fort Bend and Montgomery Counties as a result of local subsidence district regulations.

**Table 9-2
Total Supply and Transmission Cost**

| | | |
|--|--|-------------------------|
| Water Supply and GRP | WUG (Conservation) ¹ | \$757,436 |
| | WUG (Surface Water) | \$2,809,216,282 |
| | WUG (Groundwater) | \$474,128,769 |
| | WUG (Reuse) | \$850,718,176 |
| | WWP (WMS) | \$1,969,739,347 |
| | Total For Water Management Strategies | \$6,104,560,010 |
| Major Transmission / Treatment Infrastructure | City of Houston ² | \$2,560,629,075 |
| | City of Huntsville | \$61,023,906 |
| | NHCRWA ³ | \$789,130,552 |
| | CLCND | \$20,380,000 |
| | WHCRWA ⁴ | \$842,556,193 |
| | NFBWA ⁵ | \$438,000,000 |
| | SJRA ⁶ | \$1,202,781,597 |
| Total Transmission Infrastructure Cost | \$5,914,501,323 | |
| Total Supply and Transmission Infrastructure Cost | | \$12,019,061,333 |

- 1 Conservation capital costs for irrigation. Very little conservation cost is capital for infrastructure, with many costs occurring at the annual or per acre-foot level.
- 2 City of Houston water treatment / transmission infrastructure costs, period 2007 - 2030, are based on information obtained from the City of Houston. Also includes the cost of the Luce Bayou conveyance
- 3 NHCRWA water transmission infrastructure costs are based on information obtained from the NHCRWA Consultant Team
- 4 WHCRWA water transmission infrastructure costs are based on information obtained from the WHCRWA Consultant Team
- 5 NFBWA water transmission infrastructure costs are based on "North Fort Bend Water Authority, Groundwater Reduction Plan", Brown and Gay & TCB/AECOM, March 2008.
- 6 SJRA water transmission infrastructure costs for the SJRA WRAP are based on "Montgomery County Alternative Water Supply Program", Brown and Gay, February 2009. Value also includes costs estimated by Region H Consultant for TRA to SJRA transfer conveyance.

Figure 9-1
Costs by Decade and Category



WUG and WWP infrastructure costs occur early in the planning period due to the groundwater reduction goals. In the past, the ability to easily drill groundwater wells throughout the region has allowed development to occur at significant distances from surface water sources. As projected water demands surpass the sustainable yield of the Gulf Coast Aquifer, communities face the need to construct long pipelines and treatment facilities. Regulations enacted by the Harris-Galveston Subsidence District and the Fort Bend Subsidence District limit groundwater use to a percentage of total demand within those counties. Surface water conversion milestones are mandated in 2020 and 2030 for Harris County, and in 2013 and 2025 in Fort Bend County. Groundwater pumpage in Montgomery County is regulated by the Lone Star [Groundwater](#) Conservation District to 64,000 acre-feet per year, the sustainable yield of the Gulf Coast Aquifer within Montgomery County. The first surface water conversion milestones in Montgomery County are mandated in 2015.

Water conservation is a major component of the Region H Water Plan, accounting for up to 183,000 acre-feet per year of reduced demand. Irrigation conservation is recommended in six counties, with potential reductions ranging from 10 to 28 percent of demand. These savings are to be achieved through the lining of irrigation canals, multiple irrigation inlets, and the laser-leveling of rice fields. Both of these methods require capital [expenditures](#), with lining of irrigation canals totaling approximately \$757,000 and on-farm methods totaling approximately \$7,744,000 over the six counties.

Municipal conservation does not require additional infrastructure to be constructed, but incurs a cost per acre-foot to achieve the target savings. Depending upon the size of the WUG, conservation is estimated as reducing demand by 5.5 to 6.3 percent, at a cost of \$202 to \$311 per acre-foot. This cost per acre-foot of savings is used in the strategy tables in *Chapter 4*. However, the cost of conservation measures would be paid as an incremental addition to the rate paid by end users.

9.3 Infrastructure Financing Survey

The following sections describe the results of an Infrastructure Financing Survey performed as part of the 2011 Plan. For the 2011 Plan update, the Texas Water Development Board (TWDB) developed a web-based survey tool and methodology for Water User Groups to report their projected need for water infrastructure funding, linking the cost to their recommended Water Management Strategies. The Region H Water Planning Group was responsible for notifying districts and municipalities and regional water providers, conducting the survey, and reporting the findings as an update to this section of the Regional Water Plan.

Surveys were sent to 223 political subdivisions and districts that were presumed to have project water shortages and anticipated capital cost in the 2011 Region H Water Plan. In the survey, WUGs were asked to specify the amount of funding from the TWDB needed for future projects. Funding for applicable water infrastructure projects is available from the TWDB through the categories listed below:

- Planning, design, permitting is for entities that want to participate in the WIF-Deferred Program. The WIF-Deferred program offers subsidized interest and deferral of a principal and interest for up to 10 years.
- Acquisition and construction is for entities that want to participate in the WIF-Construction Program, in which offers subsidized interest for all construction costs including planning, acquisition, design and construction.
- Excess Capacity is for entities that want to participate in the State Participation Program. The State Participating funding offers partial interest and principal deferral for the incremental cost of project elements that are designed and built to serve needs beyond 10 years.
- Rural is for entities that want to participate in the Rural Water Assistance Program. This program funds grants and 0 percent interest loans for service areas that are not in a Metropolitan Statistical Area (MSA) and where the population does not exceed 5,000. This MSA must meet the Economically Distressed Areas Program (EDAP) eligibility criteria.
- Disadvantaged is for entities wanting to participate in the Economically Distressed Area Program (EDAP). This program is a financial assistance program to address the water and wastewater needs of economically distress area. Eligibility for TWDB EDAP requires that the median household income of the area to be served by the proposed project to be less than 75 percent of the Texas median household income (\$39,927), according to the 2000 census. EDAP eligibility also requires adoption of Model Subdivision rules by the appropriate planning entities.

9.3.1 Summary of Survey Responses

The following survey responses were received before July 30, 2010.

Ames

Ames indicated that financial assistance for future projects is not needed from TWDB.

Brazos River Authority

The Brazos River Authority (BRA) was surveyed by Region G. Results of the survey obtained from the TWDB indicated that three BRA sponsored projects in Region H would require financial assistance from the TWDB. The BRA has indicated that \$15 million would be requested from the WIF-Construction Program in 2015 and \$15 million from the State Participation Program in 2017 for the construction of the Allens Creek Reservoir in Austin County. This off-channel reservoir project will develop water from the Little River watershed for future use in Brazoria, Fort Bend and Galveston Counties. The BRA has also indicated that \$255 million will be needed through the WIF-Construction Program in 2040 for the Freeport Seawater Desalination project. This water management strategy is projected to supply manufacturing demands in Brazoria County beginning in 2050. The third project, the Brazos Saltwater Barrier described in Tech Memo 4B-39, does not increase yield but does improve water quality. The BRA indicated that \$35 million would be needed through the WIF-Construction Program in 2020 to fund the project. The water source and projected WUGs associated with the Allens Creek Reservoir and Freeport Seawater Desalination projects are listed below.

| WATER MANAGEMENT STRATEGIES | | | |
|--|-----------|-----------|--------------------|
| Allens Creek Reservoir (Tech Memo 4B-26) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| ALLENS CREEK LAKE/RESERVOIR | 12900 | RESERVOIR | BRAZOS |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| ALVIN | 080013000 | BRAZORIA | SAN JACINTO-BRAZOS |
| CLEAR LAKE SHORES | 080764000 | GALVESTON | SAN JACINTO-BRAZOS |
| DICKINSON | 080165000 | GALVESTON | SAN JACINTO-BRAZOS |
| IRRIGATION | 081004020 | BRAZORIA | SAN JACINTO-BRAZOS |
| IRRIGATION | 081004020 | BRAZORIA | BRAZOS |
| IRRIGATION | 081004084 | GALVESTON | SAN JACINTO-BRAZOS |
| KEMAH | 080316000 | GALVESTON | SAN JACINTO-BRAZOS |
| LEAGUE CITY | 080350000 | GALVESTON | SAN JACINTO-BRAZOS |
| LEAGUE CITY | 080350000 | HARRIS | SAN JACINTO-BRAZOS |
| MANVEL | 080721000 | BRAZORIA | SAN JACINTO-BRAZOS |
| MINING | 081003084 | GALVESTON | SAN JACINTO-BRAZOS |
| MISSOURI CITY | 080409000 | HARRIS | SAN JACINTO |
| PEARLAND | 080457000 | BRAZORIA | SAN JACINTO-BRAZOS |
| PEARLAND | 080457000 | HARRIS | SAN JACINTO-BRAZOS |
| STEAM ELECTRIC POWER | 081002084 | GALVESTON | SAN JACINTO-BRAZOS |
| COUNTY-OTHER | 080757020 | BRAZORIA | SAN JACINTO-BRAZOS |
| COUNTY-OTHER | 080757020 | BRAZORIA | BRAZOS |
| COUNTY-OTHER | 080757020 | BRAZORIA | BRAZOS-COLORADO |

| WATER MANAGEMENT STRATEGIES | | | |
|---|-----------|-----------|--------------------|
| Allens Creek Reservoir (Tech Memo 4B-26) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| ALLENS CREEK LAKE/RESERVOIR | 12900 | RESERVOIR | BRAZOS |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| MANUFACTURING | 081001020 | BRAZORIA | SAN JACINTO-BRAZOS |
| MANUFACTURING | 081001020 | BRAZORIA | BRAZOS |
| MINING | 081003020 | BRAZORIA | SAN JACINTO-BRAZOS |
| MINING | 081003020 | BRAZORIA | BRAZOS |
| MINING | 081003020 | BRAZORIA | BRAZOS-COLORADO |
| COUNTY-OTHER | 080757079 | FORT BEND | SAN JACINTO |
| COUNTY-OTHER | 080757079 | FORT BEND | SAN JACINTO-BRAZOS |
| COUNTY-OTHER | 080757079 | FORT BEND | BRAZOS |
| FAIRCHILDS | 081019000 | FORT BEND | BRAZOS |
| FIRST COLONY MUD #9 | 084113000 | FORT BEND | BRAZOS |
| FORT BEND COUNTY MUD #106 | 084117000 | FORT BEND | BRAZOS |
| FORT BEND COUNTY MUD #23 | 084121000 | FORT BEND | SAN JACINTO-BRAZOS |
| FORT BEND COUNTY MUD #25 | 084122000 | FORT BEND | SAN JACINTO-BRAZOS |
| FORT BEND COUNTY MUD #81 | 084129000 | FORT BEND | BRAZOS |
| MANUFACTURING | 081001079 | FORT BEND | SAN JACINTO |
| MANUFACTURING | 081001079 | FORT BEND | BRAZOS |
| MINING | 081003079 | FORT BEND | SAN JACINTO |
| MINING | 081003079 | FORT BEND | BRAZOS |
| MINING | 081003079 | FORT BEND | SAN JACINTO-BRAZOS |
| ORBIT SYSTEMS INC | 084294000 | FORT BEND | SAN JACINTO-BRAZOS |
| PLANTATION MUD | 084303000 | FORT BEND | SAN JACINTO-BRAZOS |
| RICHMOND | 080500000 | FORT BEND | BRAZOS |
| ROSENBERG | 080518000 | FORT BEND | BRAZOS |
| SUGAR LAND | 080585000 | FORT BEND | SAN JACINTO-BRAZOS |

| WATER MANAGEMENT STRATEGIES | | | |
|---|-----------|-----------|--------------------|
| Freeport Seawater Desalination Project (Tech Memo 4B-40) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| FREERPORT DESALINATION PLANT | FPDESAL | RESERVOIR | GULF |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| MANUFACTURING | 081001020 | BRAZORIA | SAN JACINTO-BRAZOS |
| MANUFACTURING | 081001020 | BRAZORIA | BRAZOS |

Buffalo

Buffalo, located in the Trinity Basin, indicated that TWDB financial assistance for future projects is not needed through any of the five funding categories.

Chambers-Liberty Counties Navigation District

Chambers-Liberty Counties Navigation District (CLCND) indicated on their survey that the district will need approximately \$20 million in funding for future water management strategies. CLCND anticipates using \$2 million from the WIF-Deferred Program in 2012 and approximately \$18 million from the WIF-Construction Program in 2015. The project will treat water from the Trinity River and supply municipal water users in the Trinity and Trinity-San Jacinto Basins including: Mont Belvieu, Old River Winfree, County-Other, and Beach City. The water source and projected WUGs are listed below.

| WATER MANAGEMENT STRATEGIES | | | |
|---|-------------|----------|---------------------|
| CLCND W Chambers System (Tech Memo 4B-18) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| TRINITY RIVER RUN-OF-RIVER | 3460804279B | CHAMBERS | TRINITY |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| MONT BELVIEU | 080413000 | CHAMBERS | TRINITY |
| MONT BELVIEU | 080413000 | CHAMBERS | TRINITY-SAN JACINTO |
| OLD RIVER-WINFREE | 080727000 | CHAMBERS | TRINITY |
| COUNTY-OTHER | 080757036 | CHAMBERS | TRINITY |
| COUNTY-OTHER | 080757036 | CHAMBERS | TRINITY-SAN JACINTO |
| BEACH CITY | 080822000 | CHAMBERS | TRINITY |
| BEACH CITY | 080822000 | CHAMBERS | TRINITY-SAN JACINTO |

EI Dorado UD

EI Dorado UD indicated on the survey that approximately \$1.3 million dollars will be needed to fund one future water management strategy project in 2011 and 2012. As a participant in the City of Houston GRP, EI Dorado UD will require funds from the TWDB to expand its groundwater pumping capacity.

| WATER MANAGEMENT STRATEGIES | | | |
|-----------------------------|-----------|--------|-------------|
| COH GRP (Tech Memo 4B-6) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| GULF COAST AQUIFER | 10115 | HARRIS | SAN JACINTO |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| EL DORADO UD | 084101000 | HARRIS | SAN JACINTO |

Flo Community WSC

Flo Community WSC has two projects listed to start in 2010, and the district indicated on the survey that a total of \$2,318,000 will be needed to expand their current groundwater capacity. \$630,000 is requested through the State Participation Fund and \$238,000 through the WIF-Deferred Program. \$600,000 is requested from the rural category. \$850,000 is requested from the acquisition and construction category.

| WATER MANAGEMENT STRATEGIES | | | |
|-------------------------------------|-----------|--------|---------|
| EXPANDED USE OF GW (Tech Memo 4B-8) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| CARRIZO-WILCOX AQUIFER | 14510 | LEON | TRINITY |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| FLO COMMUNITY WSC | 084114000 | LEON | TRINITY |

Fort Bend County MUDs #106, #111, & #67

Fort Bend County MUDs #106, #111, and #67 indicated that financial assistance for future projects is not needed.

Fountain View Subdivision

According to the survey submitted by Fountain View Subdivision, there are no plans in the future that will require financial assistance from TWDB.

Harris County FWSD #47

Harris County FWSD #47, located in the San Jacinto Basin, indicated that financial assistance for future projects is not needed for any of the five funding categories.

Harris County MUD #119 Inwood North

According to the survey submitted by Harris County MUD #119 Inwood North, they currently do not have future plans requiring financial assistance from TWDB.

Harris County MUD #189

Harris County MUD #189, located in the San Jacinto Basin, indicated that financial assistance for future projects is not needed in any of the five funding categories.

Harris County WCID #1

According the survey completed by Harris County WCID #1, the two future projects are the BAWA to WUG Contract and the reallocation for the existing supply. This district will not require financial assistance for future projects.

Harris County WCID #36

Harris County WCID #36 has three projects listed on the survey for 2010; the district indicated on the survey that there are no future plans for assistance from the TWDB.

Hempstead

In the survey, the City of Hempstead has one project listed as a WMS for 2010. Currently, Hempstead does not anticipate requesting financial assistance from the TWDB.

Huntsville

Huntsville is located in Walker County and has one project listed in the survey starting in 2010. Huntsville has indicated there is need for loan assistance in the years 2015, 2020 and 2035. Huntsville anticipates a water treatment plant (see table) as a future water management strategy and has requested a grant for \$61,000,000. This grant will be dispersed in three of five funding programs. Huntsville requested \$8,000,000, \$51,000,000, and \$2,000,000 from the WIF-Deferred Program, WIF-Construction Program and the State Participation Program, respectively.

| WATER MANAGEMENT STRATEGIES | | | |
|----------------------------------|-----------|-----------|-------------|
| Huntsville WTP (Tech Memo 4B-41) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| LIVINGSTON-WALLISVILLE SYSTEM | 084H0 | RESERVOIR | TRINITY |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| HUNTSVILLE | 080292000 | WALKER | TRINITY |
| HUNTSVILLE | 080292000 | WALKER | SAN JACINTO |

Jersey Village

Jersey Village has one project listed on the survey for 2010, and the district indicated that no future water infrastructure projects are planned. Therefore, financial assistance will not be needed from the TWDB.

Kendleton

The City of Kendleton has one project listed on the survey that requires future funding from the TWDB. The year of need for the Expanded Use of Groundwater project is 2010. Kendleton has indicated that this project should be assigned to the Economically Distressed Areas Program. The amount requested is \$914,183. The project will allow the City of Kendleton to increase its supply from the Gulf Coast Aquifer in the Brazos-Colorado Basin in Fort Bend County.

| WATER MANAGEMENT STRATEGIES | | | |
|-------------------------------------|-----------|-----------|-----------------|
| EXPANDED USE OF GW (Tech Memo 4B-8) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| GULF COAST AQUIFER | 07915 | FORT BEND | BRAZOS-COLORADO |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| KENDLETON | KENDLETON | FORT BEND | BRAZOS-COLORADO |

Lake Livingston Water Supply & Sewer Service Company

Lake Livingston Water Supply & Sewer Service Company, which is located in Polk County, completed the survey and did not indicate any future plans for the entity for their ground water expanded use project.

Montgomery County MUD #19

Montgomery County MUD #19 has two projects listed on the survey for 2010, and the district indicated on the survey that there are no future plans for financial assistance from the TWDB.

Montgomery County MUD #8

Montgomery County MUD #8 has four projects listed as future water management strategies. The district indicated on the survey that a total of \$5,837,866 will be requested to fund the Montgomery County MUDs 8&9 Reuse Project. \$1,284,100 is requested through the WIF-Deferred Program in 2011 and \$4,553,766 through the WIF-Construction Program in 2013.

| WATER MANAGEMENT STRATEGIES | | | |
|---|------------------|---------------|--------------|
| Montgomery County MUDs 8 and 9 Reuse (Tech Memo 4B-32) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| INDIRECT REUSE | 3610170 | MONTGOMERY | SAN JACINTO |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| MONTGOMERY COUNTY MUD #8 | 084263000 | MONTGOMERY | SAN JACINTO |
| MONTGOMERY COUNTY MUD #9 | 084264000 | MONTGOMERY | SAN JACINTO |

Montgomery County MUD #9

Montgomery County MUD #9 included five projects listed as future water management strategies. The district indicated on the survey that a total of \$6,407,821 will be requested to fund the Montgomery County MUDs 8&9 Reuse Project. \$1,284,100 is requested through the WIF-Deferred Program in 2011 and \$5,123,721 through the WIF-Construction Program in 2013.

| WATER MANAGEMENT STRATEGIES | | | |
|---|------------------|---------------|--------------|
| Montgomery County MUDs 8 and 9 Reuse (Tech Memo 4B-32) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| INDIRECT REUSE | 3610170 | MONTGOMERY | SAN JACINTO |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| MONTGOMERY COUNTY MUD #8 | 084263000 | MONTGOMERY | SAN JACINTO |
| MONTGOMERY COUNTY MUD #9 | 084264000 | MONTGOMERY | SAN JACINTO |

Northwest Harris County MUD 23

Northwest Harris County MUD 23 has identified one project on the survey that needs \$2,425,000 of financial assistance for the future. About \$1,265,000 is requested through the WIF-Deferred Program and \$975,000 is requested through the WIF-Construction Program. This entity will also be requesting funding through the State Participation Program. The project will allow the MUD to increase its supply from the Gulf Coast Aquifer in the San Jacinto Basin in Harris County.

| WATER MANAGEMENT STRATEGIES | | | |
|--|--------------------------------|---------------|--------------|
| NHCRWA GRP Participation (Tech Memo 4B-6) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| GULF COAST AQUIFER | 10115 | RESERVOIR | SAN JACINTO |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| NORTHWEST HARRIS COUNTY MUD 23 | NORTHWEST HARRIS COUNTY MUD 23 | HARRIS | SAN JACINTO |

North Fort Bend Water Authority

North Fort Bend Water Authority (NFBWA), located in Fort Bend County, includes seven projects listed as future water management strategies. The entity indicated there are projects that will require funding as early as 2010 and as late as 2030. NFBWA requested \$512,942,100 for all the projects identified on the survey. The table below summarizes the use of funding requested from each loan program.

| PROJECT NAME | FUNDING TYPE | | | | |
|--------------------------------------|---------------------------------|--|--|---|--|
| | WIF-Deferred Program | WIF- Construction Program | State Participation Program | Rural Water Assistance Program | Economically Distressed Areas Program |
| COH to WUG Contract | \$172,159 (2020) | \$957,568 (2010) | 0 | 0 | 0 |
| Expanded Use of GW | \$1,859,327 (2010) | \$10,536,183 (2010) | 0 | 0 | 0 |
| Municipal Non Potable Re-Use | \$1,019,530 (2010) | \$5,777,340 (2010) | 0 | 0 | 0 |
| NFBWA 2025 Shared Transmission | \$31,950,000 (2010) | \$181,050,000 (2010) | 0 | 0 | 0 |
| NFBWA Internal Distribution | \$109,000,000 (2010) | \$116,000,000 (2020) | 0 | 0 | 0 |
| NFBWA to WUG Contract | \$6,572,513 (2030) | \$37,244,241 (2030) | 0 | 0 | 0 |

| PROJECT NAME | FUNDING TYPE | | | | |
|----------------------------|----------------------|--------------------------|-----------------------------|--------------------------------|---------------------------------------|
| | WIF-Deferred Program | WIF-Construction Program | State Participation Program | Rural Water Assistance Program | Economically Distressed Areas Program |
| Reallocate Existing Supply | \$1,617,486 (2010) | \$9,165,753 (2010) | 0 | 0 | 0 |

The projects identified in the survey include the NFBWA 2025 Shared Transmission, Internal Distribution, COH to WUG Contract, NFBWA to WUG Contract and Reallocation of Existing Supply. All of the projects involve transferring Lake Livingston water contracted from the City of Houston to various areas of Fort Bend County. Another water management strategy is Expanded Use of Groundwater in which NFBWA will be able to increase its supply from the Gulf Coast Aquifer. Municipal Non-Potable Reuse is a water management strategy which will reuse municipal wastewater from local sources for municipal irrigation. The following tables provide the sources and Water User Group information for the funding requested from the TWDB.

WATER MANAGEMENT STRATEGIES

COH TO WUG CONTRACT (Tech Memo 4B-6)
 NFBWA 2025 SHARED TRANSMISSION (W/ WHCRWA) (Tech Memo 4B-22)
 NFBWA INTERNAL DISTRIBUTION (Tech Memo 4B-22)
 NFBWA TO WUG CONTRACT (Tech Memo 4B-6)
 REALLOCATE EXISTING SUPPLY (Tech Memo 4B-6)

| SOURCES | SOURCE ID | COUNTY | BASIN |
|---------|-----------|--------|-------|
|---------|-----------|--------|-------|

| | | | |
|-------------------------------|-------|-----------|---------|
| LIVINGSTON-WALLISVILLE SYSTEM | 084H0 | RESERVOIR | TRINITY |
|-------------------------------|-------|-----------|---------|

| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
|-------------------|--------|--------|-------|
|-------------------|--------|--------|-------|

| | | | |
|-------|-------|-----------|--------------------|
| NFBWA | NFBWA | FORT BEND | BRAZOS |
| NFBWA | NFBWA | FORT BEND | SAN JACINTO |
| NFBWA | NFBWA | FORT BEND | SAN JACINTO-BRAZOS |
| NFBWA | NFBWA | HARRIS | SAN JACINTO |

WATER MANAGEMENT STRATEGIES

EXPANDED USE OF GW (Tech Memo 4B-8)

| SOURCES | SOURCE ID | COUNTY | BASIN |
|---------|-----------|--------|-------|
|---------|-----------|--------|-------|

| | | | |
|--------------------|-------|-----------|--------------------|
| GULF COAST AQUIFER | 07915 | FORT BEND | BRAZOS |
| GULF COAST AQUIFER | 07915 | FORT BEND | SAN JACINTO |
| GULF COAST AQUIFER | 07915 | FORT BEND | SAN JACINTO-BRAZOS |
| GULF COAST AQUIFER | 10115 | HARRIS | SAN JACINTO |

| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
|-------------------|--------|--------|-------|
|-------------------|--------|--------|-------|

| | | | |
|-------|-------|-----------|--------------------|
| NFBWA | NFBWA | FORT BEND | BRAZOS |
| NFBWA | NFBWA | FORT BEND | SAN JACINTO |
| NFBWA | NFBWA | FORT BEND | SAN JACINTO-BRAZOS |
| NFBWA | NFBWA | HARRIS | SAN JACINTO |

| WATER MANAGEMENT STRATEGIES | | | |
|---|-----------|-----------|--------------------|
| MUNICIPAL NON-POTABLE REUSE (Tech Memo 4B-35) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| MUNICIPAL NON-POTABLE REUSE | 07915 | FORT BEND | BRAZOS |
| MUNICIPAL NON-POTABLE REUSE | 07915 | FORT BEND | SAN JACINTO |
| MUNICIPAL NON-POTABLE REUSE | 07915 | FORT BEND | SAN JACINTO-BRAZOS |
| MUNICIPAL NON-POTABLE REUSE | 10115 | HARRIS | SAN JACINTO |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| NFBWA | NFBWA | FORT BEND | BRAZOS |
| NFBWA | NFBWA | FORT BEND | SAN JACINTO |
| NFBWA | NFBWA | FORT BEND | SAN JACINTO-BRAZOS |
| NFBWA | NFBWA | HARRIS | SAN JACINTO |

North Green MUD

North Green MUD of Harris County has one project listed on the survey for 2010. The MUD will not require financial assistance from the TWDB for future developments.

North Harris County Regional Water Authority

North Harris County Regional Water Authority, which is located in Harris County, has seven projects listed in the IFR survey. NHCRWA has identified the WIF-Deferred Program and the WIF-Construction Program for future financial assistance from TWDB. The table below identifies the level of assistance for each project. The sources and WUGs for each project along with the number of the water management strategy technical memorandum are listed below.

| PROJECT NAME | FUNDING TYPE | | | | |
|------------------------------|----------------------|--------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| | WIF-Deferred Program | WIF-Construction Program | State Participation Program | Rural Water Assistance Fund Program | Economically Distressed Areas Program |
| NHCRWA Internal <u>Dist.</u> | \$80,382,212 (2011) | \$455,499,204 (2013) | 0 | 0 | 0 |
| NHCRWA Transmission | \$37,987,370 (2011) | \$215,261,766 (2013) | 0 | 0 | 0 |
| Houston Indirect Reuse | \$22,062,146 (2033) | \$125,018,827 (2035) | 0 | 0 | 0 |
| NHCRWA Indirect Reuse | \$10,016,804 (2033) | \$56,761,890 (2035) | 0 | 0 | 0 |
| Municipal Non-Potable Reuse | \$647,139 (2023) | \$3,667,121 (2025) | 0 | 0 | 0 |
| COH to WUG Contract | \$3,358,087 (2013) | \$19,029,159 (2015) | 0 | 0 | 0 |
| NHCRWA to WUG Contract | \$6,331,195 (2011) | \$35,876,770 (2013) | 0 | 0 | 0 |

| WATER MANAGEMENT STRATEGIES | | | |
|---|-----------|-----------|-------------|
| NHCRWA Internal Distribution (Tech Memo 4B-23) | | | |
| NHRWA Transmission (Tech Memo 4B-23) | | | |
| COH to WUG Contract (Tech Memo 4B-6) | | | |
| NHCRWA to WUG Contract (Tech Memo 4B-6) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| LIVINGSTON-WALLISVILLE SYSTEM | 084H0 | RESERVOIR | TRINITY |
| LAKE HOUSTON | 10060 | RESERVOIR | SAN JACINTO |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| NHCRWA | 088000000 | HARRIS | SAN JACINTO |

| WATER MANAGEMENT STRATEGIES | | | |
|---|-----------|--------|-------------|
| Houston Indirect Reuse (Tech Memo 4B-31) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| INDIRECT REUSE HARRIS COUNTY | 3510101 | HARRIS | SAN JACINTO |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| NHCRWA | 088000000 | HARRIS | SAN JACINTO |

| WATER MANAGEMENT STRATEGIES | | | |
|--|-----------|--------|-------------|
| NHCRWA Indirect Reuse (Tech Memo 4B-33) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| INDIRECT REUSE HARRIS COUNTY | 3510101 | HARRIS | SAN JACINTO |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| NHCRWA | 088000000 | HARRIS | SAN JACINTO |

| WATER MANAGEMENT STRATEGIES | | | |
|--|-----------|--------|-------------|
| Municipal Non-Potable Reuse (Tech Memo 4B-35) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| DIRECT REUSE | 3610101 | HARRIS | SAN JACINTO |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| NHCRWA | 088000000 | HARRIS | SAN JACINTO |

San Jacinto WSC

San Jacinto WSC has one project listed for 2010, and the district indicated on the survey that a total of \$426,514 will be needed to expand their current groundwater capacity. About \$326,000 is requested through the State Participation Program and \$100,000 through the WIF-Deferred Program. The project will allow San Jacinto WSC to increase its supply from the Gulf Coast Aquifer.

| WATER MANAGEMENT STRATEGIES | | | |
|-------------------------------------|-----------|-------------|---------|
| EXPANDED USE OF GW (Tech Memo 4B-8) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| GULF COAST AQUIFER | 20415 | SAN JACINTO | TRINITY |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| SAN JACINTO WSC | 084328000 | SAN JACINTO | TRINITY |

City of Sealy

The City of Sealy is located in Austin County and is projecting an increased interest for residential, commercial and industrial developments. Sealy is expected to experience substantial population growth in the upcoming years; however, the current water system will be unable to accommodate increased growth. Sealy is requesting assistance from the TWDB for the design and construction of two groundwater pumping plants that will consist of new groundwater wells, ground storage tanks and control buildings. The new water plants will be essential to provide adequate water supplies from the Gulf Coast Aquifer in Austin County to new developments. The estimated cost for the new well, water plant, engineering fees and other appurtenances will total \$6,450,000.

| WATER MANAGEMENT STRATEGIES | | | |
|-------------------------------------|-----------|--------|--------|
| EXPANDED USE OF GW (Tech Memo 4B-8) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| GULF COAST AQUIFER | 00815 | AUSTIN | BRAZOS |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| SEALY | 080549000 | AUSTIN | BRAZOS |

Simonton

Simonton has one project listed on the survey for 2010, and the district indicated on the survey that there are no future plans; therefore, financial assistance will not be needed from the TWDB.

Southern Montgomery County MUD

Southern Montgomery County MUD has two projects listed on the survey for 2010, and the district indicated on the survey that are no future plans; therefore, financial assistance will not be needed from the TWDB.

Spring Creek UD

Spring Creek UD has three projects listed on the survey for 2010, and the district indicated on the survey that there are no future plans; therefore, financial assistance will not be needed from the TWDB.

Stagecoach

The IFR Survey lists three projects for the City of Stagecoach beginning in the Year 2010. Stagecoach does not plan to request financial assistance from the TWDB during the current planning period.

Stanley Lake MUD

Stanley Lake MUD, lists three identified projects potentially requiring outside funding; however, Stanley Lake MUD does not intend to apply for any grants for the future water management strategies.

Sugar Land

According to the survey, there are two future projects listed for the City of Sugar Land. Sugar Land responded to the survey indicating the City will need approximately \$16 million for financial assistance. Sugar Land has identified Sugar Land GRP Reuse as a future project scheduled to begin in 2012 and has requested \$520,000 through the WIF-Deferred Program. Another project (Sugar Land GRP) would require \$19.6 million through the WIF Construction Program. The sources and projected water user groups for the two projects are listed below.

| WATER MANAGEMENT STRATEGIES | | | |
|--|-----------|-----------|--------------------|
| Sugar Land GRP Participation (Tech Memo 4B-16) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| GULF COAST AQUIFER | 07915 | FORT BEND | SAN JACINTO-BRAZOS |
| GULF COAST AQUIFER | 07915 | FORT BEND | BRAZOS |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| SUGAR LAND | 080585000 | FORT BEND | SAN JACINTO-BRAZOS |
| SUGAR LAND | 080585000 | FORT BEND | BRAZOS |
| COUNTY-OTHER | 080757079 | FORT BEND | SAN JACINTO-BRAZOS |
| COUNTY-OTHER | 080757079 | FORT BEND | BRAZOS |
| PLANTATION MUD | 084303000 | FORT BEND | SAN JACINTO-BRAZOS |
| FORT BEND COUNTY MUD #106 | 084117000 | FORT BEND | BRAZOS |
| FORT BEND COUNTY MUD #111 | 084119000 | FORT BEND | BRAZOS |
| FORT BEND COUNTY MUD #67 | 084126000 | FORT BEND | BRAZOS |
| FORT BEND COUNTY MUD #68 | 084127000 | FORT BEND | BRAZOS |
| FORT BEND COUNTY MUD #69 | 084128000 | FORT BEND | BRAZOS |
| WATER MANAGEMENT STRATEGIES | | | |
| SUGAR LAND GRP Reuse (Tech Memo 4B-16) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| SUGAR LAND GRP REUSE | SLGR | FORT BEND | BRAZOS |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| SUGAR LAND | 080585000 | FORT BEND | BRAZOS |

Walker County Rural WSC

Walker County Rural WSC has one project listed for 2012, and the district indicated that a total of \$344,031 will be needed to increase the district's capacity for pumping groundwater from the Sparta Aquifer in Walker County. The entire amount is requested through the WIF-Deferred Program.

| WATER MANAGEMENT STRATEGIES | | | |
|-------------------------------------|-----------|--------|---------|
| EXPANDED USE OF GW (Tech Memo 4B-8) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| SPARTA AQUIFER | 23627 | WALKER | TRINITY |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| WALKER COUNTY RURAL WSC | 084372000 | WALKER | TRINITY |

West Harris County Regional Water Authority

Five water management strategies are listed for the West Harris County Regional Water Authority (WHCRWA) in the IFR survey. Four of the projects will require financial assistance from TWDB. The table below illustrates the total assistance requested for WHCRWA's water management strategies along with the funding categories and the dates that the funds will be requested.

| PROJECT NAME | FUNDING TYPE | | | | |
|---|----------------------|--------------------------|-----------------------------|--------------------------------|---------------------------------------|
| | WIF-Deferred Program | WIF-Construction Program | State Participation Program | Rural Water Assistance Program | Economically Distressed Areas Program |
| WHCRWA Internal Distribution | \$31,820,000 (2012) | \$304,732,726 (2013) | 0 | 0 | 0 |
| WHCRWA 2020 Shared Transmission (w/NFBWA) | \$41,717,700 (2010) | \$229,540,668 (2014) | 0 | 0 | 0 |
| Municipal Non Potable Re-Use | \$80,000 (2015) | \$341,675 (2017) | 0 | 0 | 0 |
| COH to WUG Contract | 0 | \$89,507,274 (2013) | 0 | 0 | 0 |

The WHCRWA internal distribution, transmission and COH contract strategies involve the physical transfer of Lake Livingston water from the City of Houston to areas in west Harris County. The [Trinity River Basin](#) supplies will also allow the WHCRWA to over-convert some areas to surface water, allowing other member districts to remain on groundwater. These member districts include: Katy, Harris County MUD 132, Harris County MUD 151, Harris County MUD 152, Harris County MUD 180, Harris County MUD 146 and Trail of Lakes MUD. The other water management strategy for the WHCRWA, municipal

non-potable reuse, will reuse municipal wastewater from local sources for municipal irrigation. The source and water user group information for the recommended projects is listed in the following tables.

| WATER MANAGEMENT STRATEGIES | | | |
|---|-----------|-----------|-------------|
| WHCRWA Internal Distribution (Tech Memo 4B-25) | | | |
| WHCRWA 2020 Shared Transmission (w/ NFBWA) (Tech Memo 4B-25) | | | |
| COH to WHCRWA Contract - Lake Livingston (Tech Memo 4B-7) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| LIVINGSTON-WALLISVILLE SYSTEM | 084H0 | RESERVOIR | TRINITY |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| WHCRWA | 088002000 | FORT BEND | SAN JACINTO |
| WHCRWA | 088002000 | HARRIS | SAN JACINTO |

| WATER MANAGEMENT STRATEGIES | | | |
|--|-----------|-----------|-------------|
| MUNICIPAL NON-POTABLE REUSE (Tech Memo 4B-35) | | | |
| SOURCES | SOURCE ID | COUNTY | BASIN |
| MUNICIPAL NON-POTABLE REUSE | MNPR | FORT BEND | SAN JACINTO |
| MUNICIPAL NON-POTABLE REUSE | MNPR | HARRIS | SAN JACINTO |
| WATER USER GROUPS | WUG ID | COUNTY | BASIN |
| WHCRWA | 088002000 | FORT BEND | SAN JACINTO |
| WHCRWA | 088002000 | HARRIS | SAN JACINTO |

9.3.2 Summary of Survey Results

Altogether, thirty one WUGs and WWP's responded to the survey, indicating the level of funding needed for future programs. The type of projects that the WUGs will require financial assistance from TWDB included increased contractual supplies, expanded use of groundwater, water treatment plants, water transfer, etc. The cumulative total of financial assistance needed to carry out these types of projects is \$2,730,442,272. The WIF-Construction Program garnered the most applicants. Entities requested \$2,309,340,095 in loans and grants from the TWDB through this program. The projects identified in the survey anticipate funding will be required as early as 2011 and as late as 2040. \$401,446,480 is requested through of the WIF-Deferred Program. Based on the survey responses, \$17,956,514 should be allocated from the State Participation Program. WUGs also requested \$914,183 and \$600,000 from the Economically Distressed Area Program and the Rural Water Assistance Program, respectively.

Table 9-3
Summary of Survey Results

| Funding Type | Funding Requested (\$) |
|---------------------------------------|-------------------------------|
| WIF-Deferred Program | <u>\$401,446,480</u> |
| WIF-Construction Program | <u>\$2,309,340,095</u> |
| State Participation Program | <u>\$18,141,514</u> |
| Rural Water Assistance Program | <u>\$600,000</u> |
| Economically Distressed Areas Program | <u>\$914,183</u> |
| Total | <u>\$2,730,442,272</u> |

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